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NAIC Hearing on Insurance Credit Scoring

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Actuarial Considerations

The Role of Risk Classifications in the Insurance System

Risk classifications are any factor used by an insurer to segment the population for purposes of determining whether to offer insurance, what terms and products to offer and what price to offer, whether that is called underwriting, tier placement or rating.

What is role of risk classification? Why not one average rate for everyone -- why not average rates for everyone?

1. Protect insurer financial condition by preventing or limiting adverse selection
2. Promote loss prevention / loss mitigation
3. Fairness in pricing -- group consumers of similar risk for purposes of assigning premium
4. Fairness in pricing -- rates based on characteristics society deems fair

Some risk classification is essential to prevent adverse selection, to provide incentives for loss prevention and meet basic **societal** standards of fairness and equity..

Revolution in Risk Classification

In recent years, risk classification has become more and more detailed, with more and more rate levels, more rating factors and more categories within rating factors. As risk classification becomes more and more detailed, the spread of prices increase as the cost for the most desirable policyholder goes down and the cost for the most undesirable policyholder goes up.

This has profound implication for the affordability of insurance because, inevitably, those consumers least able to afford insurance are the least desirable consumers for insurers and the ones facing higher and higher prices because of ultra risk classification.

Risk classification taken to the extreme is the end of insurance – a pay-as-you-go system in which those who pose no risk pay little or nothing and those who have a claim pay the cost of the claim.

Insurance credit scoring was the beginning of this revolution in risk classification because it was a massive database on a huge number of consumers that lent itself to the data mining necessary for refined risk classifications. That data mining / risk classification process has moved on to other consumer databases and other questionable risk classifications: education, occupation, prior liability limits, household composition, property-specific catastrophe and geographic rating, policy inquiries and surely others we do not know about.

Correlation Necessary, But Not Sufficient to Justify a Risk Classification

The fact that a characteristic of the consumer, vehicle or property is associated with a difference in expenses or expected losses is a necessary, **but not sufficient**, justification for use as a risk classification.

For actuaries, the definition of fair or equitable is simply a difference in expected costs: 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*.¹

While this may be a sufficient definition of fair for insurers and actuaries, it is not sufficient for meeting public policy goals of insurance.

Just because insurers can find a characteristic that is correlated with expenses or expected losses does not mean that characteristic should or must be used.

Insurers themselves ignore or downplay risk factors demonstrably related to expected losses for their own business purposes – miles driven is a prime example – and yet the insurance system has not collapsed.

Insurers argue that failure to use insurance scoring will result in “low risk” consumers subsidizing “high risk” consumers.

The purpose of insurance is to pool risks – those with claims are subsidized by those without claims. The purpose of insurance is not to allocate costs to those who generate the costs, but to spread the risk and the costs across a pool of consumers. This is what makes it insurance and not a pay-as-you-go system.

¹ ASOP 12, 2005 Edition, Section 3.2.1. The original ASOP on Risk Classification, issued in 1989, Section 2.4, defined “Equitable or Fair—Appropriately reflecting differences among the costs of identifiable risk characteristics. The two terms are used interchangeably in this standard.”

Certain characteristics are not permitted – race, religion, national origin and in some states, marital status, credit information or being an elected official. They are not permitted because society does not believe these are proper bases for charging different insurance premiums – regardless of whether these characteristics are correlated with claims. We don't allow race-based life insurance premiums even though there is evidence that African Americans have shorter life expectancies than White Americans.

While we will argue that insurance scoring violates public policy and should be banned for that reason, it is clear that insurers' use of insurance scoring is not necessary, one, to protect insurer financial condition by preventing adverse selection, and two, to create a fair risk classification system.

It is not necessary because sufficient risk classification exists to protect insurer financial condition and prevent adverse selection. Insurance scoring not only does not prevent adverse selection – most consumers do not know that their credit information is used for underwriting or rating insurance – insurance scoring lends itself to adverse selection because it invites consumers to manipulate their credit score. The evidence of this is that there are no problems associated with the absence of credit scoring to be found in those states which ban credit scoring. In fact, insurers tout the new Massachusetts auto insurance regulatory regime – Progressive and GEICO have recently entered the market – despite a ban on insurance scoring. There are no problems in the California auto or Maryland homeowners markets attributable to these states' prohibition on insurance scoring.

Insurance scoring is not necessary to create a fair insurance system. A ban on insurance scoring does not prohibit insurers from using risk classifications that consumers understand and respond to for purpose of loss mitigation, like driving record, anti-theft devices, type of vehicle, catastrophe-resistant construction and many others.

Further, insurance scoring should be banned because it undermines the vital loss mitigation role of insurance. Insurance scoring provides no economic incentives for changing risky behavior; only economic signals to manipulate a credit report.

But beyond this, insurance scoring should be prohibited on purely actuarial grounds as unfairly discriminatory in the actuarial sense and in violation of actuarial standards of practice.

Insurance Scoring is Unfairly Discriminatory within Traditional Actuarial Standards and Should Be Prohibited by Regulators Using Existing Regulatory Authority

First, it is important to state that actuarial standards are generally developed by actuaries who work for insurance companies and the effect of the standards is broaden the acceptable practices of actuaries rather than limit them.

Yet, even the actuaries, within the Actuarial Standard Of Practice (ASOP) 12 on Risk Classification, acknowledge the obvious – that a risk classification must be objectively and specifically identified:

3.2.3 Objectivity—The actuary should select risk characteristics that are capable of being objectively determined. A risk characteristic is objectively determinable if it is based on readily verifiable observable facts that cannot be easily manipulated. For example, a risk classification of “blindness” is not objective, whereas a risk classification of “vision corrected to no better than 20/100” is objective.

There is also a document called the “Risk Classification Statement of Principles,” which contains much the same guidance as the ASOP, but also includes a section on **controllability**.

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.

Clearly, a risk classification that can be manipulated by the consumer is not objective or specifically identifiable. Further, if, for example, there are five categories of a particular risk classification, a consumer should be identified with one, and only one, category. If the categories for miles driven are 0 to 5,000; 5,001 to 7,500; 7,501 to 10,000; 10,001 to 12,500 and greater than 12,500, a consumer is eligible for one category only.

The risk classification categories must be mutually exclusive else the risk classification will be unfairly discriminatory in the actuarial sense – it will cause consumers of similar expected risk to be treated differently or cause consumers of different expected risk to be treated the same.

For example, a risk classification based on hair – length, color, thickness – would not be actuarially sound because a consumer could manipulate his or her hair – by cutting it, coloring it, treating it, having hair transplants, putting on a wig. And the hair could change over time – brown one day, grey a few weeks later.

Insurance scoring violates actuarial standards of practice because the risk classification is not objectively and specifically determinable and because it is subject to manipulation. Insurance scoring is unfairly discriminatory for the following specific reasons and should be prohibited by regulators under existing statutory authority.

Not Objective

1. Differences across credit bureaus
2. Differences within a credit bureau due to lender choices
3. Changes in definitions of credit report items – bankruptcy law change
4. Public policy initiatives changing credit scores – moratorium on foreclosures
5. Lack of information – 25% of reports contain insufficient information for scoring, clearly that 25% of population have a variety of risk characteristics
6. Timing of report – balance to limits varies by time of the month
7. Decisions of lenders – not reporting limits, changing limits

Manipulation

1. Invitations/Solicitations for Manipulation
2. Piggy-Back on another consumer
3. Shift balances from one car to multiple cards

Penalize Consumer for Rational Behavior

1. Shop around for best rates
2. Cancel a card when lender acts unfairly
3. Get a card to get 10% first visit discount

Impact of Economic Conditions / Model Versions

1. Miles driven: fewer miles driven means less exposure regardless of economic conditions
2. Delinquency: means something different in 2008 than in 2004 – FICO has updated its credit scoring model (FICO 08) to address the fact that its scoring model did not work well in predicting defaults and subprime crisis.

Multiple Models

1. Modelers produce multiple auto and homeowners models: Preferred Auto Minimum Limits; Preferred Auto Greater Than Minimum Limits, Standard Auto Minimum Limits, Standard Auto Greater Than Minimum Limits, Non-Standard Auto.
2. Consumer outcomes can vary based on which model the consumer is channeled into.

Accident Frequencies Decline as Credit Scores Worsen

There is strong evidence that insurance scoring itself is not a predictor of risk or insurance claims, but, rather, that insurance scoring is a proxy for some other factor or factors that are truly related to claim experience.

If a risk classification is truly related to claims, we expect to see that relationship hold over time and as the incidence of the risk classification in the population increases or decreases. For example, we know that fewer miles driven means, on average, less exposure to accidents and claims, while more miles driven means more exposure. If there is a significant increase or decrease in miles driven, we expect to see fewer claims.

We know that youthful drivers are more likely to be in auto accidents than drivers with greater experience. This insight has led to graduated licensing programs and a resulting reduction in youthful driver accidents. But, if the percentage of youthful drivers in the population were, for example, to double from 10% to 20% with a couple of years, there is no doubt that the overall population frequency of accidents would increase.

With insurance scoring, we do not see the relationship between credit scores and claims hold over time. Over the past two years, credit scores have suffered because of:

- an increase in loan delinquencies
- an increase in mortgage defaults
- an increase in foreclosures
- an increase in bankruptcies
- an increase in debt to limits ratios because of lenders slashing credit limits and unemployment
- an inability to tap home equity due to negative equity and tightened lending standards

All these economic results impact credit scores – payment history, public records, balance to limits ratios.

If credit scoring were truly related to the likelihood of filing a claim, then during this unprecedented period of financial stress on consumers, we would expect to see an increase in claims. Stated differently, just as we would expect an increase in claims if the percentage of youthful drivers in the population increased rapidly, we would expect an increase in claims if the percentage of consumers in the population with poor credit scores increased.

Yet, during this period of worsening credit scores, auto claim frequency has declined. The Insurance Services Office reports the following changes in claim frequency from first quarter 2006 through fourth quarter 2008:

Bodily Injury Total Limits	-10%
Property Damage Liability	-5%
Personal Injury Protection	-15%
Collision	-2%
Comprehensive	-13%

The Missouri, Texas and FTC Studies

The Missouri Department of Insurance Study

The Missouri Department of Insurance released a study that specifically examined the impact of insurance credit scoring on the availability of insurance coverage in poor and minority communities. This was the first independent study based on detailed insurance credit scoring data using rigorous statistical analysis. The Department collected credit score data aggregated at the ZIP Code level from 12 insurers for the study period of 1999 to 2001. For each Missouri ZIP Code, the Department obtained:

- Mean credit score
- The number of exposures for each of five equal credit score intervals

The Department then utilized a variety of multi-variate statistical techniques to isolate the relationship of income and race to insurance credit scoring, independent of other factors. The study found:

- ***The insurance credit-scoring system produces significantly worse scores for residents of high-minority ZIP Codes.*** The average credit score rank in “all minority” areas stood at 18.4 (of a possible 100) compared to 57.3 in “no minority” neighborhoods – a gap of 38.9 points. This study also examined the percentage of minority and white policyholders in the lower three quintiles of credit score ranges; minorities were overrepresented in this worst credit score group by 26.2 percentage points.
- ***The insurance credit-scoring systems produces [sic] significantly worse scores for residents of low-income ZIP Code.*** The gap in average credit scores between communities with \$10,953 and \$25,924 in *per capita* income (representing the poorest and wealthiest 5 percent of communities) was 12.8 percentiles. Policyholders in low-income communities were overrepresented in the worst credit score group by 7.4 percentage points compared to higher income neighborhoods.

- ***The relationship between minority concentration in a ZIP Code and credit scores remained after eliminating a broad array of socioeconomic variables, such as income, educational attainment, marital status and unemployment rates, as possible causes.*** Indeed, minority concentration proved to be the single most reliable predictor of credit scores.
- ***Minority and low-income individuals were significantly more likely to have worse credit scores than wealthier individuals and non-minorities.*** The average gap between minorities and non-minorities with poor scores was 28.9 percentage points. The gap between individuals whose family income was below the statewide median versus those with family incomes above the median was 29.2 percentage points.

Based upon the results of this study, the former Governor of Missouri has called for a ban on insurance credit scoring.

The Texas Department of Insurance Preliminary Report

The Texas Department of Insurance (TDI) reviewed over 2 million policyholder records and obtained policyholder-specific information on race. The TDI report, issued in the beginning of January 2005, states unequivocally that insurance credit scoring discriminates against minority consumers:

The individual policyholder data shows a consistent pattern of differences in credit scores among the different racial/ethnic groups. The average credit scores for Whites and Asians are better than those for Blacks and Hispanics. In addition, Blacks and Hispanics tend to be over-represented in the worse credit score categories and under-represented in the better credit score categories.²

The TDI study confirms and validates the Missouri Department of Insurance (MDI) study. Insurers complained about the Missouri study because it inferred socio-economic characteristics from ZIP Codes to average credit scores. But the MDI methodology is well accepted in the field of fair lending analysis. The TDI study not only confirms the MDI study results – it validates the MDI methodology.

² Texas Department of Insurance, “Report to the 79th Legislature: Use of Credit Information in Texas,” December 30, 2004, page 3.

The FTC Study

Mandated by Congress, the Federal Trade Commission conducted a study of insurance credit scoring for auto insurance. The study was flawed, biased and unreliable for many reasons, some of which are listed below. But even this flawed report on insurance scoring – despite relying upon data hand-picked by the insurance industry – found insurance scores were worse on average for African-Americans and Hispanics and that insurance scoring was a proxy for race. And had the FTC actually used an independent and comprehensive set of insurance data, the measured racial discrimination would have been much greater.

The FTC used only data on policies secretly selected by insurers. No data on applications that did not result in policies were obtained or analyzed. Consequently, consumers who were priced out of the market for the handful of insurers included in the study because of insurance scoring did not get counted or analyzed. It is certain that this population was disproportionately minority.

The FTC analysis of insurance scoring is deeply flawed and the report is unresponsive to its Congressional mandate. The problems include:

1. The failure to obtain a comprehensive and independent data set for analysis and the reliance upon a data set hand-picked by the insurance industry. The insurance industry effectively controlled the study by dictating the data that would be used in the study.
2. No substantive analysis of the impact of insurance scoring on the availability and affordability of insurance products as requested by Congress. Because of its reliance on industry-selected data, the FTC performed no analysis of how consumers actually fared from insurers' use of credit scoring.
3. Regurgitating insurer claims about credit scoring despite evidence that contradicts these claims. The FTC ignored evidence indicating that the correlation between insurance scores and claims was a spurious correlation – that insurance scoring was a proxy for some other factor actually related to claims.
4. The failure to analyze the "blaming-the-victim" strategy used by insurers to justify insurance scoring -- the bogus claim that people who manage their finances well are likely to manage their risks well and that's why credit scoring works. The fact is that, by the credit modelers own admission, fully 20% of the population is unscorable with tradition credit reports because of little or no information in the files. These folks are disproportionately low income and minority consumers who get charged higher rates through no fault

of their own. And even a cursory examination of actual scoring models reveals that most of the factors determining an insurance score have nothing to do with whether a consumer pays her bill on time, but with factors related to socio-economic status. Yet, the FTC report dutifully repeats this desperate rationalization for insurance scoring with no critical analysis.

5. The failure to examine any alternatives to insurance scoring that are predictive of claims but are not based on any consumer credit information. The FTC ignored research indicating that insurers could eliminate the use of credit information but obtain the same ability to predict claims with advanced modeling and data mining of traditional rating factors. Consequently, the FTC ignored an obvious alternative to insurance scoring that could reduce the impact on low income and minority consumers.