

## **FICO Credit-Based Insurance Scores**

Insurance is a Risk Management Tool. Personal insurance is a financial arrangement that allows an individual with financial assets to protect those assets in a cost effective way by spreading the risk of loss to those assets among a pool of similarly situated individuals. Each individual in the pool agrees (in an insurance contract or “policy”) to contribute money to the pool up front so that the money in the pool (held by the insurance company) will be sufficient to pay the losses of the participants (the “policyholders”) in the pool. Each policyholder’s contribution (the “premium”) is predicted by the insurance company in advance by the use of the law of large numbers and actuarial science. The money in the pool is used to fund the actual losses of the pool (and to pay the administrative expenses of managing the pool). This method of risk sharing is intended to protect the pool participants from the cost of a large loss that is likely to occur only infrequently, but would be financially burdensome to the participant in the event she were not part of the pool.

Insurers Facilitate Risk Sharing. An insurance company is a mechanism to collect the pool participants’ contributions and pay their losses. The insurance company makes money by keeping its administrative costs low and by keeping the pool’s losses small. The primary way to keep losses small is by only admitting participants into the pool who are least likely to have losses. Since insurance is an extremely competitive industry, selling an essentially fungible product, policyholders will generally buy their policies from the lowest cost insurance company. Thus, in order to attract and keep low-risk participants to the pool, an insurer must keep its rates as low as possible to attract more low-risk participants to the pool. It is to the advantage of both policyholders and insurance companies for the pool’s losses to be small. Using actuarial science to refine the risk of each pool participant, insurers bring competitive efficiency to the industry, while allocating pool participants’ contributions and losses more exactly and thus more fairly.

Insurers Must Avoid Adverse Selection. One way for an insurance company to operate this pool would be to admit anyone into the pool at the same rate of contribution as everyone else. In that case, every participant would pay the same premium and the pool’s losses would be equally distributed among the participants. However, this arrangement would quickly result in the lower-risk policyholders in the pool leaving for another pool where the premiums were lower; the higher-risk policyholders would stay because they would not be able to find another pool where their premiums were lower. This phenomenon of selecting out the better risks (“*adverse selection*”) would result in higher losses for the pool. The remaining policyholders would be charged even more for the increased losses in the pool, and there would be more defections, until finally the pool would no longer be able to sustain itself.

Insurers Must Select the Best Risks for the Pool. Insurers must keep their premiums as low as possible to attract the lowest-risk policyholders – those who have the fewest losses. Insurance companies try to (i) select the best risks for their pool (through *underwriting*); and (ii) assess higher contributions (premiums) to those risks who have a

greater tendency to have more frequent or more costly losses. Insurers compete with each other to more accurately match an individual's risk profile to her pool contribution. If an insurer charges too little, and the premiums are insufficient to pay for the losses in the pool, the insurer will have to increase the premiums it charges to current and future policyholders. This could start an irreversible process of adverse selection, which drives lower-risk policyholders to another pool, which drives up the losses of the policyholders left in the pool, and the cycle continues until the insurer goes out of business.

Selecting Risks Requires Making Accurate Predictions. Selecting the lowest-risk policyholders to be participants in the pool, and assigning the correct amount of premium to each policyholder involves making predictions. When an insurer selects the lowest-risk participants for the pool, the insurer must make the most accurate possible prediction about the risk presented by each member of the pool. Those predictions are based on an actuarial analysis of the past losses experienced by individuals who are similarly situated from a risk perspective, i.e., individuals with a similar risk profile. An insurer must make a determination of each policyholder's risk profile by selecting relevant factors or characteristics that have been shown to be statistically related to insurance losses. Profiles are grouped into risk classifications for rating purposes. Expertly done, these risk classifications make the resulting insurance rates very precise for the group of risks in those classifications.

Using Accurate Risk Factors Eliminates a Risk Premium. The insurer that most accurately predicts the losses of its pool will have a competitive advantage over other insurers. This is because an insurer must protect its own solvency, and in the face of the financial uncertainty presented by the risk of losses to the pool, the insurer must charge its pool participants a "risk premium". A "risk premium" is defined as the return in excess of the risk-free rate of return that an investment is expected to yield. A risk premium is a component that factors into every decision made by a financial institution when extending credit or offering insurance. Thus, the insurer with the most accurate risk information can reduce its risk premium and can charge lower premiums without worrying about having enough money to pay the pool's losses. Charging lower premiums allows the insurer to select the best risks for its pool; companies that do not use the most accurate risk information must charge a higher risk premium, and thereby are prone to adverse selection. The more predictive an insurer's risk assessment, the more precisely it sets its premiums, enhancing efficiency and competition.

Using credit-based insurance scores as an underwriting tool does more than simply redistribute premiums among all policyholders. On an industry level, if all insurers are able to use the most predictive risk factors, the cost of insurance to all policyholders will come down by reducing some of the risk premium that is built into rates when the risk is less well understood. The use of more predictive rating factors creates an overall reduction of premiums in the system. Most policyholders will see a reduction in their premiums, and the overall amount of premiums in the system will be reduced as well. The cost of insurance to consumers is not a zero-sum game.

FICO Credit-Based Insurance Scores. FICO credit-based insurance score models are built for the sole purpose of predicting insurance losses. There are no assumptions built into FICO credit-based insurance scoring models other than mathematical assumptions. There are no policy decisions, no judgments, and no attempts to anticipate or direct the results of the model. Single factors have no specific weight assigned to them, except as they relate in combination with other factors in the models. A FICO credit-based insurance scoring model is a complex mathematical algorithm that is built solely to predict the likelihood of insurance losses. It is an analysis of millions of insurance loss results from past empirical data, using hundreds of credit characteristics as inputs to the model, and looking for correlations between the two. The analysis finds patterns among the factors that have a statistically significant correlation to insurance losses and builds those patterns into rules. There is no attempt made to determine why the model works, or why credit characteristics predict insurance losses.

The Correlation vs. Causation Debate. It is beyond debate that the use of credit-based insurance scoring models can provide lift to insurers in the underwriting and rating processes. The correlation between a person's credit characteristics and that person's propensity to have insurance losses has been demonstrated by several credible multivariate analyses. As the Federal Trade Commission and several states' studies have shown, credit-based insurance scoring models are demonstrably efficient and accurate in predicting insurance losses. Moreover, the results of the model are consistent over time.

Critics of such models say that there is no causal link between a person's credit characteristics and that person's propensity to have insurance losses. However, as the American Academy of Actuaries' "Risk Classification Statement of Principles" points out, the real test of a valid risk classification characteristic is whether there is a "reasonable relationship" between the characteristic and the hazard insured against.

[I]n 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.

A person's FICO credit-based insurance score assesses that person's history of pursuing, accepting and meeting credit obligations. The score mathematically correlates this assessment to past insurance losses reported by similarly situated individuals. Thus, a FICO credit-based insurance score is a risk classification characteristic that bears a plausible relationship to the risk of insurance loss; the score is neither obscure nor irrelevant to the risk accepted by an insurance company because it was built for precisely that purpose.

Proxy. Critics of credit-based insurance scores say that the scores, which are built with depersonalized credit data, are unfairly discriminatory because they are a proxy for other factors that are illegal to use for underwriting or rating purposes.

By definition, a factor is a proxy for a second factor if the first factor is used as a substitute for the second factor with the intent to circumvent a prohibition against the use of the second factor and achieve the result that would be expected if the second factor had been used directly. The use of a “proxy” is illegal because it is a method of overt discrimination. FICO credit-based insurance scores are not a proxy for race, ethnicity, income, disability, unemployment, marital status, or any other prohibited insurance rating factor, as there is no correlation between any one of these factors and a person’s credit-based insurance score. There may be more of a correlation between a driver’s prior accidents (as an underwriting or pricing factor) and the driver’s age or race, since young drivers living in urban areas have more accidents than the general population; nobody has argued that the use of prior accidents is a proxy for racial discrimination.

“Proxy Effect”. Unfortunately, the Federal Trade Commission inadvertently muddied the waters in its 2007 Report on the question of whether credit-based insurance scores were a proxy for race or ethnicity. In the Executive Summary (page 4), the FTC said,

“Credit-based insurance scores appear to have little effect as a ‘proxy’ for membership in racial and ethnic groups in decisions related to insurance.”

The FTC’s statement has created confusion around the term “proxy effect”, which has no legal definition, and has led to unfocused discussions about what should be the permissible amount of proxy effect. Instead, the relevant inquiry should be whether credit-based insurance scores are discriminatory on their face—because one or more of the factors used to build the model are prohibited factors or proxies for prohibited factors—or whether the use of credit-based insurance scores results in a disparate impact on a protected class of individuals. It has been demonstrated consistently that credit-based insurance scores do not use any prohibited factor or proxies for a prohibited factor; their use does not create a disparate impact; and their use is generally beneficial to policyholders of all races and ethnicities. For example, Federal Housing Administration Commissioner Brian Montgomery stated in 2008 that FHA data showed families with lower incomes often have higher credit scores (note that income is not used to build credit-based insurance scoring models, nor is it a factor considered when insurers calculate credit-based insurance scores).

Double-Counting. Critics have suggested that even if credit-based insurance scores are not used as a proxy for illegal underwriting or rating factors, the scores have the effect of “double-counting” certain characteristics. For example, a credit-based insurance score may predict a policyholder’s capacity for fiscal self-discipline and management of resources, which could be correlated to age or location that are already incorporated into an insurer’s underwriting and pricing models. This overlapping impact, however, does not mean that credit-based insurance scores are a proxy for other characteristics; if this were true, insurers could stop using credit-based insurance scoring models and simply double count such characteristics in their own underwriting and pricing models. Indeed, it could be argued that the use of prior accidents as an underwriting factor double counts

age and race, since young drivers living in urban areas have more accidents than the general population. There is ample evidence that credit-based insurance scores provide further predictive lift; otherwise, insurance companies would not use the scores.

Disparate Impact. Critics have said that even if credit-based insurance scores are not overtly discriminatory, their use creates an illegal disparate impact on protected classes of individuals. This concept that a company's business practices—employment, lending, or insurance underwriting—could be illegally discriminatory, even though the policies were not discriminatory on their face, was developed by the U.S. Supreme Court as the “effects test”. This doctrine is explained in the FTC's Commentary to Regulation B, which implements the Equal Credit Opportunity Act (section 202.6, 6(a)2) as it pertains to the granting of credit:

The effects test is a judicial doctrine that was developed in a series of employment cases decided by the U.S. Supreme Court under Title VII of the Civil Rights Act of 1964 . . . and the burdens of proof for such employment cases were codified by Congress in the Civil Rights Act of 1991 . . . Congressional intent that this doctrine apply to the credit area is documented in the Senate Report that accompanied H.R. 6516, No. 94-589, pp. 4-5; and in the House Report that accompanied H.R. 6516, No. 94-210, p.5. The Act and regulation may prohibit a creditor practice that is discriminatory in effect because it has a disproportionately negative impact on a prohibited basis, even though the creditor has no intent to discriminate and the practice appears neutral on its face, unless the creditor practice meets a legitimate business need that cannot reasonably be achieved as well by means that are less disparate in their impact. For example, requiring that applicants have income in excess of a certain amount to qualify for an overdraft line of credit could mean that women and minority applicants will be rejected at a higher rate than men and nonminority applicants. If there is a demonstrable relationship between the income requirement and creditworthiness for the level of credit involved, however, use of the income standard would likely be permissible.

This doctrine of disparate impact also applies to employment and insurance law. In its balanced report to Congress on Credit-Based Insurance Scoring in July 2007, the Federal Trade Commission addressed the theory of disparate impact (Executive Summary, p. 4):

After trying a variety of approaches, the FTC was not able to develop an alternative credit-based insurance scoring model that would continue to predict risk effectively, yet decrease the differences in scores on average among racial and ethnic groups. This does not mean that a model could not be constructed that meets both of these objectives. It does strongly suggest, however, that there is no readily available scoring model that would do so.

The Commission's Report concluded that the use of credit-based insurance scores does not have a disparate impact under the law because it is neutral on its face and serves a legitimate business need; there was no evidence of intent to discriminate; and the results could not reasonably be achieved by means that are less disparate in their impact

FICO's Interest is to Protect the Integrity of the Models. Many state legislatures have enacted laws and promulgated regulations that restrict how an insurer may select its pool applicants. These laws generally limit or restrict the factors or characteristics that may be used in making a risk profile. For example, most states have prohibited certain factors such as race or national origin, for example. Some states have prohibited other factors such as occupation, or age, or sex, irrespective of whether there is empirical data that would indicate a statistical relationship between that factor and insurance losses. These

laws reflect the social policy of those states, and these are the rules by which FICO credit-based insurance scoring models are built. The models are built with depersonalized credit data, so there is no possibility of bias or unfair discrimination. A FICO credit-based insurance score does not reveal any information about a person's race, ethnicity, marital status or neighborhood. In fact, a FICO credit-based insurance score is an objective standard, which can be used to ensure none of the foregoing discriminatory factors is considered in an underwriting decision. Used properly, the models increase the accuracy of the selection process by insurers, and therefore the fairness of the process for consumers.

FICO has a strong interest in seeing that credit-based insurance scoring models are not misunderstood for what they can do or for what they do not do. The models are simply mathematical algorithms, built with depersonalized, legally acceptable data to predict future behavior. The models are not a proxy for any kind of discrimination. They are predictive and extremely valuable as a risk management tool for insurance companies. Without credit-based insurance scoring models, the selection process for the pool of participants would be less sophisticated, and a great majority of the pool participants—most of whom are good insurance risks—would pay higher premiums. FICO believes it would be a mistake to eliminate credit-based insurance scoring models, which have proven to be a valuable risk management tool for the insurance industry, and, by more accurately predicting risk, a mechanism to deliver fairer results for consumers.

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