

Actuarial Equity or Unfair Discrimination?

When does prudent underwriting become age discrimination? Can age ever be a legitimate yardstick for the sale of automobile insurance?

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AGE HAS ALWAYS BEEN A FACTOR IN THE DEVELOPMENT OF PUBLIC POLICY, such as voting rights, vehicle licensing, and insurance. The traditional assumption has been that rising age leads to a decline in overall ability and that teenagers lack maturity. In certain Canadian provinces, insurers are legally entitled to charge increased premiums to drivers based simply on their age. Insurers have used detailed and long-standing actuarial statistics to identify and quantify potential risks. Their analysis has never been disputed. More younger and older drivers have accidents than other age groups, and the accidents they have tend to be more serious and costly. The premiums they pay reflect this heightened risk.

Now these views are increasingly being questioned. Regulators have been under considerable pressure to make the rate-setting system less discriminatory based on age, generally “fairer” and more “equitable.” Two provinces (Nova Scotia and New Brunswick) have recently been persuaded by these arguments and have banned the use of age as a rating variable for auto insurance. Another, Alberta, has approved a complex matrix of pre-approved rates that excludes age as a variable. Three other provinces (British Columbia, Manitoba, and Saskatchewan) have government monopoly auto insurance schemes in which age is not an included pricing variable.



Some would argue that using age as a rating factor isn't discriminatory because everybody goes through the same ages at one time or another in life. We don't defend the use of age as a rating variable on that basis. Nor do we argue that age is a useful variable if it fulfills some redistributionist standard of goodness by producing the best outcome for the greatest number of insureds. We argue that age can fit with the moral norms of actuarial equity.

The Meaning of Discrimination

The term "discrimination" is defined as the act of recognizing or understanding a difference between one thing and another; it carries both good and bad connotations. A discriminating shopper is one who buys only high-quality items; a discriminatory employ-

ment policy refuses to hire people based on arbitrary preference. It's not the act of recognizing a difference per se that causes concern. Rather, it's the nature of the distinctions that are recognized and the use to which that information is put.

In employment, the sole relevant question is whether the person can do the job. If a particular religious commitment makes a candidate unable to attend work at the required time and there is no feasible accommodation available, then the candidate may not be hired. But on both ethical and legal grounds, attendance at that time must be a true requirement and not a surrogate for exclusion.

In case law and other judicial proceedings, discrimination has acquired a strong negative connotation. *Black's Law Dictionary* describes it as "...unfair treatment or denial of normal privileges

to persons because of their race, age, sex, nationality, or religion. A failure to treat all persons equally where no reasonable distinction can be found between those favored and not favored.” It’s easy to understand why one might conclude that any differential treatment based on age must be unfair and, therefore, unethical.

Age discrimination in auto insurance, however, is based on statistical indicators of potential probability and severity of an accident. The critical question then becomes: Are these appropriate uses of such indicators? Can actuarial equity and its principles give us a plausible moral answer to why some groups in the insurance scheme should be charged more than others, hence avoiding the charge of committing unjust discrimination?

Statistical analysis certainly establishes that young male drivers within a certain age band are responsible for above-average accident losses. However, within this group, most drivers still have a risk profile equivalent to drivers in the older age group. And while disallowing age as a discriminating factor would increase the cost to all low-risk drivers, low-risk drivers are already providing a significant subsidy not only to high-risk drivers but to all other low-risk drivers of an older age.

Simply because the very young and the very old pay more for auto insurance doesn’t automatically mean unfair discrimination has taken place. People who start off with equal resources will, by their own free will and trade, come to have quite unequal resources. But the unequal outcome can’t be thought to be unjust because it was the result of fair exchanges between consenting adults.

No plausible moral theory, however, can ignore costs by simply sticking to the rightness of its pronouncements. In the area of insurance, talk about right or wrong, just or unjust discrimination, must be tempered by some accounting for the costs of implementing the moral rules. The insurance perspective is responsive to the costs of eliminating unjust discrimination because it takes into account the trade-offs between individual characteristics and statistical classifications. It’s the risk classification principles of actuarial equity that allow us to assess whether a proper trade-off has been made between individual characteristics and the relevant characteristics that put the insured into one risk class or another.

As we will illustrate next in our discussion of the function of insurance, the ideas of actuarial equity and risk classification give us a model for assessing whether some form of classification is unjustly discriminatory, based on what factors are truly relevant for the category.



Actuarial Equity and Risk Classification

The origins of insurance can be found in collective societies that date from the earliest of times. More recently, many Mennonites, for example, don’t carry commercial insurance on their farm buildings and livestock. If a Mennonite barn burns down, the surrounding community gathers together and builds a new structure and supplies the unfortunate farmer with new livestock. In effect, Mennonites remove the risk of loss from the individual farmer and spread it over the collective community.

Insurance is really no different, except that the insurance company acts as the formal administrator of this collective process. There is very little difference between what a commercial insurance policy achieves and what the Mennonite community achieves in terms of risk allocation. Insurance removes the risk carried by a specific individual and spreads that risk to a collective group of policyholders.

Any insurance company must pay claims out of premiums collected from policyholders. No insurance company can continue in business for any length of time unless premium income is at least as large as claims paid. In fact, total premium income must equal total claims paid, plus cover the cost of administering the process. This means that if one policyholder’s premiums are decreased, another policyholder’s premiums must be increased. Further, the average policyholder’s premium must actually exceed the expected value of his or her claims in order to pay for the cost of administering the process.

How are premiums determined? If the pricing actuary is convinced that there are characteristics of potential policyholders that can be used to more accurately predict their expected cost to the insurance pool, those characteristics will be used to create risk classes. Each risk class will pay a different premium, but that premium will always be the actuary’s expected cost that the policyholder brings to the risk pool.

This is clearly a form of discrimination. However, actuaries would view this as positive discrimination in that the actuary is observing differences accurately or making distinctions on a sta-



tistical basis. Equal risks are treated equally, but unequal risks are treated unequally. Further, the classification variables used aren't arbitrary but are based on statistically significant correlations to experience period loss costs.

For automobile insurance, risk classes have historically been defined by territory, automobile use, gender of the policyholder, car value (repair costs, probability of theft, etc.), and driving record. Age has also been an important rating variable but normally only up to age 25. Once a driver reaches age 25, the insurer expects to have more information in the driving record variable, and age is no longer

needed to establish rates. Historically, marital status was also used as a rating variable before age 25, with married drivers getting lower rates than unmarried. However, some governments have prohibited the use of this variable, and, in any event, effective definitions that capture the underlying risk measured are increasingly problematic.

Finally, one must remember that the risk and pricing must be assessed and established before the insurance coverage will be in effect. An insurance company can't recoup its losses from an existing policyholder who has a history of large claims. Thus, a classification system should be judged *ex ante* when risks are being assessed, not *ex post*, when it's apparent, based on the risks that did or didn't crystallize, that the insured was a higher or lower risk than that represented by the established price.

The overarching principles of risk classification (as adopted by the American Academy of Actuaries) are five: The system should reflect expected cost differences, distinguish among risks on the basis of relevant cost-related factors, be applied objectively, be practical and cost-effective, and be acceptable to the public.

To the extent possible, insurers attempt to use risk classification variables that are easily ascertainable and easily verifiable. Age is one such variable. Driving patterns, while they might be useful in predicting exposure to risk, are an example of a potential risk classification variable that is extremely difficult to determine ahead of time.

Ethical Justification for Actuarial Equity

Are there forms of discrimination that are not morally discriminatory? There are two fundamental categories of discrimination, redistributionalist discrimination and agent-centered discrimination.

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It is often said that insurance is basically a redistribution. If so, probably the strongest ethical argument in favor of actuarial equity is an ethic that calls for redistributing costs across society in order to achieve the correct distribution of goods. Discrimination based on redistribution results in illegitimate burdens for some and unjust advantages for others. The ideal of achieving equity through leveling everyone to some equal common denominator seems absurd or even monstrous when carried to its end.

The agent-centered approach links charges of discrimination to how people are treated as individuals, not just to how they function in a system for maximizing some overall goal. The principles of actuarial equity fulfill the requirements of an agent-centered theory by appealing to fairness in dealing with others.

Hence, the counterintuitive nature of rate-making and insurance. While the system of insurance distributes risk and costs, the principles of actuarial equity, which lie at the heart of the insurance rate-making process, base rate-making classifications on what is fair. Using age as a risk classification factor may not be a case of unjust discrimination if the differential burdens or advantages it imposes can be justified when it is used as a relevant factor for risk classification.

If actuarial equity can be considered morally fair, is age rating actuarially equitable?

Generally, premiums must equate to the risk the individual brings to the pool. In automobile insurance, the risk is primarily of accident and the consequential claim for damage and personal injury. Risk classification principles would predict that if poorer drivers are charged less than the cost of the risk they bring to the insurance pool, then more of them will buy insurance or they'll buy more insurance than they would if they paid the true actuarial expected cost.

This introduces the concept of moral hazard in insurance. Moral hazard arises when incentives are created through insurance mechanisms that can affect the behavior of an insured, so that the insured acts in a way that maximizes personal benefit. Likewise, without higher insurance costs there will be less incentive to alter higher-risk driving behaviors (driving at night, drinking and driving etc.). With more of these higher risks in the pool, one would expect accident frequency and severity to rise. Statistical evidence of the impact of such cross-subsidization exists in systems where age is not used as a rating criterion, which now occurs in six of the 10 provinces of Canada. Papers by Mark Mullins of the Fraser Institute indicate that both accident frequency and accident severity, per capita, are higher in systems that don't use age in pricing compared with those in which age is used.

The Insurance Bureau of Canada (IBC) (2003) reports that restrictions on risk classification result in cross-subsidization and more high-risk drivers on the road. The same IBC report notes that only six states in the United States have underwriting restrictions on age and gender. In Europe, five countries decided to ban the use of gender and age as underwriting criteria in the 1990s, but today only two of these countries (Finland and Luxembourg) remain on that list. The European Union debated the removal of age and sex as insurance rating variables at a meeting on June 1, 2004. Of the 25 EU nations in attendance, 17 voted against a proposal to prohibit age and sex as rating variables. These included the United Kingdom, France, Germany, Italy, and Spain.

There is statistical evidence that older people are more prone to automobile accidents. The following references all find a strong correlation between age and automobile loss costs: Insurance Institute for Highway Safety (2001, 2003), Laing (2003), and Towers Perrin (2001). Further, the IBC in its annual Green Book publication (Automobile Insurance Experience) publishes a Driver Vehicle Classification Exhibit (AU25, Exhibits I and II) that shows a breakdown of claims costs by age.

A typical pricing pattern for insurers in a free-market jurisdiction in Canada is to charge higher premiums (based on an age rating variable) for those aged 16 to 25; to use the driving record rating variable for mature drivers, often offering a mature-driver discount to drivers between ages 30 and 65; and then to remove the mature-driver discount at around age 65.

Discrimination is the primary foundational concept upon which people challenge differentiation based on age. The language relating to discrimination is so value laden that society is quick—perhaps too quick—to assume that discrimination is automatically unjustified. But using age as a rating variable in automobile insurance is justified because of the principle of actuarial equity and the related concept of risk classification. Actuarial equity is based on fairness, and in order to be fair to the entire pool of insureds, those presenting statistically higher risk ought to pay their fair share of the burden. ●

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
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