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Public Insurance Pricing Based on Demerit Points: A Short Story from Québec

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Abstract. In this short story, I describe the origin of the Quebec public automobile insurance pricing based on demerit points.

Keywords: Automobile insurance pricing; demerit points; road safety prevention; road accidents

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When the Québec Government established the new public automobile insurance plan in 1978, an important question quickly emerged: Does this system provide enough incentives to ensure road safety?

This new plan eliminated at-fault responsibility in accidents with bodily injuries. As a result, past accidents could no longer be used to incorporate individual risks into insurance pricing. The regime also eliminated risk classification based on individual characteristics, which might be useful to predict accident risk.

This pricing approach was based on an equity principle: A no-fault system does not usually involve analysis of accident responsibility. On top of that, the Government wanted to avoid penalizing drivers who were not at fault in previous accidents.

At the time, I was doing a postdoctoral fellowship in the finance department of the Wharton School of the University of Pennsylvania. My main research program was on incentives in contracts in the presence of asymmetric information between the parties. In this type of situation, one party to the contract has usually more information than the other party related to different non-observable characteristics or actions that may affect the results of the contract. This situation may become problematic when the non-observable actions of the better informed party can affect the other party's results.

An insurance contract is a good example of such a contract. The characteristics and behavior of the insured that may affect accident probability and severity are not observable by the insurer during the contractual period.

It is well known that more prudent drivers have fewer accidents. Optimal insurance contracts must therefore contain mechanisms permitting insurers to better evaluate their clients' risk and thereby reduce the frequency and costs of accidents. The main mechanisms are risk classification, partial insurance coverage and insurance pricing based on drivers' past experience.

In 1980, while still in Philadelphia, I wrote a letter to Claudine Sotiau, president and general manager of the *Régie de l'assurance automobile du Québec* (which became the SAAQ in 1990), to inform her of my concerns about the potential negative effects of the *Régie*'s current insurance pricing on road safety in Québec because the new regime was not taking into account incentives to improve accident prevention. All drivers were paying the same price whatever their risk.

At the time, risk coverage might have been considered partial, but it became much more generous for most accident victims after 1978. In 1977, 28% of injured persons were not receiving any insurance under the previous regime, while the new regime covered all victims (Gagnon, 1997; Gauvin, 2004).

The *Régie* wanted to preserve equal access to insurance for all drivers. In essence, however, a no-fault plan cannot use at-fault accidents for insurance pricing, because under such a regime there are no investigations to determine accident responsibility, except in extreme cases.

Much to my surprise, my letter was received very favorably by the *Régie* administrators, who invited me to meet them when I returned to Québec. As I lacked experience in managing research collaboration of this type, I asked my former Ph.D. advisor and colleague Marcel Boyer to join me in this project.

We met with a team at the *Régie* who were highly receptive to our objective of adding more road safety incentives in the pricing of the public insurance system. After a few meetings and discussions, we collectively decided to study how drivers' demerit points could be considered in public insurance pricing.

Demerit points are issued for at-fault driving offenses in the provincial highway safety code. More dangerous offenses incur more points, which should thus indicate a higher accident risk. This was the assumption that had to be tested to link insurance price to risk of accidents. This statistical link had not been tested in the economic and actuarial literatures because private insurers did not have access to information on demerit points.

The *Régie* has the dual mandate of managing both the public insurance plan for bodily injuries and road safety. It has access to all information on drivers' claims for bodily injuries and demerit points. Since the *Régie* was also in change of driver's license administration, it possessed all the necessary data to link driver's license fees, demerit points and accidents. The research challenge was to verify whether past demerit points could be a good predictor of future accidents.

A researcher at the *Régie* was mandated to take a random and anonymous sample of driver's licenses and to link the information with drivers' demerit points and accidents resulting in bodily injuries. This procedure was described in detail in our report presented to the *Régie* in 1985 (Boyer and Dionne, 1985).

The report shows that the number of demerit points that a driver accumulated over the last two years is positively correlated with the number of accidents with bodily injuries that occurred during the current year.

A few years after we submitted our findings to the *Régie*, a Board member suggested that the real implications of the report be examined. The *Régie* asked an independent actuary firm to verify the conclusions of the report and to extend the analysis with new data.

Although we were not given details about this process or access to the report produced by the actuary firm, a reliable source later told us that our results were confirmed by the consultants.

In 1992, the *Régie* decided to modify its pricing by amending the 1978 law. Since then, for a given year, driver's license fees have been based on demerit points accumulated during the two previous years. This formula is still in application in 2026.

The contribution of our report to this evolution of public insurance pricing and its effects on road safety was mentioned in an article by Jean-Marc Gagnon, then president and general manager of the SAAQ, in 1997.

"Another example I would like to mention is the coupling of data on drivers' habits and their involvement in traffic accidents.

Mainly through research conducted by professors Georges Dionne and Marcel Boyer (1985), we came to the conclusion that the only way to encourage safe driving behaviour while being fair to all vehicle owners was to apply a fee structure based on the degree of accident risk each vehicle owner constitutes.

Since 1992, drivers who have accumulated demerit points or were convicted of impaired driving were charged extra premiums.

A recent study by professor Dionne and Charles Vanasse (1996) revealed that the new fee structure has been conducive to improving those drivers' attitude towards safer road use."

The total number of deaths linked to road accidents fell from 1792 in 1979 to 845 in 1995. In 2025, 371 people died on roads in Québec. Many factors contributed to this major positive result, including better road control, fines for bad driving and highly effective road safety awareness campaigns. Surely, the incentive of the new insurance pricing via the management of drivers' licenses has fueled this improvement as well.

I may not have drafted any new laws in my career, but I did play a part in changing at least one!

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