Experience Ratings in Insurance Markets: Theory and Evidence

Welcome address
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Ladies and gentlemen

I am happy to welcome you to this workshop. Its purpose, as the title states, is to discuss recent theoretical and empirical advances in the economics of experience ratings in liability insurance, with a view to contributing to the current debate on possible reforms of rules and practices in Italy. In my introductory remarks, I shall focus on the case of automobile insurance, by far the most important in quantitative terms and the main focus of public debate; however, the lessons we shall learn today are likely to be relevant for other cases, such as that of health insurance.

Let me start by briefly characterising the Italian motor third-party liability insurance market (MTPL). Like in most other countries, it is a large market. As insurance is legally compulsory for most vehicles, the vast majority of households and firms need to buy it in some form; therefore, its cost and its ability to serve its purpose in an effective and transparent way have a non-negligible impact on welfare. In 2021, 43m vehicles, of which 32m cars, were covered by insurance; 2m claims were filed, 14.5 per cent of them involving bodily injuries.

Historically, car insurance has been more expensive in Italy than in comparable European countries. However, premia have come down significantly (-30 per cent, in nominal terms) over the last decade. Several factors have contributed. Increased competition, helped by rules making the mobility of customers easier, has put pressure on margins; specifically, it has reduced market segmentation, thus compressing abnormally high margins in some local markets. The incidence of fraud has also been reduced, not least thanks to the deployment of a common database of claims (managed by Ivass) that makes it possible to detect suspect patterns and conduct cross-checks on potentially fraudulent claims. New legal rules on compensation have reduced uncertainty about the value of awards for physical damage. The gradual spread of 'black boxes' is likely to have encouraged more careful driving by those who have adopted it. Quite possibly, improved road design and maintenance may have enhanced safety. I think we can legitimately say that honest and prudent drivers now face, on average, a better deal than they used to.

With all that, gaps remain. Both the average premium and the average claim cost are still higher in Italy than in other major European countries. Within Italy, geographical differences remain remarkable. Despite the fact that the premium differential between the cheapest and the most expensive province has been reduced by almost one half since 2014, there still is significant geographical segmentation in both accident frequencies (which range from 3 to 8 per cent), and average premia (from 254 to 528 euro).

There is therefore still some way to go, especially if one considers the pressure that inflation is now putting on settlement costs.

A new instrument for openly comparing competing insurance offer ("*preventivatore*") is now in place. It is meant to increase the transparency and contestability of the MTPL market; we expect insurance companies to implement it in full, and customers to make good use of it. Also, the rules about compensation for bodily damage are being further enhanced.

Looking further ahead, there is room for improvement regarding two major issues.

The first issue is compliance. While reliable and precise statistics on delinquency rates are hard to come by, it is estimated that about 6 per cent of drivers are not actually protected by legally mandatory insurance. Since damages caused by uninsured and insolvent drivers can be covered by a solidarity fund payed for by the insurers, the inherent cost is ultimately reflected in premia, and therefore it weighs on law-abiding drivers.

Mandatory car insurance is necessary to avoid adverse selection and harmful externalities, and is therefore in force in most jurisdictions. An enhanced effort to prevent non-compliance is surely warranted; we believe, furthermore, that the potential effectiveness of such an effort is actually growing, thanks to advances in mobility information technology.

The second issue is better pricing. Policy pricing should reflect the actual riskiness of drivers and reward prudent driving. It is here that experience rating enters the picture. Participants in this workshop are surely well aware of the subtle and sometimes counterintuitive issues surrounding the matter. There are few fields where sound theory and econometrics can be of greater help in setting real-world rules and practices, with a view to improving market efficiency.

In Italy, as in other countries, a certificate of a policyholder's driving record ("*attestato di rischio*") contains information on the history of individual claims. It follows the policyholder when (s)he switches company. The certificate specifies a risk class, based on history, as well as the number of at-fault claims in the previous five years. This information is used to adjust the price of insurance and to reduce moral hazard: estimates show that, on average, an additional at-fault claim increases the premium by 27 per cent.

However, since accidents are rare, the current experience rating system is insufficiently precise, in that most people are concentrated in a single risk class. In the second quarter of 2022, 87 per cent of policyholders belonged to the best class, and 89 per cent had no at-fault claims on record for the past five years. This results in too much heterogeneity within the top risk class; class-based premia, in other words, do a poor job of approximating individual "true" expected claims. Better pricing/incentivising tools would surely be welcome.

It is then logical to ask whether, or what, additional information would have the potential to improve premium fairness. That might include items such as the number of traffic violations, the severity of at-fault claims, the "sojourn time" in a risk class, etc. Experience rating, of course, is not the only possible set of tools; other potential risk sharing/ mitigation tools include deductibles, mileage-based charges, mandatory alcohol ignition locks, and much else. Still, many of us believe that experience data could be exploited in a more efficient way.

It is not necessarily a straightforward task, and it does need rigorous economic reasoning. This morning, Jean Pinquet will present a paper that highlights the effects of adding traffic violations and penalties to the traditional information about claims history. Corina Constantinescu will describe a methodology for including claim severity in the calculation of premia. A further possibility, discussed by Yi Xin, is monitoring not only actual accidents, but also near-misses; the implications of doing so are not obvious ex ante (does a near-miss suggest inherent carelessness, or may it result in enhanced risk awareness, hence a more prudent behaviour in the future? You will hear the answer).

An even subtler issue has to do with the information on driving habits recorded by monitoring devices, such as the so-called black box. The paper by Jin Yizhou offers valuable insights into the issue of whether 'portability' of black-box data would improve welfare. The answer, once again, is nuanced.

As another example of the theoretical difficulties implied in pricing schemes, our colleague Marco Cosconati's paper highlights certain possible counter-productive effects of penalties enforced by potential and current insurers, if coupled with price walking strategies.

A final difficulty is the two big issues we face – compliance and risk sensitivity – are connected. The more risk-sensitive the premium is, the fairer the pricing becomes in actuarial terms; but at the same time, the incentive for non-compliance also becomes stronger because of adverse selection. Even as things stand now in this country, elevated geography-based premia in some provinces appear to be associated with a higher prevalence of evasion. While enforcement must indeed be made more effective in order to produce a superior outcome in terms of welfare, and in the interest of honest and prudent drivers, there may be limits to what enforcement can realistically achieve with given resources. If strict risk-sensitivity produces in some cases premium levels so extreme that they effectively price out certain drivers, relying on enforcement alone may be illusory and, some might argue, even unfair in a non-technical sense. One more trade-off to reflect on.

This morning's academic discussion will provide useful insights for the second part of our programme, where industry representatives and authorities will debate on possible directions for reform. On our side, and given our statutory responsibilities, we intend to pay the utmost attention to any sensible proposals and observations.

Turning to our academic program, it is now my pleasure to introduce Professor Fang Hanming, who kindly accepted to give a plenary lecture on the topic of the workshop.

Professor Fang is the Joseph M. Cohen Term Professor at the University of Pennsylvania and the acting chair of its economics department. His remarkable scientific contributions span a wide range of subjects, from public to labour economics, from the economics of information to the economics of insurance. For his work in insurance economics he was awarded the 17th Kenneth Arrow Prize by the International Health Economics Association, together with Mike Kean and Dan Silverman. He is also known, by the way, for his role in stimulating independent research on the Chinese economy.

Before leaving the floor to Professor Fang, let me express my gratitude to our distinguished panel of speakers; and thank all participants, including those that are following us online. I wish you all a fruitful and enjoyable discussion.

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