Efficiency of Risk Classification and Insurance Market Regulation through the Integration of Advanced Technology

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ABSTRACT

Given that the insurance market is characterized by asymmetric information, its efficiency has traditionally been based to a large extent on risk classification. In certain regulations, however, we can find restrictions on these differentiations, primarily the ban on those considered to be "discriminatory". In paper, following the European Union Directive, the European Court of Justice concluded that any gender-based discrimination was prohibited, meaning that gender equality in the European Union had to be ensured. Another restriction was imposed by EU and national competition regulation on the exchange of information considered as anti-competitive behavior. This paper aims to contribute to the recent policy debate in the EU, evaluating the negative economic consequences of these regulatory restrictions in terms of market efficiency.

KEYWORDS: risk classification; asymmetric information; discrimination; adverse selection

1.0 INTRODUCTION

Given that the insurance market is characterized by asymmetric information, its efficiency has traditionally been based on risk classification, which can be seen as a virtuous process designed to achieve the narrowest possible definition of a risk pool. However, in reality, insurance market regulations often impose restrictions, and in this paper we analyze two of them. First of all, in some cases, the use of classification variables, and gender is a recent example, has been considered "discriminatory" and has thereby been banned. Second, the exchange of information between insurance companies, useful for obtaining data about the risk characteristics of the insured, has been recognized to be anticompetitive behavior. This kind of regulatory restriction has given rise to a debate about how the advantages derived from risk classification efficiency justify special treatment of the insurance market. With respect to the contribution of Dionne and Rothschild, who present a canonical insurance market screening model providing a rigorous analysis of the economic consequences of risk classification bans, the present paper contributes to this debate by trying to link the results of the formal economic literature with recent developments in regulatory policies [1-11].

2.0 LITERATURE REVIEW

In determining the premium to be charged for insurance coverage, insurance companies must estimate the expected losses for the individual being insured. Accordingly, the target of a risk classification system is to ensure that individuals are grouped in such a way that those with a similar possibility of loss are charged the same rate. For efficient risk classification, it is crucial to segregate uncorrelated risks as much as possible into separate, narrowly-defined risk pools in order to control adverse selection. In fact, adverse selection, described above as the tendency of those with relatively greater risk exposure to seek insurance protection, can be efficiently controlled if an insurer efficiently collects in a risk pool individual with a narrow range of risk exposure so the insurance remains financially attractive to each member of the pool. Otherwise, if the disparity between the premium and the risks added by low-risk members becomes too substantial, low-risk members may drop out of the pool [1-19].

Accurate differentiation basically aims at reducing the average risk faced by the insurance company through reducing the range of risk within the pool. Finding efficient risk pools is therefore essential. In defining whether a risk classification is efficient, we take into account variable characteristics like

homogeneity, separation, reliability, causality and incentive worth. Homogeneity means that since all members of a category pay constant rates, their risk of loss should be very similar. The separation measures the categories' mean expected losses, which ought to be sufficiently different in terms of loss expectation to warrant their identification as a separate class. Reliability measures how much simple and evident differences are utilized to classify the insured in an accurate way. Causality measures whether category distinctions are supported by characteristics associated with loss. Incentive worth means that a good category system ought to classify the characteristics inside the insured's control so as to produce the inducement to adopt low-risk characteristics [17-26].

From a market perspective, the division of the insured into separate risk pools according to the specific exposure to risk allows insurers to charge premiums as close as possible to the insured's expected loss. As a result, this also attracts the relatively low-risk customers who otherwise would not buy insurance which they find too expensive. Ultimately, this virtuous process increases the availability of insurance for the whole of society. At the insurance market level, there are different premiums for identical coverage. This is attributable to the insurance industry practice of placing policyholders into groups which supposedly have a similar probability of loss: individuals in each group are then charged a similar premium. The distinctions of the risk classification system are clearly supported by statistical data showing differences in the rate of accident of the different groups [27-35].

Risk diversification, however, is costly for the company: on the one hand, the greater the risk that must be diversified, the costlier the diversification of investments becomes; on the other hand, the higher the average risk within a risk pool, the higher the cost of the insurance of such risks, and thus the higher the premiums that members of the pool have to pay. The inclusion of certain variables may be costly for each company that decides to use a certain kind of risk classification on the basis of the force of market competition. However, competition between insurers induces a tendency for more risk classification with the effect that some customers pay less for insurance, but some pay more, and some may be excluded from insurance altogether. From a public policy perspective, the reduced cost of insurance for some customers is offset by the increased cost for others; the classification process itself has costs, and the exclusion of some customers could give rise to problems from a welfare perspective. From the point of view of the insurance company, a rate of distinction is not unfair if it is actuarially accurate and economically convenient. However, differences in premiums paid by individuals for identical coverage are based on classifications and any risk classification scheme discriminates; the issue turns on the "social acceptability" of the discrimination. The critical point of discrimination based on gender is analyzed in the following paragraph in the light of a European Union regulation [36-41].

3.0 RESEARCH METHODOLOGY

Risk classification is also connected with the competitive structure of the market. On the one hand, competition can be seen as a virtuous process for achieving the narrowest possible definition of a risk pool. On the other hand, specific customer classification is utilized as a methodology of segmentation of the market based on the individualization of new risks. In this sense, insurance risk segmentation is a competitive tool with regard to other insurance companies. In practice, insurance companies try to lure customers from competitors by offering membership of a pool whose premium is closer to the insured's expected loss because of the more discrete definition of the pool. In essence, the insurers are competing over the relatively low-risk insured of any risk pool, who are likely to select those insurers most able to price the risk the insured brings to the pool. Competition therefore gives insurers the incentive to commit resources to the acquisition of costly information necessary for the constant improvement of risk classification, in order to be able to define narrower risk pools. In reality, given the difficulties of insurance companies in obtaining data on the insured's characteristics and behavior, information exchange can be seen as a useful instrument that allows insurance companies to improve their own information about their contractual counterparts. As explained above, in relation to the application of remedies to asymmetric information problems, at the screening stage insurance companies need information about insured individuals' risk profiles. After the policy is signed, insurers need information about customers' behavior to monitor the actions taken by the insured individuals. Consequently, the exchange of data about customers' risk characteristics can improve the quality of the contracts supplied. As noted by project, the exchange of information in the banking market, though the same can be said of the insurance market, reduces the lock-in effects when customers deal with banks or insurance companies that they have used before. Although this is a disadvantage for the firm ex post,

it constitutes an advantage ex ante in initial contracting, avoiding the problem associated with reduced market penetration owed to asymmetric information. In this context, more information can induce greater competition. This suggests that possible benefits can be derived from information exchange in the insurance market. However, exchange of information behavior can be considered an anti-competitive practice because of its mere potentiality for giving rise to collusion.3 In other words, information exchange behavior can be included in the facilitating practices, defined as practices which try to limit the influence of factors that destabilize cooperative outcomes and to enhance the support for cooperative outcomes. Therefore, even if information-sharing in itself is not detrimental to welfare or a restriction on competition, the antitrust authorities may concentrate on detecting specific information exchanges that serve to sustain explicit and tacit collusion. Therefore, exchange of information behavior is regarded as a facilitating practice in cases where the competition authority cannot directly combat collusion on price. This situation is quite common for two reasons. First, collusion is notoriously difficult to prove in court because of the scarcity or lack of statistical evidence that goes with collusive agreements. Second, in many cases, there are no explicit collusive agreements in a legal sense, but only forms of tacit collusion. In terms of market functioning, information exchange behavior, because of the effect it has by distorting competition, would normally be regulated.

4.0 RESULT

In 2004, the Council of the European Union adopted a Directive implementing the principle of equal treatment of men and women in terms of access to and supply of goods and services, including insurance, the so-called "Gender Directive".This Directive is one of the first acts that reflect the general tendency to impose legal restrictions on insurance differentiation by banning methods considered to be "discriminatory".Putting into effect the principle of equal treatment of individuals is a response to the observation that insurance consumers cannot have different policies on the basis of factors such as gender or age. However, this clearly affects the contractual freedom of enterprise, as outlined by Thiery and Van Schoubroeck [14]. The content of the Directive has been widely debated in the EU Member States, particularly in relation to the impact on the insurance market because of the prohibition on using gender as a risk classification variable.In fact, after the firm resistance of the insurance industry to the EU Commission's earlier proposal, the European Council allowed insurers to diverge from the principle of equal treatment of men and women as long as they could prove that gender was a decisive factor in assessing risk. The EU Commission was ordered to monitor the implementation of this exemption and to review the situation after a five-year period (in 2008). From this point on, insurers would have to keep on proving statistically that they were not discriminating on grounds of gender. In its last version, Directive 2004/113/EC, imposed, in theory, "unisex" premiums, but an exception is included in Article 5(2), allowing Member States, even after 2008, to vary treatment of women and men, based on actuarial data and reliable statistics which are updated regularly and available to the public.

However, in 2011, the Court of Justice ruled that a limitless derogation from the principle of equal treatment of men and women within the field of insurance, contained in Directive 2004/113/EC, was unlawful. The occasion was a decision1 in which the Association Belge des Consommateurs (Test-Achats) Mr van Vugt and Mr Basselier considered that the Belgian Law of 21 December 2007, implementing the derogation offered by Article 5(2) of Directive 2004/113/EC, to be contrary to the principle of equality of individuals. In this judgment, the Court of Justice initially pointed out that the validity of Article 5(2) of that Directive should be assessed within Articles 21 and 23 of the Charter of Fundamental Rights of the EU, to which Directive 2004/113/EC expressly refers. These Articles prohibit any discrimination on grounds of sex and expect general assurance of equality of men and women. The Court dismissed the argument that the derogation introduced by Article 5(2) does not conflict with the principle of equality between men and women as they are in objectively different situations with respect to premiums and benefits in view of the insured risk. In fact, according to the Court, Directive 2004/113/EC is based on situations where the two sexes are comparable in this respect.The EC Court of Justice ruled that the use of gender as a risk factor by insurers should not result in individual differences in premiums and benefits based on gender, and that the derogation contained in Article 5(2) of the "Gender Directive", which permitted this practice, should cease to have effect from 21 December 2012. Many critics were disappointed with the judgment, because they expected it to have a largely negative impact on consumers. Particularly, in the insurance sector, as individuals should not be treated unfairly because of their gender, the financial services providers

should be allowed to make sensible decisions based on sound analysis of relevant risk factors.

5.0 DISCUSSION

In 1968, the Commission stated that, as far as information exchange behavior is concerned, it is difficult to distinguish between information that has no effect on competition and information that has an anti-competitive effect. However, this does not mean that Article 101 Treaty on the Functioning of the European Union (TFEU) is not applicable. In fact, information exchange, especially in an oligopolistic market, is a way of disclosing to competitors the conduct that the firms themselves have decided to adopt in the market, and this motivation was considered in the many decisions of national antitrust authorities against this practice by insurance companies. Ten years later, in 1978, the Commission clarified its approach towards information exchange. First, the definition of anti-competitive behavior has to be made on a case-by-case basis by examining the features of each agreement. Second, the configuration of the market as an oligopoly plays a crucial role because, in this kind of market, information exchange increases transparency and reduces competition. Third, the nature of the data is important. Information exchange of statistical data, such as information on the production and demand in an industry, is not relevant. The exchange has to concern the individual company's data, such as information on prices, sales conditions, sales and output.

Application of EU competition policy to the insurance sector started at the end of the 1980s, when the European Commission began seriously confronting anti-competitive arrangements between insurance undertakings. So far, the Commission has mainly had to deal with agreements between insurers. It has, therefore, mainly been required to apply Article 101(1) TFEU, which prohibits agreements between undertakings restricting competition in a substantial part of the Common Market. Any agreements between insurers on commercial premiums belong to the category of price-fixing agreements, which are always contrary to Article 101(1) TFEU and cannot be exempted.The Commission has also recognized that certain characteristics of the insurance sector require a degree of cooperation between insurers. Article 101(3) TFEU grants exemptions to agreements that would otherwise be prohibited when they improve the economic conditions of a particular sector and provide benefits to consumers. Most of the Commission's work in relation to the application of competition rules to the insurance sector has been devoted to the definition of the types of agreements that could benefit from this exemption.

In 1992, the Commission adopted a block exemption regulation in the insurance field for certain categories of agreements, decisions and concerted practices in the insurance sector. This Commission Regulation exempts certain agreements within the insurance industry from cartel prohibition on the basis of some peculiarities of the insurance industry. In any event, the exchange of data in order to elaborate common statistics will only be exempted if one additional condition is fulfilled: insurers exchanging data should not be obliged to use the statistics obtained for the calculation of their premiums. In relation to this condition, common statistics should always indicate that they are purely illustrative. In conclusion, the Commission Regulation made it clear that an exchange of data that is more detailed than necessary for the calculation of net premiums would not be allowed. In addition, any exchange of information aggregated in such a way that it becomes meaningless from a statistical point of view and attempts only to harmonize prices between insurers would also not be covered by the exemption provided. The European Commission is in the process of reviewing Commission Regulation 358/2003 on the application of Article 81(3) of the Treaty to certain categories of agreements, decisions and concerted practices in the insurance sector. The preliminary assessment of the Commission is that the block should be extended in relation to some of the practices currently covered and terminated in relation to others. The Commission will also take into account the need of insurance companies for information to build an efficient risk classification system. However, we do not know how much this will affect the final decision in terms of exemption for the insurance market.

6.0 CONCLUSION

Given the asymmetric information issue, insurance market efficiency depends substantially on

information that insurers can gather on the risk that they are covering. These factors help to determine the premium that must be set for different risk categories, in order to allow fully for the likelihood of a claim and the cost of that claim. The more information that an insurer can gather, the more accurately a policy can be priced. There are many good economic reasons for classifying insurance risks according to their type and the most relevant one is that it increases the efficiency of contracting in terms of adverse selection and moral hazard. Consequently, the benefits to society are less total damage and a lower average price of policies. The multiple benefits of risk classification are, however, conditional on general principles, such as the non-discrimination principle, and the market structure. Moreover, regulations cannot provide exemptions that determine special treatment for the insurance market, which very frequently takes the shape of an oligopoly, and where in many countries the antitrust authorities have already detected collusive behaviors. Our final concern is that insurance market regulation needs to be addressed to stimulate competition between insurance companies, because this will determine the search, in business terms, for different variables of classification, such as experience-based ones, which will be very useful for an efficient market, without implying any discrimination or the need to share information among competitors.

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