LESS DISCRIMINATION, MORE GENDER INEQUALITY: THE CASE OF THE ITALIAN MOTOR-VEHICLE INSURANCE

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Abstract

Given that the fairness of the mandatory motor-vehicle insurance system is relevant on a social point of view, the focus of this article is on the effects in the insurance market of the ban in gender discrimination determined by the European Court of Justice decision “Test-Achats” (C-236/09, 1 March 2011). We analyze, on the legal point of view, the relevance of the concept of equal treatment affirmed in the so called “gender Directive” (2004/113/EC) and, on the economic point of view, the efficiency effects of the use of risk classification by the insurance companies. Then using data of the Italian motor-vehicle insurance sector, we measure the influence on the premiums of the gender variable, among others such as age, type of vehicle, geolocation, for the period 2011-2014. The finding is that, after the ban in the use of gender as a discriminatory variable, the price of the insurance for male and female shows a higher difference. So finally we discuss these results in terms of a kind of inequality effect in the market, that may determine unfair consequences on the society.

Key-words: discrimination; gender; insurance market; risk classification

1. Introduction

In the actual mandatory motor-vehicle insurance system, “policies are not merely contracts but also are designed to perform particular risk management, deterrence, and compensation functions important to economic and social ordering” (Stempel, 2010, p. 1489). Recognizing this fact implies a particular attention on the way the insurance companies supply their policies, particularly in terms of the discrimination practice to determine the price. When setting prices for insurance products, insurers take into account several factors to make their prices reflecting the customers’ risks. Gender is one of such factors, and has long been used by European insurers in pricing insurance products, especially in motor-vehicle and pension funds
sectors where they consider that the risks covered depends significantly on the insureds’ gender. However, the European Court of Justice decision “Test-Achats” (C-236/09, 1 March 2011) has ruled that the companies of the European Union are prohibited from using gender as an insurance-rating variable.

Despite this regulatory ban, the use of gender in insurance pricing remains subject to debate, and claims of unfair or unequal treatment between men and women in insurance provision continue to be advanced against insurance companies.

As a source of debate, some may consider the use of gender differentials in insurance pricing to be unacceptable per se, even if it can be justified by objective evidence and is “fair” from an actuarial perspective (Thiery and Van Schouroeck, 2006). This is because it appears to be unfair to set insurance premiums on the basis of factors over which an individual has no control, as in the case of gender, and the same could be said, for example, for age (Kelly and Nielson, 2006).

Moreover, from the use of factors based on particular characteristics, such as race or religion or gender, it comes that the word “discrimination” has taken a negative connotation, and such discrimination is often deemed immoral or illegal or both. Much has been written on the question of what distinguishes good discrimination from bad, not only with reference to insurance but also to other fields such as employment discrimination.

Over the years, the Court of Justice has introduced the concepts of direct and indirect discrimination (Tobler, 2005) where the first refers to treating one person less favorably than another on certain specified grounds, inter alia sex, and the second occurs when the effect of certain, prima facie neutral, requirements, conditions or practices has a disproportionately adverse impact on a specific group. The concept of indirect discrimination contains elements of substantive equality as it recognizes the existence of social and material differences between people. In doing so it seeks to promote equality de facto as opposed to equality in form.

However, on an economic point of view, an elimination of the use of a relevant rating factor such as gender cannot be achieved without effects on the market and, of course, these effects are most significant where the factor is highly correlated with risk. Practically, the removal of gender as a rating factor leading to unisex prices may result in the lower-risk gender experiencing increases in premiums in order to cross-subsidize the higher-risk gender (Hoy, 1982).

This means that an analysis of the effects of banning the use of gender as a rating factor cannot be done only on the grounds of fairness, but would need to weigh the benefits against the efficiency costs.

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2. There is a large literature also on the specific question whether discrimination of particular types, such as racial discrimination in the workplace, is efficient or not. See: Becker (1971); Posner (1989); Alexander (1992).
resulting from a restriction on risk-based pricing, as well as against the wider distributional impacts and other aspects of fairness that may be compromised (Abraham, 1985).

In this direction the aim of this paper is to measure, in the case of Italian motor-vehicle compulsory insurance, the effects on the level of premiums of the ban determined by “Test-Achats”.

More in details, we would like to contribute to a better comprehension of the fact that a ban on the use of gender as a risk-rating factor does not necessarily deliver equal insurance prices on a gender point of view. Moreover, if there are any other factors in the insurance pricing models that are correlated with gender (including those that are valid risk-rating factors in their own right, such as, age, type of vehicle and geographical location), these will also pick up the correlated gender-related risk in the resulting insurance prices.

In this perspective the aspects of this study are: to describe the legal and economic aspects related to discrimination; to analyze the data before and after the ban for the period between 2011 and 2014; and to measure the influence of the gender variable on the premiums.

The paper is organized as follows: Section 2 provides the legal background and a focus on the equal treatment principle. Section 3 is devoted to explain the economic approach adopted in the study. Section 4 presents the empirical evidences and related discussion while Section 5 concludes.

2. **The legal background: the principle of “equal treatment”**

As a starting point, at a European level, the Council Directive of 13 December 2004 (2004/113/EC), better known as the “Gender Directive”, provided for equal treatment between men and women in the access and supply of goods and services. Particularly, article 5(1), implementing the principle of equal treatment between men and women in the access to and supply of goods and services, proclaimed a general ban of the use of sex as an actuarial factor in the calculation of premiums and benefits for the purposes of insurance and related financial services.

This Directive is one of the first acts that reflect the general tendency to impose legal restrictions on price differentiation by prohibiting methods considered to be “discriminatory”. Putting into effect the principle of equal treatment of individuals is a response to the observation that consumers cannot be charged different prices on the basis of factors such as gender.

While considering the use of gender in the calculation of prices, the Directive contained one exemption: under Article 5(2), Member States can allow “proportionate differences in insurance premiums and benefits where the use of gender is a determining factor in the assessment of risk based on the relevant and accurate actuarial and statistical data, provided that Member States ensure that
such data is compiled, published and regularly updated”.

As a matter of fact, most EU Member States implemented this opt-out clause allowing insurers to use gender as a risk-rating factor and to differentiate by gender when pricing insurance policies, subject to meeting the requirement for objective justification.

In fact, after the resistance of the insurance industry to the EU Commission’s earlier proposal, the European Council in 2008 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. Precisely, art. 15 stated that “Actuarial and risk factors related to disability and to age are used in the provision of insurance, banking and other financial services. These should not be regarded as constituting discrimination where the factors are shown to be key factors for the assessment of risk”.

But, the European Court of Justice definitively took a decision that determined the end of the discretion by Member States: on 1 March 2011, in “Test-Achats”, the Court declared that this derogation would cease to be effective on 21 December 2012.

In this decision, 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 the “Gender Directive”, to be contrary to the principle of equality of individuals. And the Court of Justice 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 expressly refers. These Articles prohibit any discrimination on grounds of sex and expect general effects 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, the “Gender Directive” is based on situations where the two sexes are comparable in this respect.

In order to assist Member States with the implementation of the Test-Achats ruling at national level, the European Commission issued a Communication on 22 December 2011. In this Communication, it has been recognized that this ruling would have implications in all Member States, given that they still allow gender differentiation. On 6 February 2014, EIOPA (the European Insurance and Occupational Pensions Authority) issued a Report on the implementation of the Test-Achats ruling into national legislation, according to which in December 2013 it had already been implemented in 25 out of the current 28 Member States.

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1. In this case the implementation of measures aimed at complying with the unisex rule at national level could at best be deferred by Member States for a period of up to two years as from 21 December 2007, the date of entry into force of the EU Gender Directive.

Differently to the European case, in USA, no such general ban on sex discrimination is yet to be found (Avraham, Logue, Schwarcz, 2013), despite the fact that much debating took place on the fairness in contrast with the efficiency of the use of gender as a risk variable in the 1970s and 1980s in the literature over important judgments of the Supreme Court.

As a consequence of the Test-Achats decision, the European insurers cannot any more differentiate premiums on the base of gender. Many critics were disappointed with the judgment, because they expected it to have a largely negative impact on consumers, particularly, in the insurance sector where companies are not any more allowed to make decisions based on sound analysis of a relevant risk factor that may contribute to an efficient classification of the insureds (Sass and Seifried, 2014).

On this point, in the next paragraph, we are going to analyze the meaning of discrimination as a tools of risk classification on an economic efficiency point of view.

3. The economic approach: the efficiency of risk classification

The consequences of the implementation of the principle of “equal treatment” after the Test-Achats decision have been widely debated in the EU Member States, particularly in relation to the impact on the insurance market functioning for the elimination of the use of gender as a risk classification variable. On the supply side, risk classification is the basic device for reducing the problems connected with asymmetric information, and particularly adverse selection.

Adverse selection (hidden information) refers to the inability of insurers to observe risk characteristics of their customers, leading to offer contracts based on the average risk of the entire group of customers. In this case, more high-risk individuals purchase insurance; higher payouts by insurance companies force them to raise rates which, in turn, makes the insurance less attractive to low-risk individuals. As a consequence, this may reduce the stability of the market equilibrium, and the market may completely break down, such as the famous “market for lemons” (Akerlof, 1970).

Theoretically in determining the premium to be charged, insurers should estimate the expected losses

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1 This principle was first spelled out in the USA in the case of Manhart where the Court ruled that the legislation considers it unlawful to discriminate “against any individual with respect to his compensation, terms, conditions, or privileges of employment because of such individual’s race, colour, religion, sex or national origin” (City of Los Angeles Department of Water and Power v Manhart 435 US 702-1978). Another important decision was; Arizona Governing Committee for Tax Deferred Annuity and Deferred Compensation Plans v Norris 463 US 1073, 103 S Ct. 3492-1983. For a discussion on these two decisions, see: Caracciolo di Torella (2013).

2 The economic literature mainly uses the terms “discrimination” and “risk classification” synonymously throughout this article when referring to insurers’ efforts to sort insureds into different groups based on differences in risks.
for each individual being insured. But in practice, given the informational asymmetry, the insurance companies apply risk classification trying to group the individuals in such a way that those with a similar loss probability are charged the same rate. The risk classification systems are clearly supported by statistical data showing differences in the event rate in alternative groups.

Insurers employ variable, such as gender and age, to narrow risk pools and the distinction among insureds increases the availability of insurance because it makes the policies more attractive to relatively low-risk individuals. This fact is attributable to the insurance industry practice of placing policyholders into groups who supposedly have a similar probability of loss: individuals within each group are then charged a similar premium.

In fact, adverse selection, as the tendency of persons with relatively greater exposure to risk to seek insurance protection, can be efficiently controlled if the insurance company is successful in collecting into a risk pool individuals with a narrow range of exposure to risk for the insurance; 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.

So generally, by identifying independent risks and aggregating them into a risk pool, the insurer increases predictive accuracy by exploiting the law of large numbers.

The distinctions utilized in the risk classification system are clearly supported by statistical data showing differences in probability of the different groups. So, in the reality, differences in premiums paid by individuals for identical coverage are based on discriminatory classifications that are based on different variables (Porrini, 2015).

Definition of risk pools is, therefore, essential to the insurance market functioning. Accurate risk-pooling, in fact, basically aims at reducing average risk faced by the insurer through reducing the range of risk within the pool. Distinction of insureds 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, thus attracting also the relatively low-risk customers that would otherwise drop out insurance, found to be too expensive. At the end of the day, this virtuous process is increasing the availability of insurance to the whole society (Porrini, 2016).

So, the prohibition in using a variable, such as gender, decreasing the possibility of classifying insurance risks may reduce the efficiency of contracting in terms of asymmetric information. Thus, insurers are compelled to “discriminate” at a lower level among individuals and cannot charge different premiums to different groups of insureds based on differences in their risks level.

And we can also have other negative effects.

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Crocker and Snow (1986) consider the efficiency effects of risk classification and establish that costless imperfect categorization always enhances efficiency.
A practical consequence is that the level of premiums will likely to be subjected to the addition of a so-called “uncertainty premium” to the tariffs charged because insurers will resort to more complex direct and indirect factors, which might be more intrusive on individual’s personal sphere and more costly.

Moreover, we may have changes in consumer demand: the lower-risk gender may purchase less insurance cover (because of the increase in price), and/or the higher-risk gender may purchase more (because, for them, the price has dropped). The average risk in the market could therefore rise, and overall insurance coverage levels could fall. This process would require average prices to increase further to cover the higher cost of provision for the remaining group of insured individuals.

But in practice, this last effect does not exist in case of compulsory insurance, such as the motor-vehicle one, because in this case unisex pricing is unlikely to trigger such significant market negative effects. Nonetheless, some demand adjustments can be expected: for example, given the change in premiums individuals may delay the purchase of a car, or on the opposite may be induced to buy larger and more powerful cars than they otherwise would.

In the next paragraph we propose an empirical analysis of the effects of the ban in gender discrimination in the Italian motor-vehicle insurance sector.

4. **Empirical evidence in the case of Italian motor-vehicle insurance sector**

In this section we estimate the effects of the ban in terms of efficiency of the insurance market in the case of Italian motor-vehicle insurance.

We drawn the data from the National Institute for the Supervision of Insurance (IVASS) that is an independent administrative authority, introduced with the Decree Law 6 July 2012 n. 95, converted into law 7 August 2012 n. 135, replacing the previous Institute called ISVAP.

The IVASS dataset contains data about insurance classes, gross premiums, premiums from direct and indirect business also collected abroad, trends in motor insurance and in other lines of business, disputes regarding motor liability insurance. For our analysis we extrapolated the motor-vehicle sector data for the period from October 2011 to January 2014, the data have a quarterly frequency, for a total of 10 quarter for each Italian Province.

IVASS identifies sample profiles on the basis of the criteria useful for the fulfillment assigned to the Authority by art. 136 of the Insurance Code to address the analysis of motor-vehicle insurance prices for particular categories of insured, geographical areas, and the “bonus-malus” system, the latter to

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Dionne and Rothschild (2014) used a canonical insurance market screening model to provide a unified framework for analyzing the economic consequences of legalised vs banned risk classification.
track over time the trend of the discounts characterizing the different geographical areas. In particular, we consider the following variables:

*Price* variable that refers to the amount paid as an insurance premium by male and female measured in thousands of euros;

*Accident* that represents the number of accidents in the six months prior to the survey;

*Gender* that is a dummy variable with value 0 or 1, where 0 indicates male gender and 1 female gender;

*Geolocation* that is a dummy variable assuming value 0 and 1, where 0 indicates the geographical location in Southern Italy and in the islands (Sicily and Sardinia) and 1 indicates the geographical location in Northern Italy.

*Vehicle* that is a dummy variable referring to the type of vehicle, where 0 indicates the case of a car with 1300 cc and 1 the case of a moped with 200 cc or a motorcycle with 50 cc.

*Age* that is a dummy variable, where 0 indicates that the driving person is 18 years old, and 1 indicates that who is driving is at least 40 years.

*Change* that is a temporal dummy variable representing the period considered, where 0 indicates that the observation is occurred before the entry into force of the ban and 1 otherwise.

The following Table 1 summarizes the statistics of the variables

<table>
<thead>
<tr>
<th>Dataset</th>
<th>Number of province</th>
<th>Variables</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>IVASS</td>
<td>21</td>
<td>PRICE</td>
<td>1.066</td>
<td>998,810</td>
<td>15</td>
<td>4.007</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ACCIDENT</td>
<td>293</td>
<td>422,334</td>
<td>5</td>
<td>2.907</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AGE</td>
<td>1</td>
<td>0,500</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GENDER</td>
<td>1</td>
<td>0,500</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GEOLOCATION</td>
<td>1</td>
<td>0,4872</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VEHICLE</td>
<td>1</td>
<td>0,500</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CHANGE</td>
<td>1</td>
<td>0,500</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

The estimation has been made for the 21 Italian provinces in which reliable data exist in relation to the Male Price, Male Accident, Female Price, Female Accident, Age, Vehicle. We analyze the panel data for the period from 2011 to 2014 that is the only time period for which all the variables are present in the IVASS database.

Using a panel data analysis, four regressions have been conducted to verify the robustness of

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1. In Schwarze and Wein (2005) the empirical effect of risk classification has been estimated in the Germany motor-vehicle compulsory insurance.
2. The database contains only the data relating to the 21 provinces suitable to analyze the time trend and the price differentiation between the various areas.
empirical results. The four regressions are the following:
the first regression shows the effects of gender discrimination on the price before the ban;
the second regression shows the effects of gender discrimination on the price after the ban;
the third regression shows the effects of gender discrimination on the price from 2011 to 2014;
the fourth regression shows the effects of gender discrimination on the price from 2011 to 2014, but
with an additional dummy variable, the Change variable, introduced to verify the significance of the
introduction of the ban.
The dependent variable Price for each model have been regressed on independent variables Accident
and on dummy variables i.e. Gender, Geolocation, Age, Vehicle and Change.

\[ \ln \text{Price}_{it} = \alpha + \beta \ln \text{Accident}_{it} + \beta \text{Gender}_{it} + \beta \text{Position}_{it} + \beta \text{Age}_{it} + \beta \text{Vehicle}_{it} \]

\[ \ln \text{Price}_{it} = \alpha + \beta \ln \text{Accident}_{it} + \beta \text{Gender}_{it} + \beta \text{Position}_{it} + \beta \text{Age}_{it} + \beta \text{Vehicle}_{it} \]

\[ \ln \text{Price}_{it} = \alpha + \beta \ln \text{Accident}_{it} + \beta \text{Gender}_{it} + \beta \text{Position}_{it} + \beta \text{Age}_{it} + \beta \text{Vehicle}_{it} \]

\[ \ln \text{Price}_{it} = \alpha + \beta \ln \text{Accident}_{it} + \beta \text{Gender}_{it} + \beta \text{Position}_{it} + \beta \text{Age}_{it} + \beta \text{Vehicle}_{it} + \beta \text{Change}_{it} \]

The Table 2 shows the results of the four different regressions with the impact of the variables
analyzed on the dependent variable Price.

<table>
<thead>
<tr>
<th>Regressor</th>
<th>Ln Price (1)</th>
<th>Ln Price (2)</th>
<th>Ln Price (3)</th>
<th>Ln Price (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ln Accident</td>
<td>0.1731***</td>
<td>0.1502***</td>
<td>0.1621***</td>
<td>0.1622***</td>
</tr>
<tr>
<td></td>
<td>(0.0116)</td>
<td>(0.0152)</td>
<td>(0.0036)</td>
<td>(0.0037)</td>
</tr>
<tr>
<td>Gender</td>
<td>0.0747365***</td>
<td>0.199021***</td>
<td>0.136634***</td>
<td>0.136737***</td>
</tr>
<tr>
<td></td>
<td>(0.0268947)</td>
<td>(0.0354538)</td>
<td>(0.0168738)</td>
<td>(0.0167945)</td>
</tr>
<tr>
<td>Position</td>
<td>-0.390530***</td>
<td>-0.374327***</td>
<td>-0.382118***</td>
<td>-0.382182***</td>
</tr>
<tr>
<td></td>
<td>(0.0265301)</td>
<td>(0.0347642)</td>
<td>(0.00800568)</td>
<td>(0.00802427)</td>
</tr>
<tr>
<td>Age</td>
<td>-1.05948***</td>
<td>-1.00999***</td>
<td>-1.03451***</td>
<td>-1.03453***</td>
</tr>
<tr>
<td></td>
<td>(0.0252200)</td>
<td>(0.0330462)</td>
<td>(0.00742123)</td>
<td>(0.00744598)</td>
</tr>
<tr>
<td>Vehicle</td>
<td>-1.01677***</td>
<td>-1.04218***</td>
<td>-1.02979***</td>
<td>-1.02980***</td>
</tr>
<tr>
<td></td>
<td>(0.0251114)</td>
<td>(0.0329536)</td>
<td>(0.00615764)</td>
<td>(0.00615593)</td>
</tr>
<tr>
<td>Change</td>
<td>0.00789257</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.00705567)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The model (1) evaluates the impact of independent variables on dependent variable *Price* before the ban, that corresponds to the period of time when there was still the use of the risk variable distinguishing between men and women. The second model (2) shows the effect of independent variables on dependent variable *Price* after the ban, that corresponds to the period of time when the prices of men and women results equal. The model (3) evaluates the impact on the dependent variable for the entire period, before and after the ban. Also the last model (4) shows the impact on the dependent variable for the entire period but with the addition of the variable denominated *Change* which measures the impact of the ban on the *Price* variable.

The columns labeled (1), (2), (3) and (4), included in Table 2, report the results of the four-separate OLS regressions. The values in the Table are the coefficients, standard errors (in parentheses), their p-values, and summary statistics, as indicated by the description in each row.

The results of the first regression analysis show how all the variables taken into consideration are significant, which is expressed by the *p*-value that for each variable is equal to (< 0.001).

The first variable is *Accident*, as the number of accidents increased by 1%, our dependent variable recorded an increase of 0.17%. The second variable is a dummy variable *Gender* and the result of the analysis demonstrates that the price paid by women is bigger than the one paid by male before the ban for a variation equal to 7%. For the third variable, *Geolocation*, the result of the analysis indicates that the insureds individuals localized in the Southern Italy paid a price higher than the insureds located in the Northern Italy. Furthermore, the analysis shows a close relation between *Price* and *Age*, demonstrating that the individuals under 40 years pay a lower price than the ones with at least 40 years. The last variable considered in the analysis is *Vehicle* and its significance demonstrates that ensuring a car with 1300 cc is more expensive that ensuring a moped with 200 cc or a motorcycle with 50 cc.

Focusing on the summary statistics of regression (1), it is possible to notice that the adjusted R² assumes a value equal to 0.813733, quantifying the extent to which the explanatory variables explain the variation in the dependent variable.

The first (1) and second (2) regression analyze two different time periods: in the post-ban period (2), in relation to column (1), the variables *Ln Accident, Geolocation, Age, Vehicle* have similar results. It is important to emphasize the different impact of the *Gender* variable, because after the ban the inequality between male and female increases. In fact, the result of the analysis demonstrates that the price paid by women is bigger than the one paid by men for a variation equal to 19% in relation to
the variation before the ban that was equal to 7%. In this case $R^2$ assumes a value equal to 0.709634. The third Model (3) measures the effect produced on the dependent variable by the independent variable for the period from 2011 to 2014. The results of the analysis show how all the variables taken into consideration are significant, given the $p$-value that for each variable is equal to ($< 0.001$). The independent variable has a similar impact in the models (1) and (2), and the only variable that presents a different impact is *Gender*. So, the results of the analysis demonstrate that for the total period considered the price paid by women is bigger than the price paid by men for 13%. Focusing on the summary statistics of regression (3), it is possible to notice that the adjusted $R^2$ assumes a value equal to 0.756987, quantifying the extent to which the explanatory variables explain the variation in the dependent variable.

The model (4) considers the same period of model (3) but in the analysis the additional dummy variable *Change* is introduced with the goal to measure the impact caused by the ban on the dependent variable *Price*. The relationship between the variable *Change* and the dependent variable is not significant, not even if the observation was carried out before or after the ban; the other variables confirm the trend of the third regression (3). From the results obtained, we can say that in the pre-ban period the price paid by women is 7.5% more that the one paid by men.

As an example, in the case of two insured individuals of different sex, but with the same type of vehicle, province of residence, and age, for every 1000 euros paid for the premium the difference is equal to 75 euros. The situation changes in the post-ban period: the data analysis shows that, with the same conditions, every 1000 euros paid for the premium a woman pays 200 euros more than male counterpart, with an increase of 125 euros compared to the previous period.

We can conclude that the effect of the gender discrimination ban is that women are not any more directly discriminated by gender (that is not any more a risky variable used by the insurance companies) since, after the ban, the premium is the same for male and female, but there is less gender equality because in the same conditions a woman pays more than a man, given the effects of other risky variables. In this sense the introduction of the ban emphasized the gender inequality.

5. **Conclusions**

In this article, we have analyzed the effects on the Italian insurance market of the ban in gender discrimination due to the European Court of Justice decision “Test-Achats”.

Using data of the Italian motor-vehicle insurance sector before and after the ban (2011-2014), we have measured the influence of the gender variable on the premiums. As a result, after the ban, the price of the insurance for male and female shows a higher difference, and consequently the market
appears to be characterized by more inequality.

Our result is that a ban in the use of gender as a risk-rating factor did not deliver equal insurance prices on a gender point of view. This is because other factors in the insurance pricing models correlated with gender (in our model: age, type of vehicle and geographical location) pick up the correlated gender-related risk in the resulting insurance prices.

Our findings reveal a discrepancy between the objective of Test Achats at bringing insurance in line with the other EU equality measures and the results in terms of a real equal treatment of men and women in the market.

From this, we could derive interpretative consequences suggesting that insurance regulation has to take into account not only the formal gender discrimination but also the particular function of the insurance in question as part of the insurance industry larger role as a social and economic instrument.

As a conclusive remark, we can say that further researches are needed to test the real effects of the ban in using gender as a risk variable to evaluate whether with prohibiting the gender discrimination the target of equality between men and women is really implemented.

References


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