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y Seguros

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FUNDACIÓN MAPFRE

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Between two decades

Every day, every year seems to speed by more quickly and the time has now come, at the end of the first decade of the third millennium, to sit back and take stock.

The new millennium loomed up under a pall of dread and doom. The Y2K bug was going to wipe out our computer-based society overnight. This spurious threat now seems risible in comparison to real catastrophes that did occur in this first decade, like 9/11 in the US or 11-M in Spain, the swine-flu panic, the devastating aftermath of hurricane Katrina and the more recent earthquakes of Haiti and Chile or the disastrous oil spill caused by the explosion of the Deepwater Horizon oil rig. The financial collapse and the consequent swathe of failing businesses have by now become a byword for our times. The recent history of this 3652-day period therefore offers up the paradox of a world that is becoming more socially and financially shaky as it becomes more globalised.

Our misplaced trust in an ostensibly fault-proof system has been one of the hardest shocks to our system in recent history. It put paid to the long twentieth-century dream of breakneck consumerism and vanity. The sackcloth and ashes years of this early twenty-first century have brought us crashing back down to earth. But necessity is always the mother of invention and we now need to rethink our strategy so far, trying to bring home the value of risk management to all organisations.

Although a progressive change in the «risk appetite» of business organisations has been appreciable for some time, the results of the 5th risk benchmarking survey of the European Federation of Risk Management (FERMA) – presented in the last four months of 2010 – shows that clients are in general reasonably satisfied with current insurance prices and trust in their insurers to help them develop their business and expand worldwide. It also reflects the respondents' desire for more support from insurers in managing new and emerging risks, especially for exposures currently considered to be «uninsurable».

Our interviewee in this issue is Belén Kortabarria, Financial Manager of Mondragon, the biggest business group in the Basque Country and the seventh biggest in the whole of Spain. She takes up this theme, seeing no restriction whatsoever in the insurance risk-transfer capacity, not even for taking on the risks of the over 100 co-operatives and over 200 productive subsidiaries abroad, with the caveat that «perhaps the most worrying risks are those we don't know about yet».

The first of the studies in this issue takes an academic slant on the future reform of road-accident compensation arrangements, mooted lower compensations for minor injuries in favour of “financing” substantial compensation increases for major injuries and hence better protection for road-accident victims overall.

The second study looks at the application of credibility theory, through two different models, to the calculation of a health insurance premium, trying to tally the premium with the known claims ratio of the insurance product concerned.

The third and last article reflects the thoughts of François Settembrino, honorary president of FERMA and member of this review's editorial board. In three words with identical initials –risk, respect and responsibility– he sums up his ideas for rethinking Risk Management.

The report drawn up by FUNDACIÓN MAPFRE presents the ranking by premium volumes of Latin America's 25 biggest insurance groups in 2009. This eighth ranking survey breaks down the figures into life, non-life and total.

The Claims Observatory, based on the earthquake of magnitude 8.8 in the Richter scale that hit Chile in February this year, presents a solution for guaranteeing continuity of the business activity after catastrophes of that scale, using Business Continuity Planning.

So the year is running to its end and, as usual, there will be some things we never got round to doing. Maybe this will stimulate us to take them on with renewed vim next decade.

Merry Christmas and a happy new year

REFLECTIONS

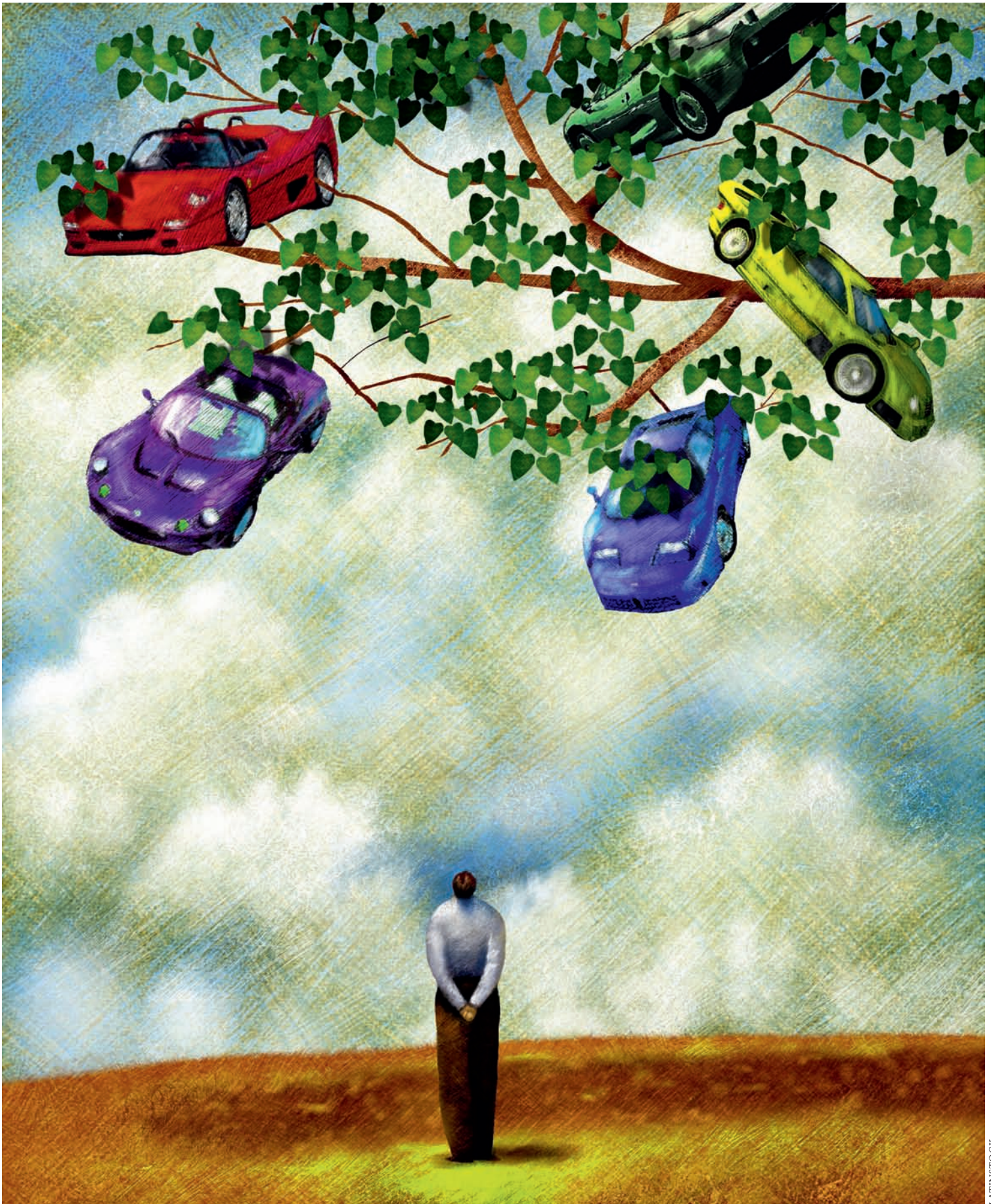
and outlook on the future

REFORM OF THE SCALE

OF INDEMNITIES

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Directive 2005/14/EC of the European Parliament and of the Council of 11th. May, 2005, relating to insurance against civil liability in respect of the use of motor vehicles (Fifth Directive), modifies certain aspects of the four previous directives with the clear purpose of reinforcing the protection of those injured in road traffic accidents, as well accelerating the payment of indemnities. In order to incorporate the aforementioned directive into our legislation, Law 21/2007 of 11th. July was approved and re-adapts the text of the Law on Legal Liability and Insurance for the Use of Motor Vehicles (*Ley sobre Responsabilidad Civil y Seguro en la Circulación de*



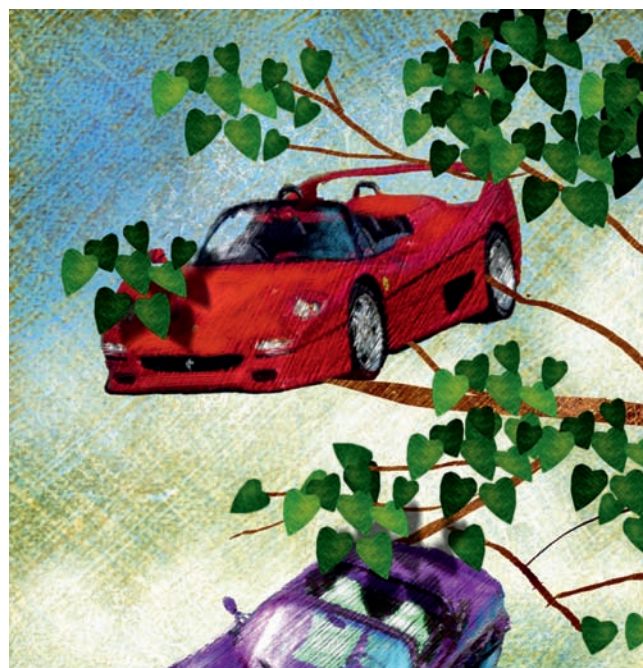
LATINSTOCK

Vehículos a Motor - hereafter LRCSCVM), approved by Royal Decree 8/2004, of 29th. October. Following the recommendations of the Fifth Directive, and in order to guarantee the effective protection of road traffic accident victims, the new law has raised the coverage limits of the obligatory insurance up to 70 million Euros per claim for of bodily injury, regardless of the number of victims. With regard to improving the processes of setting the amount of the indemnities, the new Law has incorporated two new concepts into our legal regulations: the reasoned offer / reply procedure. (Xiol, 2009)

The LRCSCVM establishes the obligatory element of motor insurance and defines it as legal liability insurance for damages arising out of traffic accidents. The insurer is obliged to indemnify third parties for damages caused by the insured whilst driving a vehicle. As a result, insurers undertake an important social role since they are responsible for compensating the victim financially for personal loss which is interpreted as loss of quality of life and any suffering created. Nevertheless, to determine what amount is a «fair» compensation that the insurer must pay to the victim of a traffic accident, as an indemnity for the bodily injury suffered, is not a simple task nor exempt from discussion amongst the experts.

In Spain, from 1995, the evaluation of the indemnity for damages suffered by the victims of traffic accidents had to be quantified in accordance with the «System for the Evaluation of Damages caused to Persons in Traffic Accidents» published in the Annex of the LRCSCVM and commonly known as the scale of indemnity. This evaluation system is articulated by means of tables which show the concepts and amounts to be awarded.

In view of the change in rules derived from the Fifth Directive, it would seem logical to reflect on the determination of the indemnity awards under the application of the Spanish scale. In effect,



although the new Law has increased the limit of the coverage for bodily injury up to 70 million Euros per claim, in most cases, there will not be a greater guaranteed protection for those injured in traffic accidents if the binding system of evaluation that determines the indemnity limits for these claims is modified. In other words, a reform of the evaluation system for personal damages caused by traffic accidents is imposed. In this regard, at the beginning of 2008, the Director of Insurances and Pension Funds considered that the updating of the scale needed maximum consensus, calm, debate and reflection, and studies on the impact that the reform can have on the insurance sector.

In response to the request of the Director of Insurances and Pension Funds and from the neutral position held by university professors, we decided to analyze the ins and outs of the evaluation of personal damages caused by traffic accidents and, in this way, provide a tool to support the necessary debate and reflections on this topic. In this task, we received the cooperation of the MAPFRE Foundation, via the Insurance Research Grants (2007 year), which led to the publication of the

work «Perspectives and Economic Analysis of the Future Reform of the Spanish System of Evaluation of Bodily Injury» (Bermúdez, Ayuso and Santolino, 2009). The content of this publication was structured in two parts. In the first part, we presented the theoretical concepts that help to understand the dynamics of how the scale works in Spain, comparing it with systems in other countries around us, as well as to get as clear as possible an idea as to the position of the system reform. In the second part of the work, we decided to respond to the need to carry out practical exercises of evaluating the economic impact in the context of different scenarios that the future reform of the scale might define.

This article, based on the work mentioned in the previous paragraph, is intended to summarise our conclusions and reflections on the way in which the scale works and its possible reform. In the following paragraph, we recall the principles and objectives that inspired the current scale and explain how it works. In the third section, we analyze the influence that the European harmonising framework could have on the reform of the scale and, after, in section 4, we reflect on the reform of the scale perspectives, bearing in mind its multidisciplinary character (legal, medical and socio-economic). Having reached the conclusion that, in order for the reform of the scale to provide guarantees, it is necessary to take into account the economic impact that the different reform proposals have on the overall claims settlement cost, in the fifth section, we carry out an economic

evaluation of its impact after defining two simple reform approaches. Finally, in the conclusions, we summarize our opinion on the reform of the evaluation system of personal injury derived from road traffic accidents.

CURRENT SCALE: MOTIVES AND OPERATION

On the above subject, we believe that, before initiating the debate on the reform of the indemnity scale, it is necessary to bear very much in mind the situation and motives that led the legislator to include a «System for the Evaluation of Damages caused to Persons in Traffic Accidents» in the Annex of Law 30/1995 on Legal Liability and Insurance for Motor Vehicles and Road Traffic. In this way we can consider the validity of the assumptions that inspired the current scale which was implemented to respond to a series of factors that arose and that we summarize in the following paragraph.



THE UPDATING OF THE SCALE NEEDED MAXIMUM CONSENSUS, CALM, DEBATE AND REFLECTION, AS WELL AS STUDIES ON THE IMPACT THAT THE REFORM CAN HAVE ON THE INSURANCE SECTOR

According to UNESPA data, for the 1991 year, the combined underwriting ratio for motor insurance was 108 per cent on earned premiums. One of the main causes for this result was the continuing tendency by judges, from the mid 80's, to increase the indemnities for personal damages (judicial inflation). This phenomenon, together with the differing criteria applied by different judges, discouraged amicable settlements between the parties. The excessive litigation led to delays in the courts in the fixing of indemnities for claims with bodily injuries, accounting for a significant difference between the amount of the indemnity paid and the amount that had been used to calculate premiums some years earlier. In other words, the reserves of insurers, calculated from the premiums earned in the year of occurrence of the accident, were insufficient to pay for the final indemnity settlements paid several years after continuous legal proceedings. Insurers were not the only parties affected by this situation: the courts of justice collapsed; traffic accident victims were compensated after long delays and with varying levels of indemnity, depending on the court assigned; and the regulator experienced serious difficulties controlling the solvency of the companies that specialised in this class of insurance.

With the approval of the scale, the legislator intended to end the situation described in the previous paragraph by providing all the parties involved in the process with mechanisms of predictability, moderation and equality in the evaluation of the monetary indemnity for damages



suffered by victims of traffic accidents. The indemnity scale is to be used for the evaluation of bodily injury (death, permanent and temporary injuries) suffered by the victim of a traffic accident. The evaluation system operates via a system of tables which include all concepts susceptible to indemnity together with the rules or criteria for the monetary evaluation of the aforementioned concepts - all this, within a contained scheme, i.e. without the possibility of operating outside the system. In order to achieve the declared goals, the legislator imposed the obligatory nature of its application by judges. Since its approval, the binding nature of the scale of indemnities has been the most argued and controversial aspect. Nevertheless, following the Constitutional Court



WITH THE APPROVAL OF THE SCALE, THE LEGISLATOR TRIED TO PROVIDE ALL THE PARTIES INVOLVED IN THE PROCESS WITH MECHANISMS OF PREDICTABILITY, MODERATION AND EQUALITY IN THE EVALUATION OF THE MONETARY INDEMNITY FOR DAMAGES SUFFERED BY VICTIMS OF TRAFFIC ACCIDENTS

judgement 181/2000 (STC 181/2000) this point has stopped being debated, at least openly.

The System for the Evaluation of Damages caused to Persons involved in Road Traffic accidents is structured in two sections plus an «appendix» (appendix to Annex of the Law). In the first section, the criteria for determining legal liability and indemnity are considered and, in the second one, the rules on the application of the system. After defining these criteria, principles and rules, the table of the scale is presented in appendix and is divided according to the type of contingency: 1) Indemnities for death (Tables I and II); 2) Indemnities for permanent injury (Tables III, IV and VI); and 3) Indemnities for temporary disability (Table V).

In summary, the evaluation method begins by fixing basic indemnities for death, permanent injuries, or for temporary injuries, and then applies corrective factors according to the concurrence of certain circumstances, basically related to the financial and family circumstances of the injured

party. For all contingencies, the design of the tables essentially contemplates two types of personal damages to be compensated for road traffic accidents: financial and non-financial damages.

The basic indemnity in case of death (Table I of the scale) is calculated according to the number of injured persons and how they are related to the victim, on the one hand, and the age of the victim on the other. The corrective factors for the basic indemnities by death appear in Table II and contemplate percentages increases on the basic indemnity depending on the financial damages that occurred (the net annual income that the victim was earning from personal work), as well as any special family circumstances.

The basic indemnities for permanent injuries are shown in Table III. In this case, the basic indemnity is calculated according to a points system reflecting the severity of the injury. The score starts with Table VI (medical scale), differing between the psychophysical prospects (after-effect) and the aesthetic damage. Finally, the calculation of the quantity to be indemnified will depend on the monetary value of the applicable point in the table and the age of the victim. The corrective factors for the basic indemnities for permanent injuries are shown in Table IV. In the same way as for death, the financial consequences suffered by the victim are taken into account. In these cases, there is also the possibility of including additional compensation for pain and suffering and for the degree of normal occupational incapacity caused by the accident, as well as other corrections related to expenses incurred as a result of the victim's disability.

The indemnities for temporary disability appear in Table V. The basic indemnity is a fixed and daily amount according to the days off work (distinguishing between hospitalization, preventative and non-preventative days off-work). The correction factors related to financial loss also appear in the same Table V,



EVALUATION SYSTEMS IN EUROPE

Leaving aside the problems in respect of how the scale works, which we will address later, what has given rise to the reform has been the obligation from the European Union, via the Fifth Directive, to reinforce the protection of those injured in road traffic accidents, as well as to speed up the settlement of indemnities. For this reason, and in our opinion, we consider it very necessary to fully understand the different systems for evaluating bodily injury in the rest of the EU and, thus, to take them into account for the future reform of the Spanish scale.

In the financial evaluation of bodily injury arising from traffic accidents, there are important differences between the models applied in the different European countries. On the one hand, countries such as Belgium, France, Italy and Spain apply models based on medical scales for the evaluation of the injury within their judicial solutions. On the other hand, other countries like Ireland, Germany or England, in line with their legal tradition, have established judicial scales. In Bermúdez, Ayuso and Santolino (2009) we set out the characteristics of the evaluation systems of these countries and of others such as Sweden or Norway.

So, the evaluation and repair of the bodily injuries in Europe are based on very different legal dispositions, and on very different jurisprudential and doctrinal traditions. As a consequence, the monetary indemnities granted in the member countries vary considerably in amount and cannot be explained simply by a question of standard of living. Table 1 shows some examples of average indemnity for injury in different countries.

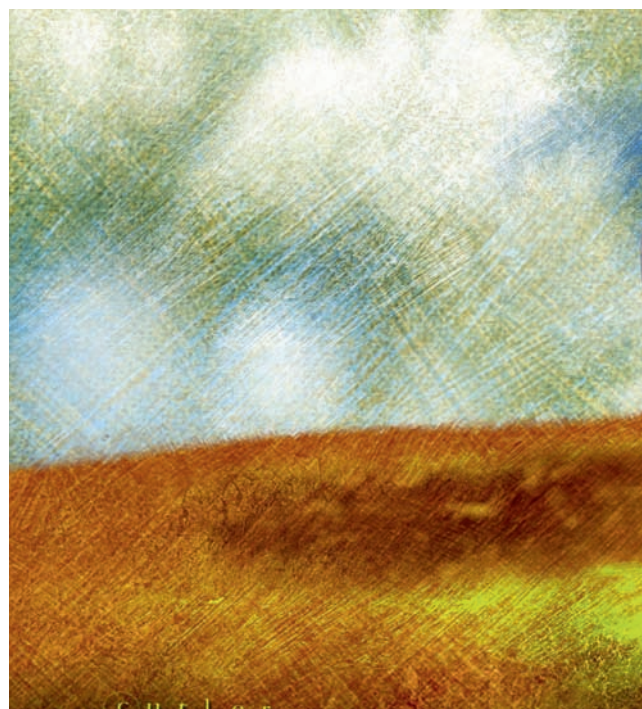


TABLE 1

Differences in the monetary indemnity for non-pecuniary damages (€)

	Cuadriplegia	Masculine sexual malfunction	Loss of vision in both eyes	Loss of the sense of taste
Austria	110.000	47.000	100.000	10.000
Belgium	125.000-237.000	12.000-50.000	60.000-100.000	15.000
England	260.000-333.000	127.000	215.000	32.000
France	270.000	76.000	227.000	-
Germany	175.000-200.000	15.000-75.000	75-250.000	30.000
Italy	390.000	115.000	372.000	9.000
Netherlands	55.000-95.000	35.000	46.000	5.000-15.000

Source: Rogers, W.H. (ed.) (2001) *Damages for Non-pecuniary Loss in a Comparative Perspective*, Springer: Wien / New York.

The EU has to facilitate the free movement of persons within the market and, considering that there is more and more cross-border litigation in respect of road traffic accidents, it should also promote the harmonization of evaluation practices applied by the different member states. The first step in achieving the aforementioned harmonization is the project entitled «European scale Guide for the evaluation of the physical and psychological injuries» already passed by the Commission at the end of 2003 (Rothley, 2003). Borobia (2006), one of the working parties set up to create the Guide, warns that the objective of the publication of a European scale is to provide loss adjusters of the EU member countries with a guide on the grade of disability which arises from a specific injury and, in this way, ensure a certain coherence between the indemnity basis used in one country or another. It is currently in the process of being approved in the European Parliament where it will presumably be published as a Recommendation or as a Directive for road traffic accidents that take place outside the State of the injured person. As from May, 2005, this scale is now obligatory for the evaluation of the seriousness of injury insured under health or personal accident policies or workman's compensation in European institutions.

Despite the advance represented by this project for the harmonization of the indemnities for bodily injuries between the member states, we

¹ For example: Medina (2007), Vicente (2007), Fernández (2008) y Xiol (2008).

should take into account that this European scale is only a medical scale and, therefore, common methodology is required that will translate the psychophysical damage suffered by the victim into monetary terms. Undoubtedly, this second step in the harmonisation process could be very complex, since the chosen methodology has to take into account the economic differences in the different standards of living in the EU countries.

Nevertheless, with regard to a future reform of the Spanish scale, the European medical scale project should be taken in consideration when analysing the possible changes to the current Table V. On this point, the European scale establishes a more precise terminology as to what should be evaluated and certain norms or more exhaustive rules of usage to facilitate the work of the medical expert, which has been one of the complaints of the Spanish scale.

OUTLOOK ON THE REFORM OF THE SCALE

After more than a decade's experience in the application of the current indemnity evaluation system, the deficiencies have become apparent, as well as the need to update it so that it is in line with present Spanish socio-economic situation. We believe that a legal reform of the scale of indemnities should address judicial questions, medical criteria and socio-economic aspects.

First of all, the legal aspects of the reform of the scale are being debated extensively in specialist reading¹ and in the judicial committees created by the different institutions linked to the reform. Aspects from the most formal and structural to the most fundamental, such as the binding nature,



THE EUROPEAN UNION URGED, VIA THE FIFTH DIRECTIVE, TO REINFORCE THE PROTECTION OF THOSE INJURED IN ROAD TRAFFIC ACCIDENTS, AS WELL AS TO SPEED UP THE SETTLEMENT OF THE INDEMNITIES



concurrence and compatibility or universality have been discussed, amongst others.

However, the most outstanding points allude to the basic principles of legal liability: the principle of vertebrate and integral repair. As general rule, we believe that the future reform of the scale should represent progress in the fulfilment of these two principles, without forgetting the objectives of predictability, moderation and equality on which the current system is based, as well enforcing its binding character which guarantees that the aforementioned targets are met.

In order to comply to a greater degree with the principle of vertebrate repair, the future scale would have to prevent specifying the same amount to repair simultaneously damages of a differing nature, as happens at present. In effect, the reform of the scale should look to breakdown the indemnities, differentiating between the amounts that refer to pain and suffering and those damages for financial loss. At the same, damages for financial loss should be divided between those amounts paid for damages already incurred and for those that correspond to future financial loss.

The latter concept, the future financial loss, which is difficult to quantify, makes the current system questionable with regard to compliance

with the principle of integral repair. In most cases, it is impossible to know precisely the amount of future financial loss and, therefore, it is impossible to know whether the principle has been observed. The future reform of the scale will have to tackle, as far as it is possible, the apparent contradiction between the principle of integral repair and the principles of predictability, moderation and equality that it inspires.

Secondly, as a system of evaluation of personal injury, those aspects related to the medical evaluation represent one of the key points of the scale. Nevertheless, except by way of the comments made in the previous paragraph on the problems detected and the possible use of the European rating scale project, we will not analyse further this important aspect since we do not possess the necessary knowledge to do so.

Finally, from a socio-economic point of view, the reform of the scale must improve the protection of victims of road traffic accidents, following the guidelines of the Fifth Directive. In this sense, the reform of the scale should achieve a similarity with the average levels of indemnity of the EU countries. Compared to these countries, the average level of indemnity derived from the application of the current Spanish scale is lower,

and clearly lower, in those claims with serious injuries. After almost fifteen years of functioning, the current scale needs a reform that is able to compensate more fairly those who suffer serious injuries, in line with European levels.

Nevertheless, although there is a certain consensus to improve the awards for serious injuries along the lines of our neighbouring countries, we believe that there has been little debate over the socio-economic impact that an improvement such as this could represent on the total cost of indemnities to be paid by insurance companies. Moreover, we must bear in mind that although initially it would be the insurance companies that would suffer the problems related to the management of this improvement, it would be society as a whole (or at least the vehicles drivers) that would have to bear the increase of the overall cost, possibly via an increase in the corresponding insurance premiums.

This socio-economic component should be borne very much in mind throughout the whole reform process and, in our opinion, very much as a key matter and not just a collateral one. For this reason, each proposal for the reform of the evaluation system should have its own study on the economic impact that it could represent. In this way, the difficult process of choosing between the different proposals made would have more and better elements to be considered.

In Bermúdez, Ayuso and Santolino (2009) we considered different reform scenarios and evaluated their impact on the total cost of indemnities through the use of a database of personal injury

claims in motor accidents. In the following paragraph, by way of a proposal, we show different possibilities to value the financial impact of the different alternatives that could be put forth during the reform of the scale process.

EVALUATION OF THE SOCIO-ECONOMIC IMPACT OF A POSSIBLE REFORM OF THE EVALUATION OF PERMANENT INJURIES

In order to undertake evaluations of the economic impact of possible reform scenarios, it is necessary to have a wide database on road traffic accident claims involving victims that have suffered bodily injuries. As an example, in our case, we had information on a total of 22,709 motor claims that occurred in Spain between 2000 and 2007 and in which there was at least one victim that suffered bodily injury (cases involving the death of the victim were not included). The information refers essentially to injuries (temporary and permanent) suffered by individuals, including the consequences, the days off-work and the indemnities paid for each type of injury. However, it also includes relevant information on the characteristics of the claim, such as the time taken to settle or where the accident took place.

If our objective is to value the economic impact on the total cost of settlement of a reform proposal, first of all we have to ascertain the structure of the aforementioned cost. The breakdown by type, for all of the claims, taking into account the information of the sample study, is shown in figure 1.

In this first approach to the problem of valuing



THE REFORM OF THE SCALE IN SPAIN SHOULD ACHIEVE A SIMILARITY WITH THE AVERAGE LEVELS OF INDEMNITY OF THE EUROPEAN UNION COUNTRIES

the economic impact of different proposals for the reform of the scale, interest has been focused on the part of the system related to permanent injuries. In this sense, the reform scenarios considered here refer to the modification of aspects contained in Table III and IV of the current scale. The proposed scale reform scenarios, where the impact on the total settlement cost has tried to be estimated, have been formulated bearing in mind the opinions on the reform from the various articles, documents and forums analysed, including our own evaluation.

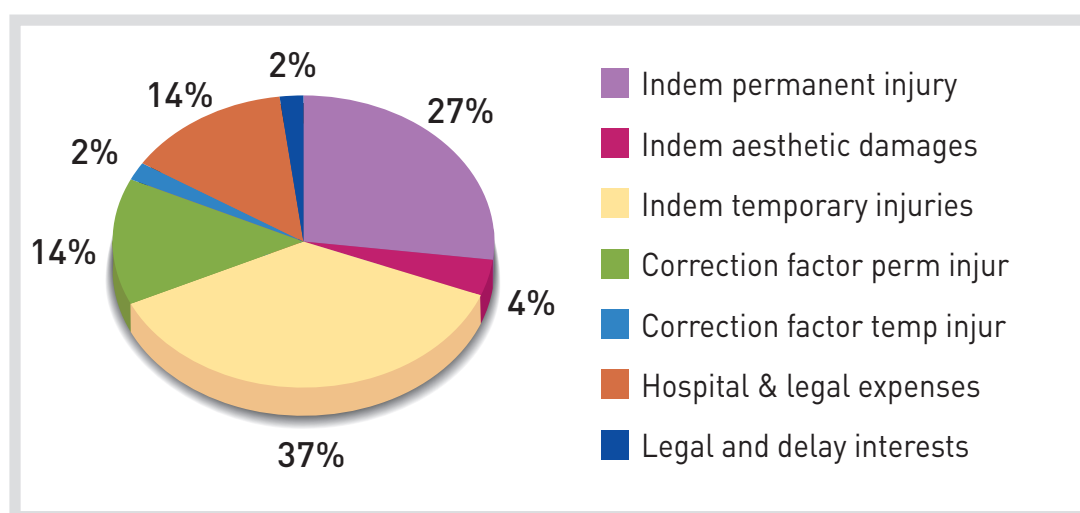


Figure 1. Breakdown of total cost for permanent and temporary injuries.

First of all, we propose a series of scenarios in relation to a future modification of the monetary point value in the current Table III. To define these scenarios, we started out by considering that the monetary point should be increased following the

guidelines towards greater protection of the victim set out under the Fifth Directive. Also, in view of the clear shortcoming in the level of indemnity for seriously injured persons, we considered that the increases in the monetary value point should be higher when the overall score is higher. Following these considerations, as can be seen in Table 2, we establish



THE REFORM OF THE SCALE SHOULD FOLLOW THE OBJECTIVES OF FORESEEABILITY, MODERATION AND EQUALITY THAT THE CURRENT SCALE WAS BASED ON, AS WELL AS MAINTAINING ITS BINDING NATURE IN ORDER TO GUARANTEE THE ACHIEVEMENT OF THESE TARGETS

five score ranges and, for every scenario, we took different percentage increases in the point value for each of the defined range. In all cases, the increase is higher in proportion to the increase in the injury after-effects.

Having defined the scenarios and with the help of the database which indicates the points awarded to each victim for physiological and aesthetic damages from the application of the medical scale, calculations can be carried out to ascertain how the overall indemnities will be increased for injury after-effects (or basic indemnity). For example, for scenario 2, the increases proposed in Table III, of up to 25 per cent for serious injuries, would produce an increase in the indemnities for after-effects of 6,19 per cent, which at the same time would represent an increase of 1,96 per cent on the total settlement cost.



TABLE 2

Evaluation of the economic impact in the case of a modification to the monetary point value for physiological and aesthetic damages

Aesthetic and after-effect damages	Scenario 1	Scenario 2	Scenario 3
Increase (%) for range 1-10	0	0	5
Increase (%) for range 11-30	0	5	10
Increase (%) for range 31-50	5	10	20
Increase (%) for range 51-75	10	15	30
Increase (%) for range 76-100	20	25	40
%increase on basic indemnity	4,44	6,19	13,60
% increase on total cost	1,40	1,96	4,30

Secondly, we wished to look at different reform scenarios in relation to the concepts of the current Table IV (corrective factors that include compensations for financial damages, permanent disability, the need for assistance from another person, adequacy of housing and of own vehicle). According to the available sample, more than one third of the victims have not received compensation

with corrective factors, and 60 per cent of them have received compensation for financial damages. Hence, only 4 per cent of victims received compensation different to that of that of financial damages. However, this small percentage represents more than 80 per cent of the total amount settled as corrective factors. The amounts for permanent disability and assistance from another person are

much higher than those related to compensations for financial damages. For these reasons, when looking at reform scenarios and evaluating its impact on the overall settlement cost, we should concentrate on the three most representative groups: financial damages, permanent disabilities and need for assistance by another person.

As we indicated in the previous paragraph, the evaluation of future financial damages represents one of the most delicate points within the future reform of the scale. At present, the compensation of the future financial damages is limited by the maximum amounts shown in Table IV for each of the categories of permanent disability (partial, total and absolute). This limitation is questioned by most specialist lawyers who think that for an integral repair of the future financial damage, in the context of a closed and binding system such as ours, it is necessary to apply a series of «presumed» rules. These rules have not yet been treated by the specialists that are working on the future reform of the scale, although those used in English legislation (GAD, 2007) could be used as a reference.

With a view to undertaking the first evaluation on the economic impact of the possible reforms that could be proposed on this point and without discussing the necessary assumptions for obtaining «presumed» rules that provide maximum guarantees on the principal of integral repair, we have considered that these items, together with those others already referred to, must give rise to indemnities resulting from the application of the evaluation scale for personal injuries from road traffic accidents that are comparable with the indemnities paid in the EU. Let's consider, for example, an extremely serious case. It involves a 20-year-old who is tetraplegic due to an accident and whose income was 30.000 euros a year.

In Table 3, in the first column, the possible maximum indemnity appears according to the 2007² for the case described³ and, in the following



columns, three scenarios presented to obtain maximum indemnities of two, two and a half and three million Euros, respectively. For these scenarios, the same assumptions have been made for the three items except that of permanent disability. In the first case, an increase of 25 per cent on the point value as shown in scenario 2 of Table 2. Secondly, for economic damages, there is an increase on the basic indemnity of 15 per cent and, in the third case, for the indemnity due to the need for assistance of another person, a maximum indemnity has been considered equal to the actuarial evaluation of the maximum revenue to be earned by a 20-year-old age victim with severe dependency (level II) in accordance according to the Dependency Law⁴. Finally, the remaining items have been maintained with the maximum indemnity as per the 2007 scale.

² The 2007 scale has been used for the purposes of comparing the sample data available.

³ It can be seen that the maximum possible indemnity as for the 2007 scale is around 1.200.000 euros. In other EU countries the indemnity for a similar victim goes from 7 million Euros in the United Kingdom to almost 4 million Euros in Germany.

TABLE 3

Maximum Total Indemnity Scenarios

	2007 Scale	Scenario 1	Scenario 2	Scenario 3
Basic Indemnity (100 points)	300.496,00	375.620,00	375.620,00	375.620,00
Aesthetic Damages (50 points)	150.248,00	187.810,00	187.810,00	187.810,00
Financial Loss	67.611,60	84.514,50	84.514,50	84.514,50
Complementary Pain and Suffering damages	82.685,58	82.685,58	82.685,58	82.685,58
Total and permanent Disability	165.371,17	567.276,67	1.067.276,67	1.567.276,67
Need for 3rd party Assistance	330.742,34	594.602,00	594.602,00	594.602,00
Adaption of Home	82.685,58	82.685,58	82.685,58	82.685,58
Adaption of own vehicle	24.805,67	24.805,67	24.805,67	24.805,67
Total Maximum Indemnity	1.204.645,94	2.000.000,00	2.500.000,00	3.000.000,00
% on corrective factors total		66,32	186,90	269,59
% on total cost		9,09	25,61	36,95

If convergence towards European indemnity levels is sought, then the evaluation of the future economic damage must increase considerably as can be appreciated from Table 3, observing the values in the total and permanent incapability disability items to achieve the maximum total indemnities that bring us closer to European levels.

Specifically, the maximum quantity of this item should be increased by 243,03 per cent to reach the total figure of two million Euros in the first scenario, and 545,38 or 847,73 per cent to reach the figures in scenarios 2 and 3, respectively. In view of these amounts, we need to consider the question of the impact that such an increase would have on the overall settlement cost, keeping all other items unchanged. As is obvious, the increase in the maximum amount is higher than what would have to be applied, on average, to the three types of disabilities. To calculate the increase to be applied to the total costs for disabilities, we have considered that distribution of the increases is normal, that the increases calculated for an extreme case are the distribution maximum and, therefore, on average, the increases should be 50 per cent lower than the maximum. On reviewing Table 3, one can conclude

⁴ From our point of view, the future reform of the scale should compensate this concept as per Law 39/2006, of 14th. December, for the Promotion of Personal Autonomy and Assistance for persons in a situation of Dependency (commonly known as the Dependency Law).



THE CREATION OF THE NEW SCALE SHOULD INVOLVE AN EQUAL PARTICIPATION OF EXPERTS FROM THE DIFFERENT DISCIPLINES IN ORDER TO AVOID SOME OF THE CONTRADICTIONS OF THE CURRENT SCALE

from the examples taken for scenario 2, that compensation of the future financial loss at European levels would represent an increase of approximately 25 per cent in the total cost of settlement of personal damages.

Finally, we would point out that the cases of evaluation presented here are simple examples as to how we might proceed to obtain an economic report on the impact of every proposal within the entire settlement cost. If we were to have more detailed information on the different scale reform proposals, and with the help of a database similar to the one that was made available, we believe that the results that would be obtained, following procedures similar to those used, would be of great help in taking decisions and, to be exact, to evaluate the scope of the scale reform.

CONCLUSIONS

Finally, and in summary, we would emphasise that it is generally agreed in economic circles involved that there is a need to reform the existing scale and that, ultimately, the future reform must address an improvement in the protection of road traffic accident victims. Also, we feel that the reform should follow the objectives of foreseeability, moderation and equality that the current scale was based on, as well as maintaining its binding nature in order to guarantee the achievement of these targets.

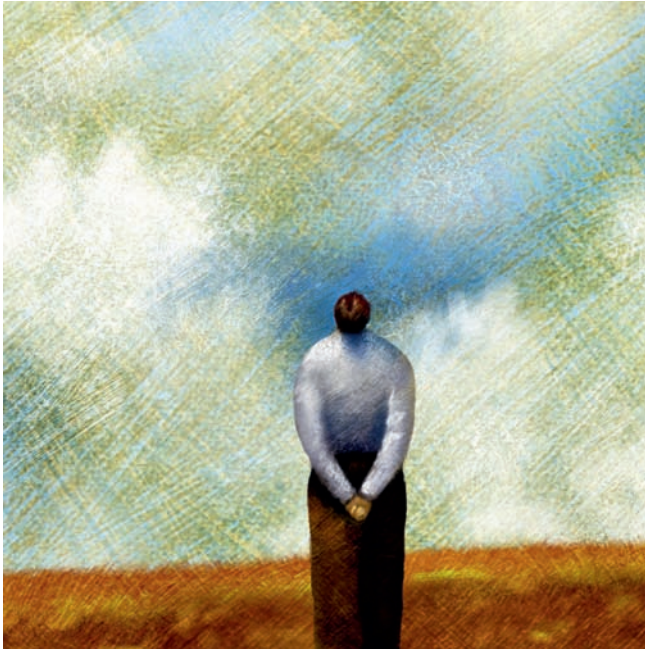
From our point of view, the objectives that inspired the current scale still prevail. A high degree of predictability is necessary to facilitate agreements and to avoid, as far as possible, legal

disputes. In this way, the heavy litigious nature of our judicial system would be reduced and the indemnification of the road traffic victims would be accelerated. At the same time, the aforementioned predictability would facilitate the estimation of the technical reserves by insurers and, thus, increase their solvency.

The reform of the scale must continue to comply with the constitutional principle of equality, although sometimes it might be difficult to make this compatible with the objective of predictability. The factors and circumstances relating to a road traffic accident and its victims are so many and diverse that makes it impossible to reflect them all in a fixed table such as the scale. A basic indemnity, which takes into account some of the more objective factors, guarantees the principle of equality. However, if we include correction criteria on the basic indemnity, which are necessary to take into account the remaining factors, we will



THE REFORM OF THE SCALE MUST CONTINUE TO COMPLY WITH THE CONSTITUTIONAL PRINCIPLE OF EQUALITY, ALTHOUGH SOMETIMES IT MIGHT BE DIFFICULT TO MAKE THIS COMPATIBLE WITH THE OBJECTIVE OF PREDICTABILITY



have reached a consensus or balance between the predictability and equality objectives.

With regard to the objective of moderation, sometimes criticized by certain sectors who consider it to be a demand of the insurance companies' lobby, we should remember that, prior to the approval of the current scale, the situation of judicial inflation in the indemnities seriously prejudiced the financial situation and solvency of insurers and hence their principal concern was to moderate the aforementioned judicial inflation. Presently, and from our point of view, we should consider this objective as a guarantee of the non-profit principle of insurance, i.e. a road traffic accident victim cannot profit from the occurrence of the accident and should only be compensated fairly for the damages caused.

In order to achieve the set goals, we believe that the reform of the scale should take into account a series of circumstances. First of all, a reform of the system for evaluating personal damages should respond to multidisciplinary criteria, i.e. to legal, socio-economic and medical criteria. The creation of the new scale should

involve an equal participation of experts from the different disciplines in order to avoid some of the contradictions of the current scale. In this sense, as pointed out in previous paragraphs, it is necessary to underline the need to have socio-economic reports for each proposal of reform of the scale, so that the impact of the proposal can be evaluated in relation to the total cost of indemnities for road traffic accidents.

Secondly, the implied financial parties involved must respond to the challenges posed by the reform of the scale. On the one hand, via discussion and reflexion the regulator-legislator should encourage agreements that guarantee a fairer and more efficient evaluation system. On the other hand, the insurance companies, and as they have been doing, should participate in the debate of the reform and, thereafter, take onboard the changes that it produces. Lastly, society in general has to understand that greater protection for the victims will probably mean higher claims settlement costs for insurers and, consequently, higher premiums for all policyholders. On this point we ask ourselves whether the insurance sector, in its widest sense and consisting of policyholders, insurers and the regulator, is ready to bear an increase in premiums for the motor class of up to 25 per cent as a consequence of the increase in the cost of indemnities for personal damages. Perhaps, the modification of the scale in phases could be considered so that the increase in phases could be gradual.

However, we believe that there are certain actions that could be taken to mitigate the effect that an improvement in the protection of victims can have on the premiums. The introduction of the concepts of offer and motivated reply may give rise to a reduction in the settlement costs in respect of interests for delay or legal costs. Moreover, the expenses related to the reimbursement of damages and/or compensation (hospital expenses, attorney



and solicitors fees, etc.) might reduce as and when agreements are reached with the relevant authorities.

The future reform of the scale could favour a redistribution of the current compensations. Lesser generosity in the indemnities for injured persons of smaller severity (very frequent) might «finance» substantial increases in the indemnities for more severe injuries (not so frequent and currently worse compensated under the scale), without representing a substantial increase of the premiums.

The latter point might end up being crucial but undoubtedly will not be exempt from controversy. It is our opinion that we should take advantage of the reform of the scale to moderate the amount of indemnities for minor injuries. A high percentage of these are in relation to cervical whip lash which, in our understanding, are indemnified in excess of what we consider to be a fair amount or are simply fraudulent claims in view of the difficulty in proving these injuries.

Finally, we do not want to close this work without sending out a message of optimism in view of the effort being made by Spanish society to reduce the accident level on our roads and which is the best solution to the endemic problem of bodily injuries in road traffic accidents. ■

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The
practical
application

of credibility

models in the rating of Health Insurance

In an increasingly competitive market, fixing insurance premiums is becoming an essential task for insurance companies. The theory of credibility, using its models, enables us to use our own claims experience as basic information for calculating the premium of a specific insurance. By means of a practical example of Health Insurance, this study attempts to demonstrate how the application of credibility models is the best method to adjust the premium to the real claims experience of the product.

INMACULADA PEÑA SÁNCHEZ
MAPFRE FAMILIAR



«The essence of wisdom is concern for the future»

Russel L. Ackoff

In an increasingly competitive market, fixing insurance premiums is becoming an essential task for insurance companies. The greater the knowledge of the risk to be covered, the more exact the insurance premium will be.

The theory of credibility, using its models, enables us to use our own claims experience as basic information for calculating the premium of a specific insurance.

By means of a practical example of Health Insurance, this study attempts to demonstrate how the application of credibility models is the best method to adjust the premium to the real claims experience of the product.

CREDIBILITY THEORY

The credibility theory consists of a series of statistical skills aimed to calculate the insurance premium based on the individual claims experience of the product.

The application of this theory is based on the rating, a posteriori, and which attempts to the heterogeneity within each risk factor. For example, in the case of a product with several insured groups, each group will have a particular claims experience over time. If one group has a high claims experience, it is logical to penalize this group, and not all of them.

The evolution of this theory over time has given rise to different credibility models, with the peculiarity that taking different

starting points they all converge into the same result. They all suggest that the premium to be paid by the insured should combine the individual experience (of the insured group) with that of the product in general so that a premium is obtained that can guarantee the principles of sufficiency and fairness.

CREDIBILITY MODELS

This study focuses on the two most important classic models; the Bühlmann and the Bühlmann–Straub free distribution models. They are named free distribution models because they do not need to establish hypothesis either on the distribution of the individual risks nor on the distribution a priori of the risk parameters.

Whatever the credibility model used, it is necessary to previously define the initial data, specifically:

- **k**, insured groups with homogeneous, but not identical, characteristics. Namely, there should be a certain independence between the groups. In this study, the groups of insureds have been formed in age bands.
- **n**, number of periods of observation which, in this case, is a year.
- **X_{ij}**, is the principal random variable that includes the overall individual claims experience of the j-th in year i.
- **w_{ij}¹** is the observed weighting factor. A weight is assigned to each of the X_{ij}.

¹ Applicable only to the Bühlmann–Straub model.

THE CREDIBILITY
THEORY
CONSISTS OF A
SERIES OF
STATISTICAL
SKILLS AIMED TO
CALCULATE THE
INSURANCE
PREMIUM BASED
ON THE
INDIVIDUAL
CLAIMS
EXPERIENCE OF
THE PRODUCT



ILLUSTRATION STOCK

After applying the credibility models, a series of parameters are obtained which will help me analyse the results obtained for each model.

The principal structural parameters are as follows:

- **m**, group estimator. It is the risk premium or the expected value for all of the individual risk premiums.
- **a**, indicator of the heterogeneity of the portfolio being analyzed..
- **S²**, overall measurement of dispersion



for the claims experience over time.

■ **z**, credibility factor. It is the degree of confidence given to the individual claims experience of the portfolio.

Bühlmann model

The Bühlmann model was really the first credibility model in modern theory, and on which Theory of the Credibility is based

Bühlmann estimates the free distribution credibility formula based on the minimum squares criteria. The risk premium is a function of the credibility factor *z* which is a linear combination of both the specific and general information. In this model, the credibility factor is the sole factor for the whole portfolio.

The credibility premium estimator for Bühlmann credibility is shown in the following formula:

$$\mu(\theta_j) = (1-z) \cdot m + z \cdot x_j$$

Bühlmann-Straub model

This is an amplification of the Bühlmann model using an additional variable, the known weighting factor *w_{ij}*. This way, each *X_{ij}* observation of the model will have a *w_{ij}* associated weight. With this variable, the homogeneity of the observations is eliminated over time; a characteristic that prevails in the Bühlmann model.

The Bühlmann-Straub approach also estimates the risk premium as a function of

the credibility factor with the difference that, in this model, each of the groups has its own *z_j* credibility factor.

The credibility premium estimator in the Bühlmann-Straub method is shown in the following formula:

$$\mu(\theta_j) = (1-z_j) \cdot m + z_j \cdot x_{jw}$$

PRACTICAL APPLICATION

The objective of this application is none other than to see, in practical terms, how to determine the best linear premium by applying the credibility models to a portfolio of a Health product.

The results obtained will be compared to the company's current method for calculating premiums in order to analyze whether or not they coincide with the actual business.

We will now analyze in detail each stage in the application of the credibility models.

1. Selecting the portfolio for study

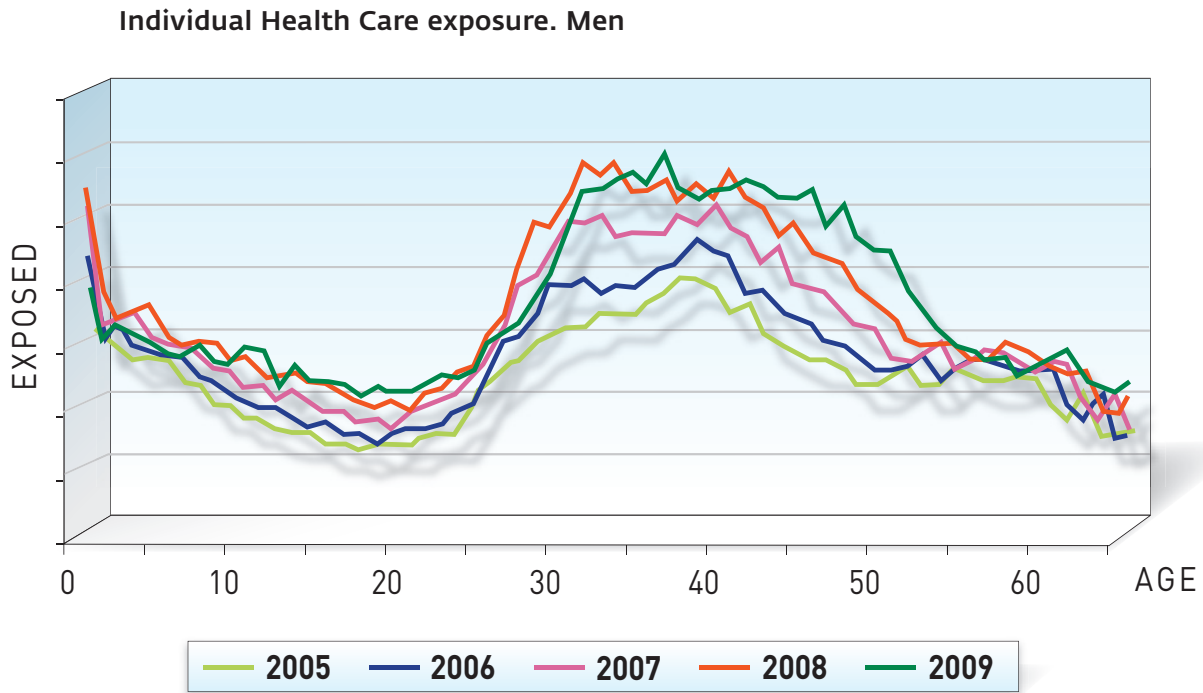
The study is applied to an Individual Health Care Insurance Product. It is defined as an insurance contract by which the company, after payment of the premium by the insured and through its facilities, undertakes the commitment to provide the necessary medical, surgical and hospitable care in the event of illness or injury.

With a view to selecting this product, prior analysis was carried out by age and sex on the evolution of the exposure² in time.

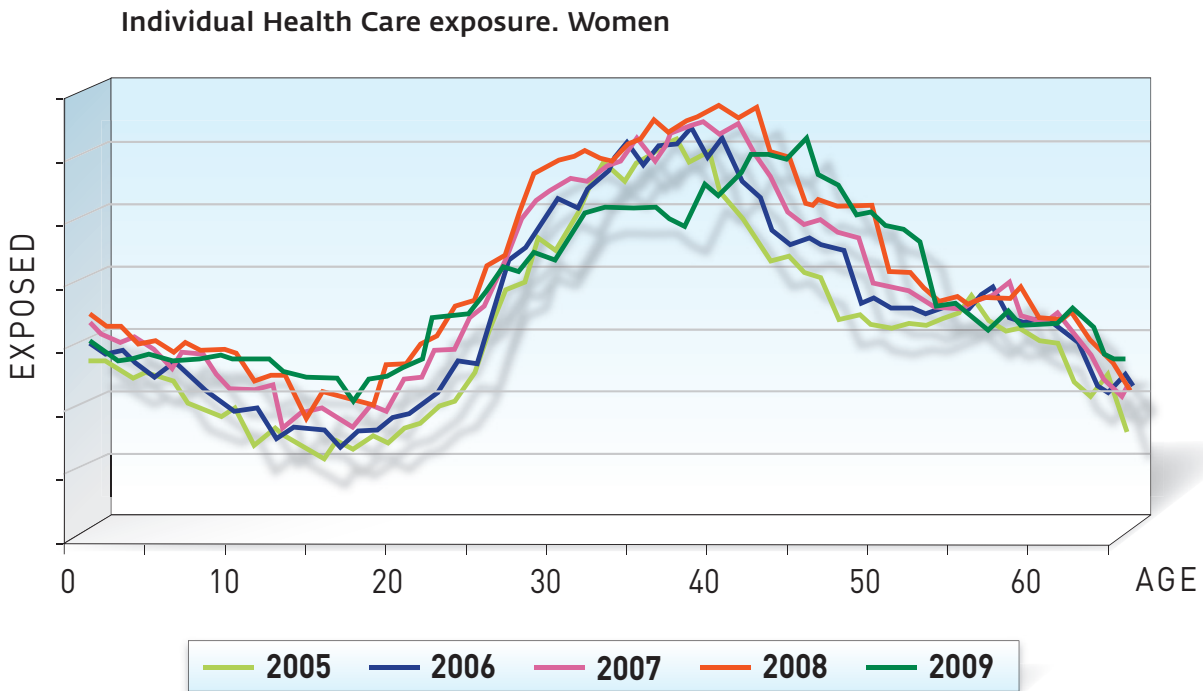
² All units that generate risk during the period considered are deemed to be exposed.

**THE STUDY
FOCUSES ON THE
TWO MOST
IMPORTANT
CLASSIC
MODELS: THE
BÜHLMANN AND
THE BÜHLMANN-
STRAUB FREE
DISTRIBUTION
MODELS**

Graph1. Evolution of the individual Health Care exposure by gender.



Source: prepared by author.



Source: prepared by author.

THE THEORY OF CREDIBILITY, USING ITS MODELS, ENABLES US TO USE OUR OWN CLAIMS EXPERIENCE AS BASIC INFORMATION FOR CALCULATING THE PREMIUM OF A SPECIFIC INSURANCE

Comparing both graphs the following conclusions can be made:

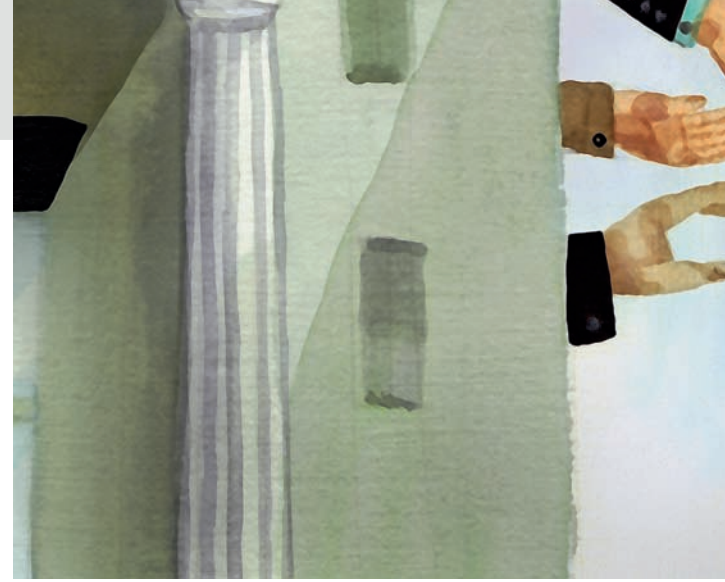
- The exposure presents a similar behaviour both in men and in women, showing the highest values between the ages of 30 and 40.
- The number of those exposed increases progressively with age, and it is from the age of 18 when the number of women surpasses that of men.

2. Claims experience information

Health Care insurance includes several covers, such as primary care, specialist attention and obstetric assistance, to name the more important.

In order to use a solid claims experience and sufficient volume on which to apply the models, the Specialist Assistance³ cover has been taken for the following two reasons:

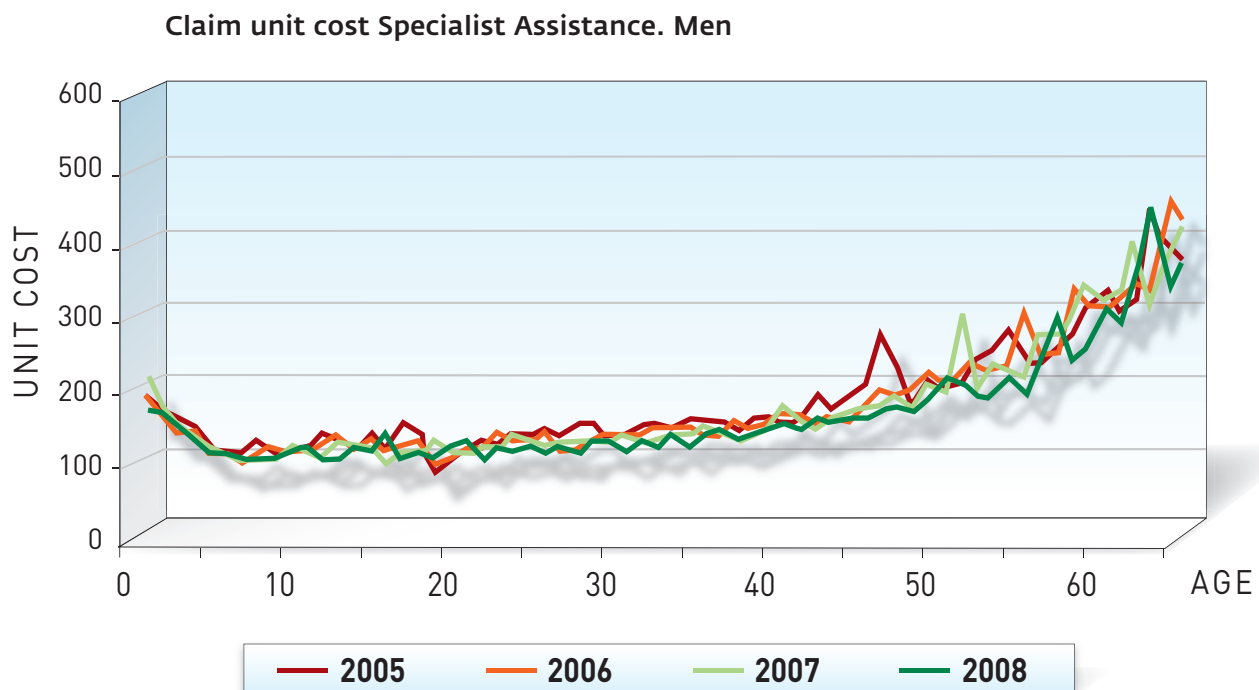
- As it has the highest weighting on the premium and,
- Because it presents a greater frequency compared to other covers.



The considered observation periods take into account the years of claims experience in the company's possession. This study considers the periods from 2005 to 2008, making the analysis for the 2009 year.

³ Specialized Assistance includes specialist medical consultations as well as the tests carried out but does not include the obstetric speciality.

Graph 2. Evolution of the unit cost in Specialist Assistance by gender.



Source: prepared by author.



The variables in the credibility models are represented both by the unit cost of the claim and the relative frequency.

Unit cost per exposure

The unit cost refers to the expense that the insured incurs for any medical consultation as well as for the medical tests that are necessary during the time that the insured remains in policy. This information will be what is shown in the claims experience observations as the principal variable in the credibility models.

In order to compare the evolution of

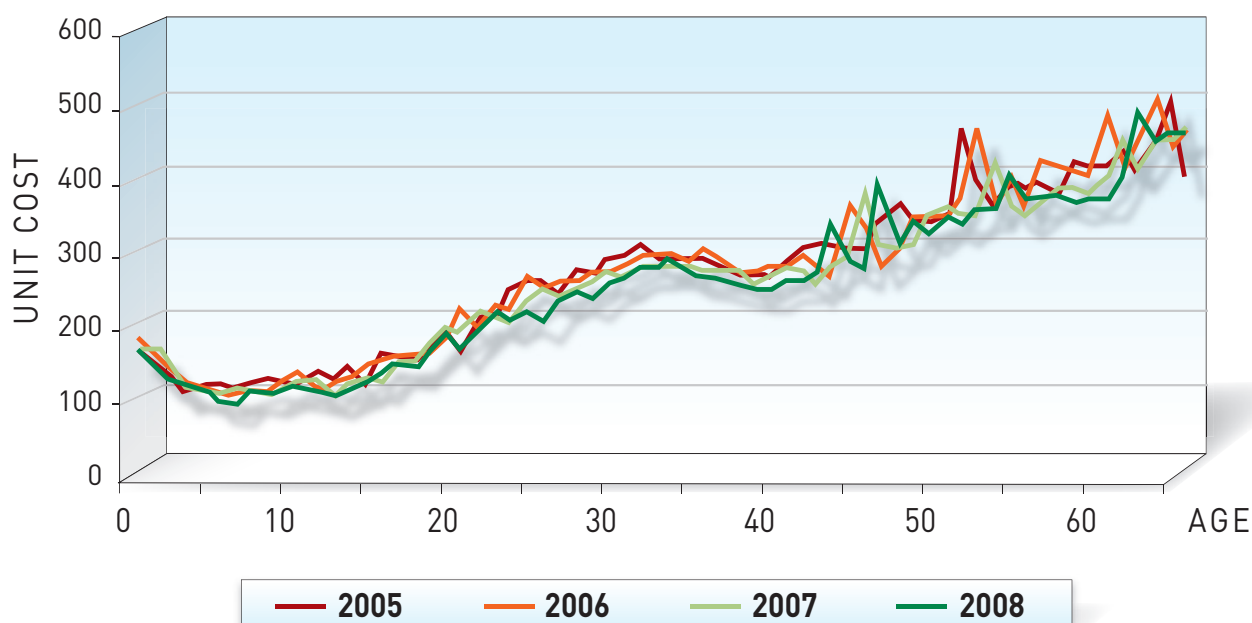
the unit cost during all the considered observation periods, each unit cost prior to the point of analysis, the 2009 year, will be updated in accordance with the indication from the INE (National Statistics Institute) for medical and similar services, as reflected in the following graphs.

By analyzing in detail the behaviour of the unit cost, it can be seen graphically that:

- The evolution of the unit cost increases progressively with the age, both for men and for women, although the growth is even more pronounced for women. With the more advanced ages, there is a greater dispersion in the data.
- The amount of the unit cost is greater in women than in men. From the age of 20, women have twice the cost for men. However, men maintain a fairly stable

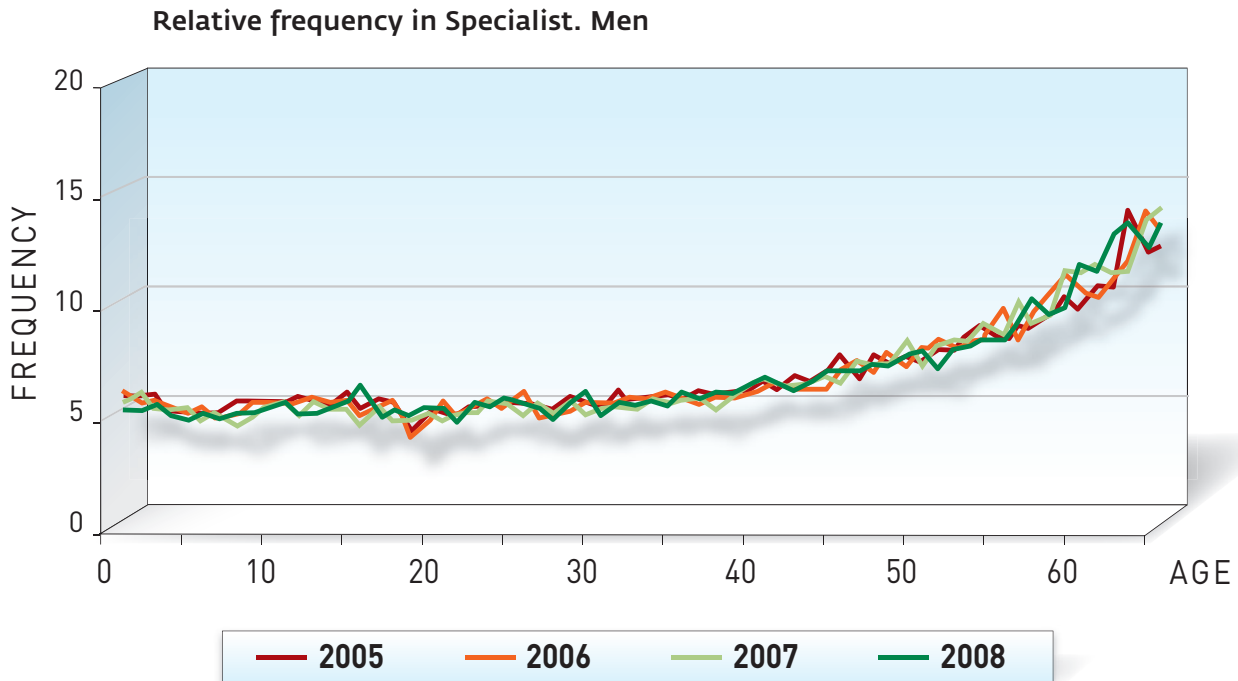
**IN THIS STUDY,
THE VARIABLES
IN THE
CREDIBILITY
MODELS ARE
REPRESENTED
BY THE UNIT
COST OF THE
CLAIM AND THE
RELATIVE
FREQUENCY**

Claim unit cost Specialist Assistance. Women

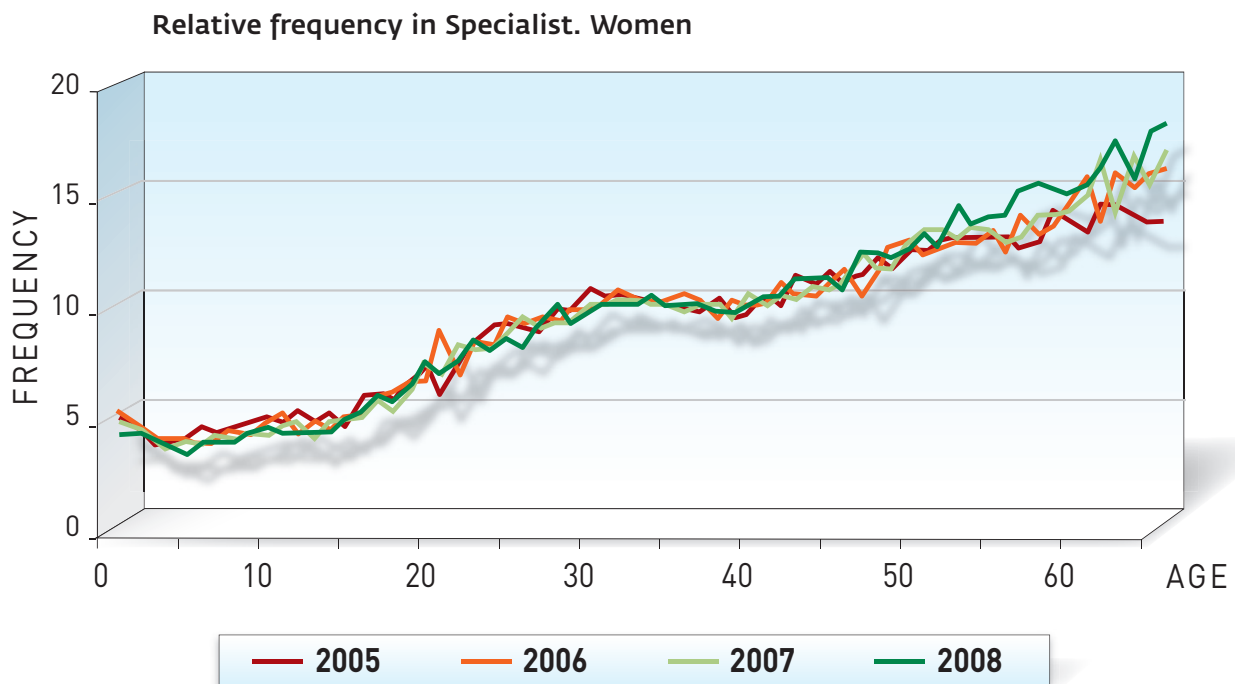


Source: prepared by author.

Graph 3. Evolution of the relative frequency in Specialist Assistance by gender.



Source: prepared by author.



Source: prepared by author.

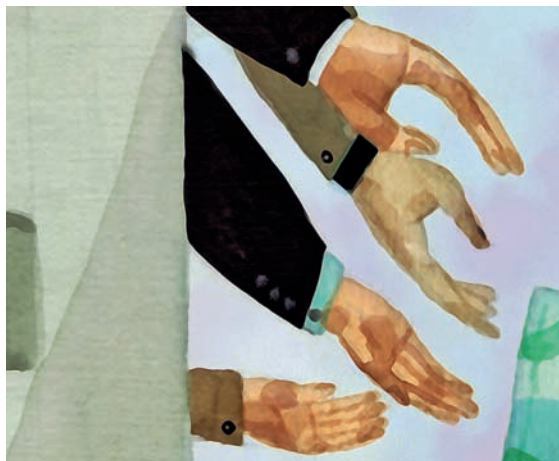
unit cost up to the age of 45 when the cost begins to increase significantly.

Relative frequency

Relative frequency is the name given to the number of claims per exposure, a claim being the performance of a medical act. With the frequency data a weight is assigned to each of the unit cost observations.

As can be observed in the graphs, the evolution of the frequency during the years considered is as follows:

- The behaviour of the frequency follows a trend similar to that of the unit cost.
- The evolution of the frequency increases progressively with age and is



more pronounced in the case of the women. As in the unit cost, with more advanced ages, the dispersion in the data increases.

- There is a clear difference in the frequency by gender. In men, the frequency remains almost constant up to the age of 40, when it begins to increase. However, in the case of women the increase can already be seen from the age of 15.

3. Definition of the starting point hypothesis

Once all the variables of the model have been defined, the starting point hypotheses can be established for this application:

- Two different models depending on the gender, one for men and one for women, since each answers to a different behaviour of the unit cost and frequency.
- Principal variable of risk model, X_{ij} , the unit cost.
- Additional variable, the weighting factor w_{ij}^4 the relative frequency.
- Insured Groups, k . In view of the need to create homogeneous but not identical groups, both the exposure and the unit cost by age and sex have been analysed, considering the deviation from the average. In this way, groups have been created by age as a function of cost and number of exposures in order to maintain a certain independence and homogeneity.
- Observation periods, n . 4 years, from 2005 to 2008.

4. Application of the credibility models

Once the initial hypotheses have been established and all the individual claims experience information has been prepared in accordance with the variables defined in the models, unit cost and frequency, the Bühlmann and Bühlmann-Straub credibility models can be applied.

The result of the application of the models will produce the lineal credibility premium which uses both the individual

THE CREDIBILITY THEORY THROUGH CREDIBILITY MODELS OFFERS THE CLEAR ADVANTAGE OF PROVIDING A PREMIUM ADJUSTED TO THE REALITY OF THE PORTFOLIO

⁴ Applicable only to the Bühlmann-Straub model.

THE CREDIBILITY FACTOR "Z" IS THE DEGREE OF CONFIDENCE GIVEN TO THE INDIVIDUAL CLAIMS EXPERIENCE OF THE PORTFOLIO

experience as per the credibility factor (z) as well as the overall experience, (1-z), reflected in the following formula:

$$\text{Credibility risk premium} = z \cdot X_j + (1-z) \cdot m$$

5. Analysis of results

Analysis criteria

The measurements that are used to select the credibility model which best reflect the reality of the business are the following:

a) **Structural parameters:**

● **m**, group estimator. It is premium result using only the overall experience. In both

models similar values are obtained.

● **m**, portfolio heterogeneity indicator. The greater the heterogeneity of the groups within the portfolio, the greater the weight of the individual experience provided. It can be seen that in both models the heterogeneity is fairly high. ● **S²**, global dispersion measurement of the individual claims experience. The lesser the dispersion, the lesser the random quality of the information and the individual experience will have a greater weight. A minimal dispersion is obtained in both models that implies greater credibility of the individual information provided.

Table 1. Results of the structural parameters of the credibility models.

Parameters	Gender	Bühlmann	Bühlmann-Straub
m	M	147,98	148,09
	F	209,54	209,81
a	MH	4.433,12	5.930,32
	F	9.830,27	9.004,37
S ²	M	41,64	365,31
	F	59,87	796,47

Source: prepared by author

b) **Credibility factor, z:**

It will use values between 0 and 1. The closer the credibility factor is to one, the greater the weight that the individual information will have on the credibility premium.

In this case, z is very close to one in both models although slightly higher in the Bühlmann model. This will mean that the weight that the individual information has on the credibility premium will be greater than the global information.



c) Credibility premium:

As a direct result of obtaining credibility near to one in both models, the credibility premium obtained will be more

similar to the individual estimator X_j than the group estimator m .

Comparing both credibility models, it can be seen that premium of the Bühlmann model is lower.

Men

Table 2. Results of the Bühlmann model.

Group	Individual estimator X_j	Group estimator m	Credibility factor z	Credibility risk factor
1	137,19	147,98	0,9977	137,22
2	91,63			91,77
3	93,54			93,66
4	107,30			107,40
5	136,91			136,94
6	192,13			192,03
7	277,13			276,83

Table 3. Results of the Bühlmann-Straub model.

Group	Individual estimator X_j	Group estimator m	Credibility factor z	Credibility risk factor
1	137,09	148,09	0,9968	137,13
2	91,63		0,9965	91,82
3	93,55		0,9965	93,75
4	107,32		0,9968	107,45
5	136,93		0,9974	136,96
6	192,28		0,9981	192,19
7	277,52		0,9986	277,34

Source: prepared by author

Women

Table 4. Results of the Bühlmann model.

Group	Individual estimator X_j	Group estimator m	Credibility factor z	Credibility risk factor
1	119,67	209,54	0,9985	119,81
2	85,83			86,02
3	144,18			144,28
4	213,39			213,38
5	243,79			243,74
6	305,20			305,06
7	354,74			355,37

Table 5. Results of the Bühlmann-Straub.

Group	Individual estimator X_j	Group estimator m	Credibility factor z	Credibility risk factor
1	119,67	209,81	0,9948	120,14
2	85,86		0,9947	86,53
3	144,19		0,9968	144,39
4	213,40		0,9977	213,39
5	243,85		0,9980	243,78
6	305,24		0,9984	305,09
7	355,58		0,9986	355,37

: prepared by Source author

THROUGH CREDIBILITY MODELS, THE INDIVIDUAL INFORMATION USED IS SUFFICIENTLY RELIABLE TO BASE THE RISK PREMIUM CALCULATION

6. Choosing the optimum model

Both credibility models fulfil the requisites of a sound credibility model. The structural parameters and the credibility factor demonstrate that, through the credibility models, the individual information used is sufficiently reliable on which to base the risk premium calculation.

From the point of view of selecting the optimum credibility model, and despite obtaining very good results with both models, there are some small differences between the two:

- The dispersion (S^2), although minimal, is even lower in the Bühlmann model.
- The credibility (z) is very close to one, but it is in the model of Bühlmann

where it reaches the highest values.

Although an additional variable, relative frequency, w_{ij} , is included in the Bühlmann-Straub model, these frequency values are homogeneous in time and, therefore, neither enrich the model nor improve the results of the Bühlmann model.

Hence, the model that most favours the use of the company's own experience is the Bühlmann credibility model.

7. Adjustment of the credibility models with the current method

A simple way to verify whether the premium currently applied by the company responds to the real claims experience of the business is to compare it with the credibility premium obtained via the credibility model.

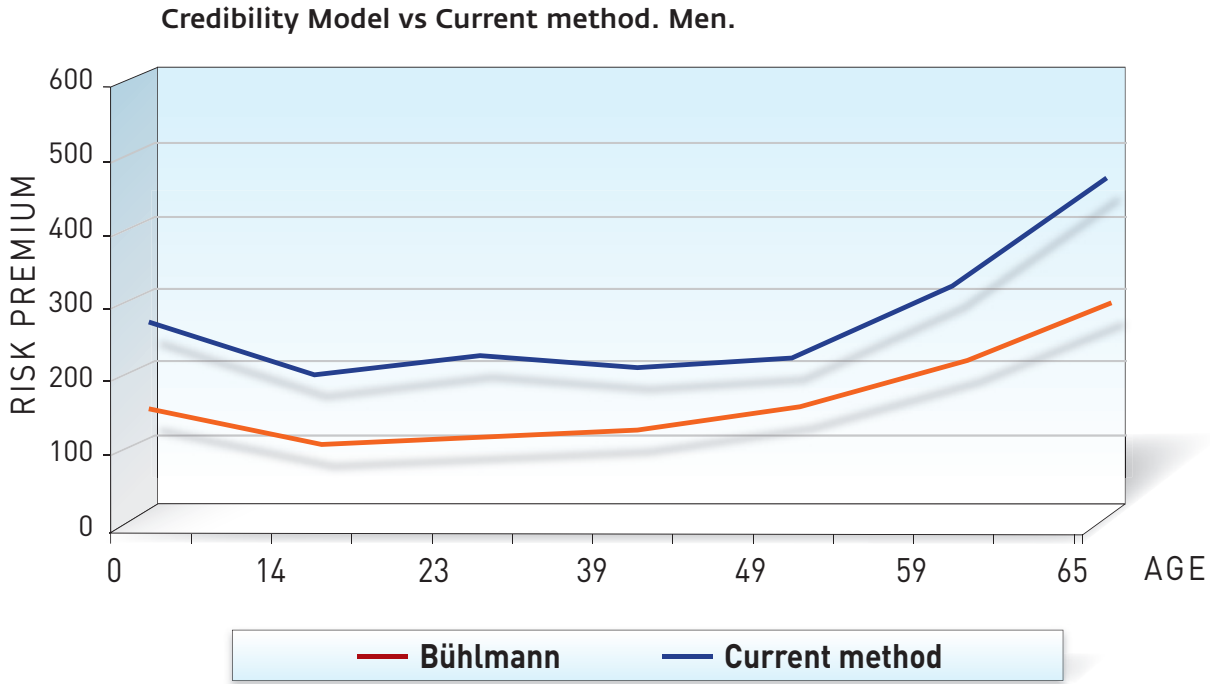
It should be clarified that, to adjust the credibility premium to the business reality, it is necessary to calibrate the credibility model according to the peculiarities of each business.

Comparison of premiums before the adjustment

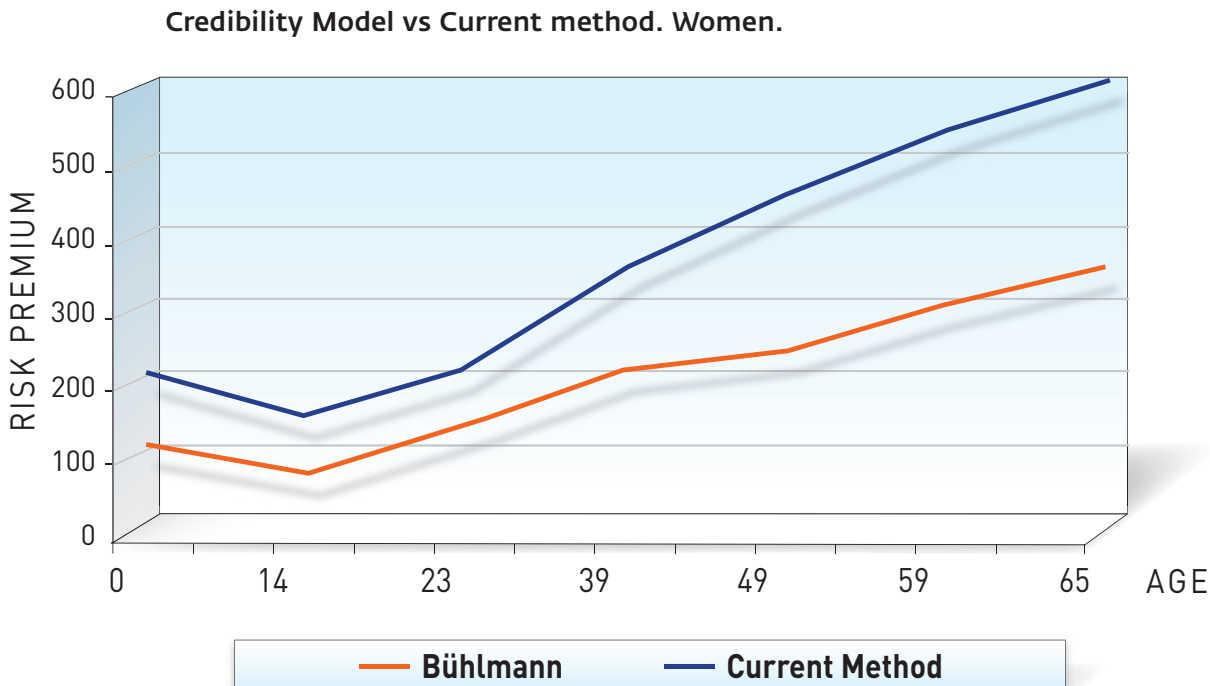
A first comparison is made between the company's risk premium and the Bühlmann model's credibility estimator which responds to the unit cost.



Graph 4. Comparison of premiums before the adjustment.

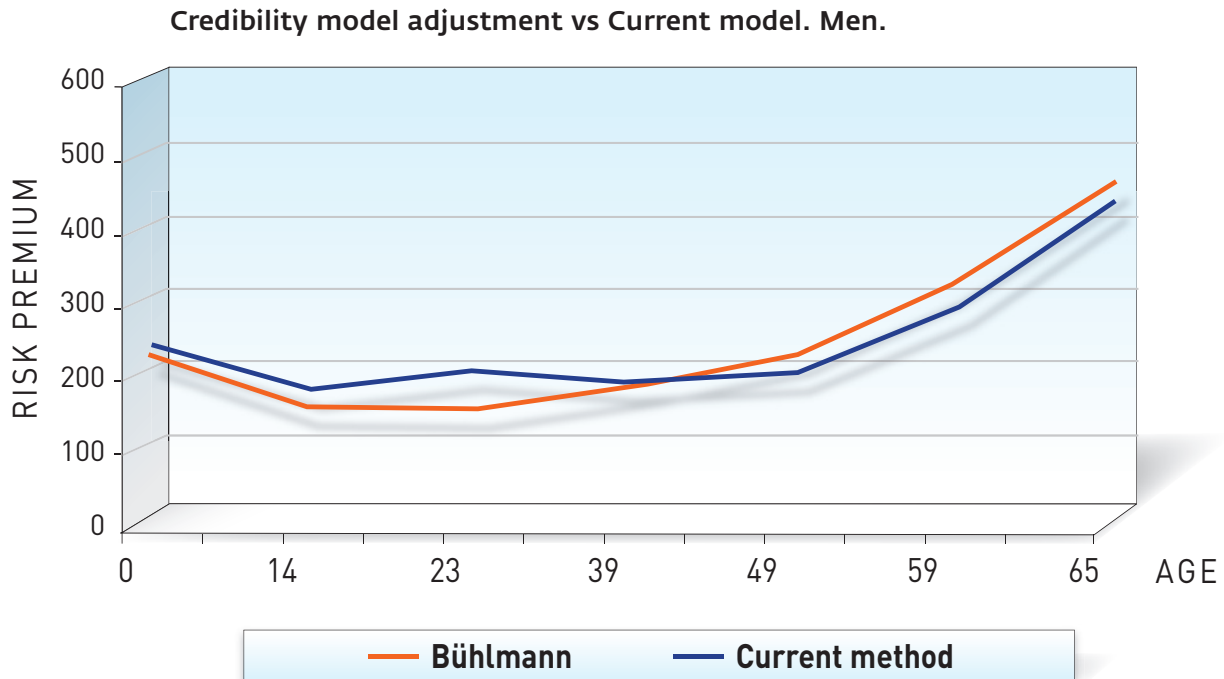


Source: prepared by author



Source: prepared by author

Graph 5. Comparison of premiums after the adjustment.



Source: prepared by author



Comparison of premiums after the adjustment

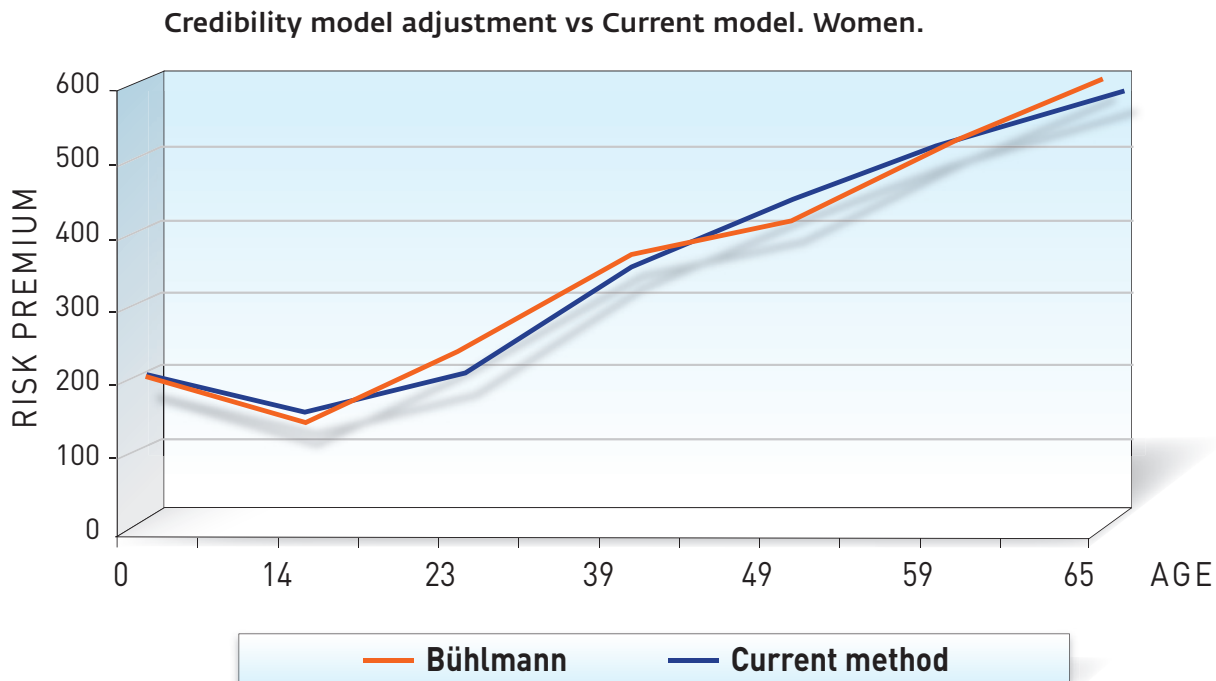
At present, with the premium applied by the Company, a claims ratio of 58% is being obtained. However, the credibility model calculates a premium that responds to the actual unit cost of the claim, i.e., premium and claim coincide, that implies a claims ratio of 100%. For this reason, the Bühlmann model premium is lower than the premium calculated by the company's current method.

Since the claims ratio is the quotient of the claims amount divided by premium, this implies that the premium is inversely proportional to the claims experience ratio.

Nevertheless, in order to make a homogeneous comparison between both methods, the credibility premium must respond to the same claims ratio presented by the company. If the claims ratio for the

From these graphs one can see that:

- The company's risk premium has an evolution by age and sex similar to that obtained in the credibility model.
- It can be clearly appreciated that the current method used by the Company has a higher premium than that obtained in the credibility model.



Source: prepared by author

Bühlmann credibility model reduces to 58 % that corresponds to the ratio obtained by the company, then the premium will increase proportionally.

In this way, one can see graphically how the Bühlmann model premium is very close to the company's premium, both for men and for women.

CONCLUSIONS

The credibility theory through credibility models offers the clear advantage of providing a premium adjusted to the reality of the portfolio, charging premium in accordance with the amount of risk, rewarding the good behaviour for those risks with low claims experience and penalizing those that present a poorer experience.

By way of the result obtained in this application, the credibility models confirm that the current method used by this

company in particular bases its premium calculations on its own claims experience. This signifies a greater knowledge of the risks to be covered and, at the same time, enables it to be competitive in the insurance business. |

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The three *Rs*; a story without *beginning* or *end*

Every story, we are told, has a beginning and an end. Open any paper, however, and you'll see this is not so. Take the Fortis case; only a very shrewd observer could say when the shenanigans began. Even shrewder he who could say when everything will end. Much the same goes for all the other shady customers who hog the headlines lately. How did all that begin? How and when will it all end?

FRANÇOIS SETTEMBRINO
Risk Manager FERMA

The three Rs simply stand for the three great challenges we face today, namely risk, respect and responsibility. We have quite simply forgotten them. Let's bring them back centre stage.





Risk

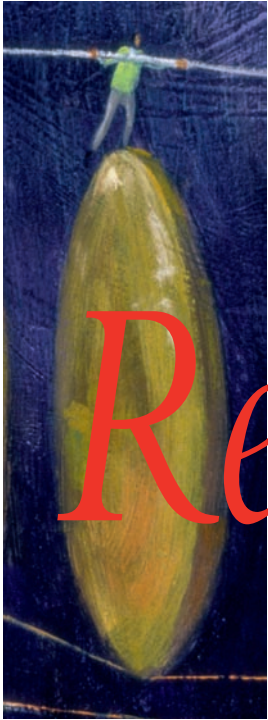
It is curious how many errors this little word engenders. Many regard it as a synonym of danger or damage. Few Risk Management handbooks shed any more light on the matter. Understood as such, it would always be worthwhile making an effort to skirt it. We are in fact besieged with advice of this tenor. «As far as possible we should avoid risks; if there is any way of not taking risk this is the path we should take». If it cannot be completely eschewed, the best option is then to reduce it, trim it down by all possible measures of prevention and protection. There is another way of getting out of the fix, having someone else run the risk; many business contracts do just that. They are the daily bread and butter of jurists and lawyers, and this all comes out very expensive. If this solution is still really unsatisfactory, where else do we turn? Pass on the risk to someone else, i.e., an insurer. The latter will only agree to cover the damage or risk on certain conditions; the damage has to be quantifiable, arising from acceptable and, above all, random risks. A premium also has to be paid. These coverage limitations or refusals have turned attention towards private funds, by way of captive insurance, for example. These serve above all as deductibles, also called retention, and facilitate access to reinsurance.

And that's it! End of story! Nothing of the sort. Businessmen will always tell you that risks have to be run. Youngsters are told to knuckle down to their studies to be better prepared for the life hurdles up

ahead. Has risk suddenly changed its spots? No, it is returning to what it has always been, the only way ahead. Since mankind has been on the earth he has always had to run a whole gauntlet of risks, involving his peers, his environment or natural or artificial disasters... But he has never been able to conceive them as anything else than danger or damage rather than the other way about. The only rational conclusion we can draw from all this is that risk is nothing more than the variance of probabilities, for good or ill. Bad times may be followed by better; businessmen, like all of us human beings, always hope for the best. But a certain lucidity should make us aware that a hitch might always be in the offing, and we should never lose sight of the two faces of risk. Optimists will see the glass half full and pessimists half empty. This different viewpoint does not change the actual event one whit: good and bad will always be bound up with each other. Risk Management can only aim to fine tune this perception and increase our chances of coming out with a positive outcome. Risk Management is a factor of progress and in no way the harbinger of catastrophes, losses and damage. That being so, how should we react? What would be the best way of rekindling a risk culture to kick-start business anew? A good start would be to convince managers that the situation is not really complicated at all. In fact the truth resides in a simple perception within reach of everyone; to strive for a better world we have to run risks. This takes absolutely nothing away from all the procedures that have been dreamed up and developed hitherto: mathematical, actuarial, technical or legal. They are there to help the decision taking but can never override the always



subjective choice of the final decision taker. There are two common driving forces or, if you like, two complementary philosophies that should always be kept in mind.



Respect

Much is said about the rights to be respected, acquired rights, common law but each term only creates a new border; you are either inside or out. The most outrageous example is the set of legal rules designed to weed out discrimination across the board. Has that got anything to do with equality?; is there really any chance of doing away with all forms of harassment? The more rules we make the more exclusions we create. In fact it suffices to flout any one of the many key anti-discrimination nostrums to be excluded *ex officio*. The more criteria we create the greater the risk of falling short of at least one of them; those who enforce them do not usually have either the right or the power to waive them. And when will there be any published statistics about those who are excluded? Everyone, if he gives any thought to it, knows a victim of the procedure among his or her coterie or neighbourhood, and the least appeal is not

always easy to lodge. When some form of moderation has been arranged, the least moderator is forced to bow out if the case is unforeseen, something that often occurs in our longwinded laws that try to fill every loophole with blanket coverage and think they have got everything covered. The most galling thing is that the more precise we try to be, the more interpretations we have to trundle out and the more forks we have to negotiate along the way.

The truth is that respect involves many more things than a mere tilt against discrimination. There is no shortage of battlefields: witness the following. If I have some staff under me, respect for them should make me want to save them from harm. Avoiding accidents, banning harassment, whether moral or otherwise, staving off illness, helping the family in case of death or the employee himself in case of invalidity, guaranteeing a decent pension without frittering away the funds in stockmarket speculation, all these could be said to be facets of respect for the work and the worker. If the employer watches out for the long term, he or she should also guarantee the longest term possible in the employment contract; no firm is viable in the long term without the input of its collaborators.

Running a socially responsible company is tantamount to showing respect and concern for the community we live and work in. Showing concern for public life, succouring wherever possible, abiding by the laws are all only facets of what should or must be done. We should not forget the ills of the present day concerning the climate and various forms of pollution. This is not only a question of showing respect for nature but just as much towards the human beings who suffer from it. It is also a good path towards respect for mankind as a whole; throughout the whole world vast swathes of people suffer from hunger, from cold, from heat or drought, and all are in need of aid. Even in the best-off countries, is it normal for hardworking human beings to earn less money than they need for feeding and caring for themselves or putting a roof over their head?

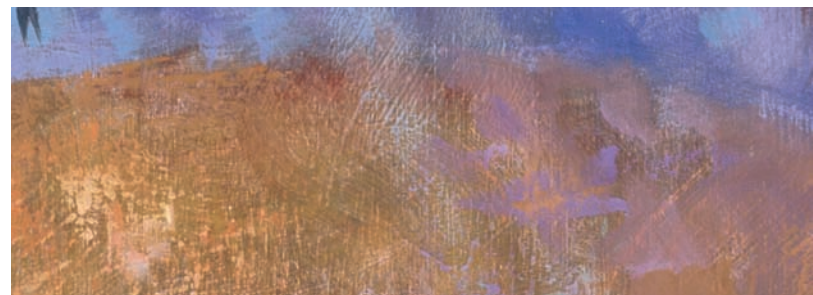


Responsibility

Here we have a word that is almost taboo nowadays, especially among the young. Almost nobody today wants to own up to his or her mistakes because almost nobody wants to put them right. Insurers are probably to blame for a general misconception of this principle; when you have caused some damage, never declare yourself responsible for it, otherwise you risk losing your coverage. The car accident report shows the way to go; acknowledge the facts and only the facts; for all you know there might be rules that will eventually get you off, and the professional insurer will make sure you benefit from them.

Worse still; the various schemes of no-fault liability springing up like mushrooms cloud the judgement of the youngest (and also the not so young). Even if you are not in fact responsible, act as if you are and compensate the «victims». It would have been simpler to invent some sort of expanded social security scheme covering all the ills we might suffer from, but this would soon have proven unworkable. The USA has taken things to extremes, allowing lawyers to wax fat on the most farfetched or tenuous

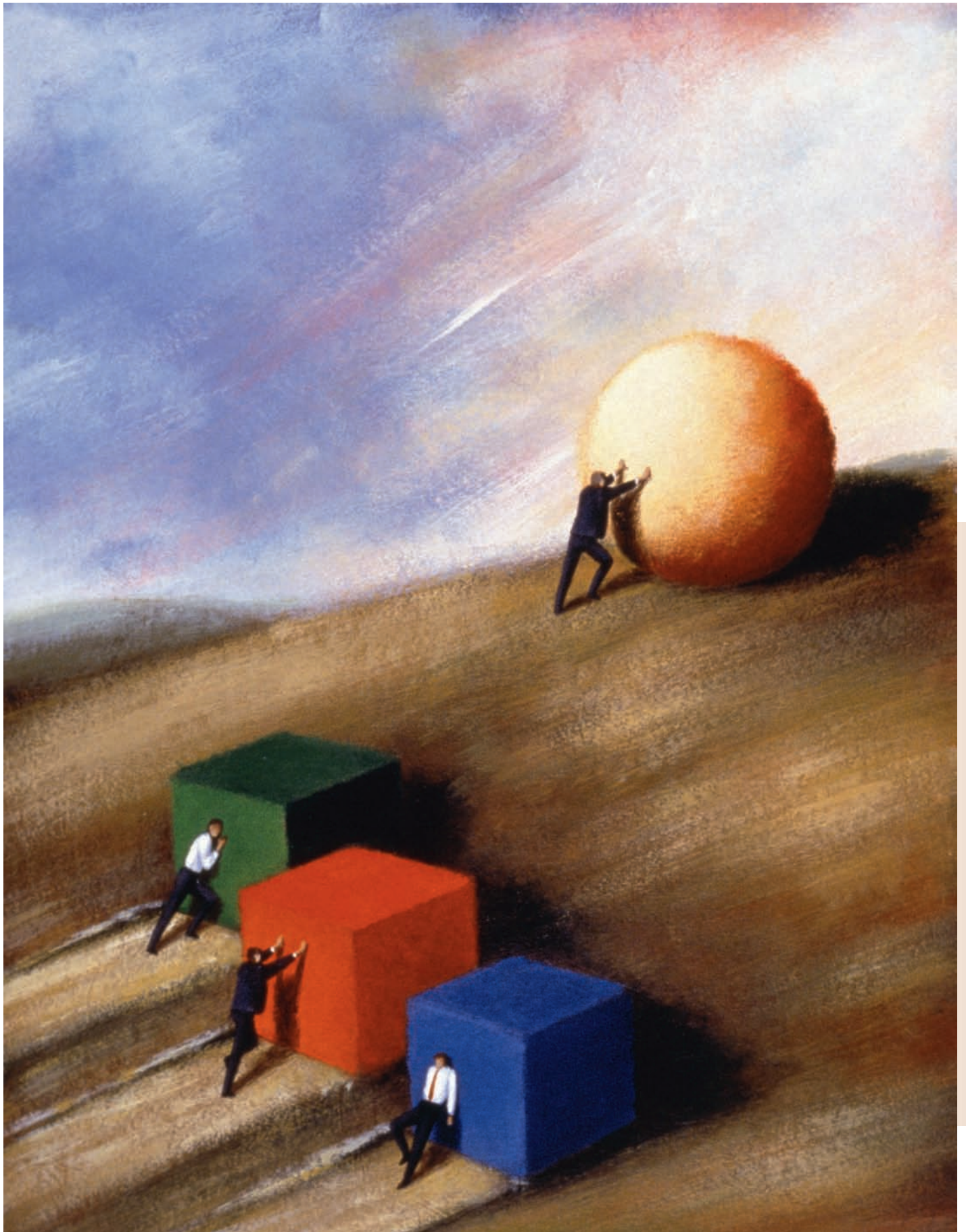
causes; if they miss their mark it will cost you little or nothing. But if they succeed the booty has to be shared with them, often on a fifty-fifty basis. How can we then resist the lure of easy gains? Long forgotten, the responsibility of our grandparents is now almost meaningless. All the professions, all the crafts are contaminated; mistakes are no longer countenanced. Take doctors; they can never guarantee a result because they are bound only by a best-endeavour obligation. Some of them can no longer secure coverage at an affordable price and therefore refuse to offer certain care... because things might not always come out as hoped and patients won't put up with this any more. Stories of this ilk could be told ad infinitum so let's go back to the basic principle. Being



responsible is to take on a steady role; parents are responsible for bringing up their children, something that is not always evident in single-parent families. Politicians are (or should be) responsible for the common good. Manufacturers are responsible vis-à-vis their clients, but even so they have failed to take strict product-safety measures. The host of service providers is responsible for their quality and also their price. Where lies the problem? In the simple fact that everyone is crystal clear about what responsibility means in the case of others but much less sure when it concerns themselves. There is therefore an urgent need to get back to the simplicity or grandeur of the golden rule «Do unto others as you would have them do unto you»...

We hence come to a new formulation of Risk Management. In fact it is only a melange of the three Rs. From the very beginning of life on earth there has been risk, and there is no progress without it. Risk is strange to us because it is nothing more than uncertainty, with a positive or negative outcome that can never be guaranteed. We should get our head round this fact instead of always harping on about losses and damage. For its part behaviour in regard to risk can be summed up in two words; respect and responsibility. Respect is nothing more than paying benevolent and prudent attention to fellow beings and nature. Responsibility is there only to link up with risk, in assuming and enforcing the concomitant duties. We can come up with all the arrangements we like, invent all sorts of recipes, draw up complex models but if they do not tally with these two qualities we fall into overkill. This overkill whittles risk down into harmful circumstances, proving right all those who see in risk only the negative results. Today's financial catastrophe is a monstrous proof of this; we have even forgotten to respect common sense and no one holds him or herself accountable for the manoeuvre any more. Do we need still more catastrophes before getting back to a lucid view of Risk Management? **!**





For the eighth straight year, FUNDACIÓN MAPFRE presents its ranking of the top 25 insurance groups in Latin America by premium volume, this time for 2009. Three rankings have been compiled – Overall, Life and Non-Life – and separate information is also included on local and multi-national insurers.

CENTRO DE ESTUDIOS
FUNDACIÓN MAPFRE

RANKING of insurance groups in Latin America

After six years of economic growth, the countries of Latin America and the Caribbean saw their GDP decline by 1.9 percent in 2009. The impact of the international financial crisis was acute in late 2008 and early 2009, although internal and external factors helped speed up the process of recovery starting in the third quarter of 2009: counter-cyclical measures under taken by several countries of the region through fiscal and monetary policy; the sustained strength of some Asian economies, whose demand for products from the region boosted the recovery of exports; and the improvement in the U.S. economy, which helped create a better scenario for the economies of Mexico and Central America.

The insurance markets of Latin America continued to show signs of strength, with nominal increases in premium volume as measured in local currencies in all countries except Chile. For yet another year, the rise in the euro against some local currencies did not favor converting premium revenue into the single European currency. Indeed, the Mexican peso's fall against the euro was one of the factors that contributed most to the changes in this ranking. On the other hand, the dollar's rise against the euro had the opposite effect in other markets, such as that of Puerto Rico, for instance.

Premium volume in Latin America totaled



PREMIUM VOLUME IN LATIN AMERICA TOTALED 75,769 MILLION EUROS IN 2009, WITH A NOMINAL RISE OF 10.7% COMPARED TO 2008



75,769 million euros¹ in 2009, with a nominal rise of 10.7% compared to 2008. Events in the main insurance markets of the region can be summed up in the following way:

- In Argentina, Non-Life insurance was once again the main driving force in the market's development, with the biggest increases coming in Automobile and Workmen's Compensation insurance.
- In Brazil, life insurance known as Vida

¹ Does not include Health insurance in Brazil, Life Annuities and Retirement insurance in Argentina or Pensions in Mexico.

RANKING OF INSURANCE GROUPS IN LATIN AMERICA IN 2009 TOTAL

RANKING 2009	GROUPS	COUNTRY	PREMIUMS (millions €)		% ▲	MARKET SHARE 2009 (%)	RANKING 2008
			2008	2009			
1	BRADESCO SEGUROS	BRAZIL	5.203	5.834	12,1	7,7	1
2	ITAÚ/UNIBANCO HOLDING	BRAZIL	5.035	4.741	-5,8	6,3	2
3	MAPFRE	SPAIN	3.490	4.284	22,7	5,7	3
4	METLIFE	UNITED STATES	2.509	2.527	0,7	3,3	4
5	BANCO DO BRASIL	BRAZIL	1.523	2.370	55,6	3,1	8
6	LIBERTY MUTUAL	UNITED STATES	1.839	2.317	26,0	3,1	5
7	SANTANDER	SPAIN	1.166	2.311	98,3	3,1	18
8	PORTO SEGURO	BRAZIL	1.565	1.858	18,7	2,5	6
9	CNP	FRANCE	1.311	1.527	16,5	2,0	13
10	SUL AMÉRICA	BRAZIL	1.348	1.489	10,4	2,0	11
11	G. NACIONAL PROVINCIAL	MEXICO	1.555	1.417	-8,9	1,9	7
12	TRIPLE-S	PUERTO RICO	1.229	1.411	14,8	1,9	14
13	AXA	FRANCE	1.480	1.393	-5,9	1,8	9
14	ZURICH	SWITZERLAND	1.222	1.328	8,7	1,8	15
15	BBVA	SPAIN	1.377	1.278	-7,2	1,7	10
16	ALLIANZ	GERMANY	1.343	1.267	-5,6	1,7	12
17	HSBC	UNITED KINGDOM	1.084	1.216	12,1	1,6	20
18	AIG	UNITED STATES	1.205	1.213	0,6	1,6	16
19	GENERALI	ITALY	1.111	1.146	3,1	1,5	19
20	INBURSA	MEXICO	682	1.143	67,7	1,5	24
21	MCS	UNITED STATES	895	1.112	24,2	1,5	21
22	MMM HEALTHCARE	UNITED STATES	745	947	27,1	1,3	23
23	MERCANTIL	VENEZUELA	645	936	45,1	1,2	-
24	SURAMÉRICA	COLOMBIA	811	805	-0,7	1,1	22
25	LA PREVISORA	VENEZUELA	662	790	19,3	1,0	-

Total of the top 10	24.989	29.259	17,1	38,6
Total of the top 25	41.036	46.660	13,7	61,6
Total for the sector	68.430	75.769	10,7	100

RANKING OF INSURANCE GROUPS IN LATIN AMERICA IN 2009 NON-LIFE

RANKING 2009	GROUPS	COUNTRY	PREMIUMS (millions €)		% ▲	MARKET SHARE 2009 (%)	RANKING 2008
			2008	2009			
1	MAPFRE	SPAIN	2.669	3.371	26,3	7,9	1
2	LIBERTY MUTUAL	UNITED STATES	1.759	2.238	27,2	5,2	3
3	PORTO SEGURO	BRAZIL	1.462	1.752	19,8	4,1	4
4	ITAÚ/UNIBANCO HOLDING	BRAZIL	2.224	1.728	-22,3	4,0	2
5	BRDESCO SEGUROS	BRAZIL	1.356	1.435	5,8	3,3	5
6	SUL AMÉRICA	BRAZIL	1.191	1.338	12,4	3,1	6
7	ALLIANZ	GERMANY	1.018	1.101	8,1	2,6	9
8	AXA	FRANCE	1.148	1.062	-7,5	2,5	7
9	ZURICH	SWITZERLAND	881	956	8,5	2,2	10
10	MERCANTIL	VENEZUELA	628	912	45,4	2,1	14
11	G. NACIONAL PROVINCIAL	MEXICO	1.037	912	-12,1	2,1	8
12	INBURSA	MEXICO	451	864	91,6	2,0	20
13	GENERALI	ITALY	721	846	17,3	2,0	12
14	AIG	UNITED STATES	860	809	-6,0	1,9	11
15	LA PREVISORA	VENEZUELA	655	781	19,2	1,8	13
16	G. MULTINACIONAL	VENEZUELA	503	631	25,4	1,5	19
17	RSA	UNITED KINGDOM	611	609	-0,3	1,4	15
18	ACE	UNITED STATES	580	553	-4,8	1,3	16
19	HDI	GERMANY	420	526	25,1	1,2	21
20	QUÁLITAS	MEXICO	559	467	-16,4	1,1	18
21	SANCOR	ARGENTINA	308	415	34,7	1,0	-
22	CNP ASSURANCES	FRANCE	363	405	11,7	0,9	24
23	BBVA	SPAIN	381	389	2,0	0,9	22
24	BANCO DO BRASIL	BRAZIL	296	388	31,0	0,9	-
25	HSBC	UNITED KINGDOM	376	387	2,9	0,9	23

Total of the top 10	14.337	15.894	10,9	37,1
Total of the top 25	22.460	24.875	10,8	58,0
Total for the sector	38.837	42.889	10,4	100

VGBL (Vida Gerador de Benefício Livre), which is sold mainly by banks, confirmed its role as the main source of growth in that country's market.

■ The Chilean insurance sector contracted because of the economic crisis, especially in Life insurance, which is the main branch there, due to a fall in demand for lifetime annuities.

■ Colombia's main source of growth was the Life insurance branch.

■ The Mexican insurance market posted a higher rate of growth as compared to the previous year, with the biggest contribution to this expansion coming from Non-Life insurance.

■ Growth in Puerto Rico's market was fueled only by Health insurance, specifically the Medicare program, which resumed growth after stagnating the previous year.

■ The growth rate in the Venezuelan insurance sector remained at a level similar to that of 2008. The 34.7% increase as measured in local currency come against a backdrop of 25.1% inflation, which made for a positive rate of growth in real terms. Expansion in the sector came mainly from the Automobile and Health lines.



THE PREVIOUS YEAR



OVERALL RANKING

The ten largest insurance groups in Latin America in 2009 posted 29,200 million euros in premiums, which marked growth of 17.1% compared to their revenue the previous year. The sector in general expanded 10.7%. The rise among the largest groups was influenced by the significant increase in revenues seen at MAPFRE, Liberty Mutual, Porto Seguro and Sul América in the Non-Life segment, and by Bradesco, Banco do Brasil,

THE TEN LARGEST INSURANCE GROUPS IN LATIN AMERICA IN 2009 POSTED 29,900 MILLION EUROS IN PREMIUMS, WHICH MARKED GROWTH OF 17.1% COMPARED TO THEIR REVENUE

Santander and CNP in Life insurance. The concentration of these ten groups compared to the ranking for 2008 increased by 1.2 percentage points, with Brazilian groups clearly dominating.

Brazil's Bradesco and Itaú/Unibanco continue to lead the ranking, taking the first and second places, respectively. Bradesco's market share went up one-tenth of a point to 7.7%, while that of Itaú/Unibanco fell by more than a point from 7.4% to 6.3%, as a result of a 5.8% decline in premium revenue. MAPFRE² remained in third place, with a rise in market share of six-tenths of a point, and MetLife stayed in fourth place, although its market share declined somewhat.

The fall in premiums at Itaú/Unibanco is linked to the rise of Porto Seguro. In August 2009 the two companies signed an agreement to merge their Automobile and Homeowner's insurance. The partnership was implemented through a deal in which Itaú/Unibanco transferred all of its assets and liabilities stemming from these policies to a new company, Itaú Seguros de Auto e Residência, which is controlled by Porto Seguro. In exchange for this, Porto Seguro issued shares equivalent to 30% of its capital and gave them to Itaú/Unibanco. In this report, the premiums of the new company have been added to Porto Seguros.

As for MAPFRE, all of its units except for



those in Chile, Mexico and Puerto Rico saw major increases in revenue, although those of Venezuela and Brazil stand out because they are the companies with the largest premium volume. Another positive factor was the strategic alliance that the Spanish group signed with Grupo Mundial, which is made up of the Panamanian company Aseguradora Mundial and its insurance units in Costa Rica, Nicaragua, Honduras, El Salvador and Guatemala.

The changes in the ranking began as of the



THE LIST IN 2008

THE TOTAL PREMIUM VOLUME OF THE 25 GROUPS THAT MAKE UP THE RANKING IN 2009 WAS 46,600 MILLION EUROS, UP FROM 41,500 MILLION FOR THE GROUPS THAT WERE ON

² This does not take into account the accord with Banco do Brasil, which is contingent on approval by SUSEP.

RANKING OF INSURANCE GROUPS IN LATIN AMERICA IN 2009 LIFE

RANKING 2009	GROUPS	COUNTRY	PREMIUMS (millions €)		% ▲	MARKET SHARE 2009 (%)	RANKING 2008
			2008	2009			
1	BRADESCO SEGUROS	BRAZIL	3.846	4.399	14,4	13,4	1
2	ITAÚ/UNIBANCO HOLDING	BRAZIL	2.811	3.013	7,2	9,2	2
3	METLIFE	UNITED STATES	2.205	2.235	1,3	6,8	3
4	BANCO DO BRASIL	BRAZIL	1.227	1.982	61,5	6,0	4
5	SANTANDER	SPAIN	903	1.974	118,6	6,0	8
6	TRIPLE-S	PUERTO RICO	1.114	1.294	16,1	3,9	5
7	CNP ASSURANCES	FRANCE	948	1.122	18,4	3,4	7
8	MCS	UNITED STATES	895	1.112	24,2	3,4	9
9	MMM HEALTHCARE	UNITED STATES	745	947	27,1	2,9	11
10	MAPFRE	SPAIN	821	913	11,2	2,8	10
11	BBVA	SPAIN	996	889	-10,7	2,7	6
12	HSBC	UNITED KINGDOM	708	829	17,1	2,5	12
13	G. NACIONAL PROVINCIAL	MEXICO	518	505	-2,6	1,5	14
14	SURAMERICANA	COLOMBIA	516	488	-5,4	1,5	15
15	HUMANA	UNITED STATES	456	483	6,0	1,5	17
16	NEW YORK LIFE	UNITED STATES	433	473	9,1	1,4	18
17	AIG	UNITED STATES	345	404	17,1	1,2	21
18	PMC MEDICARE CHOICE	PUERTO RICO	289	386	33,9	1,2	-
19	BANAMEX	MEXICO	355	375	5,7	1,1	20
20	FIRST MEDICAL HEALTH PLAN	UNITED STATES	355	373	11,2	1,1	23
21	ZURICH	SWITZERLAND	341	372	9,1	1,1	22
22	AXA	FRANCE	332	331	-0,4	1,0	24
23	GENERALI	ITALY	390	300	-23,2	0,9	19
24	BOLÍVAR	COLOMBIA	245	292	18,9	0,9	-
25	ING	NETHERLANDS	476	286	-39,9	0,9	16

Total of the top 10	15.516	18.990	22,4	57,8
Total of the top 25	22.252	25.776	15,8	78,4
Total for the sector	29.593	32.880	11,1	100

fifth rung, with major rises such as that of Banco do Brasil, thanks to the increase in premium revenue at its Brasilprev unit (in which the Principal group also has a stake); that of Santander Seguros, following its acquisition of 50% of the Brazilian company Real Tokio Marine Vida e Previdencia; and that of CNP, due to growth in its Brazilian unit.

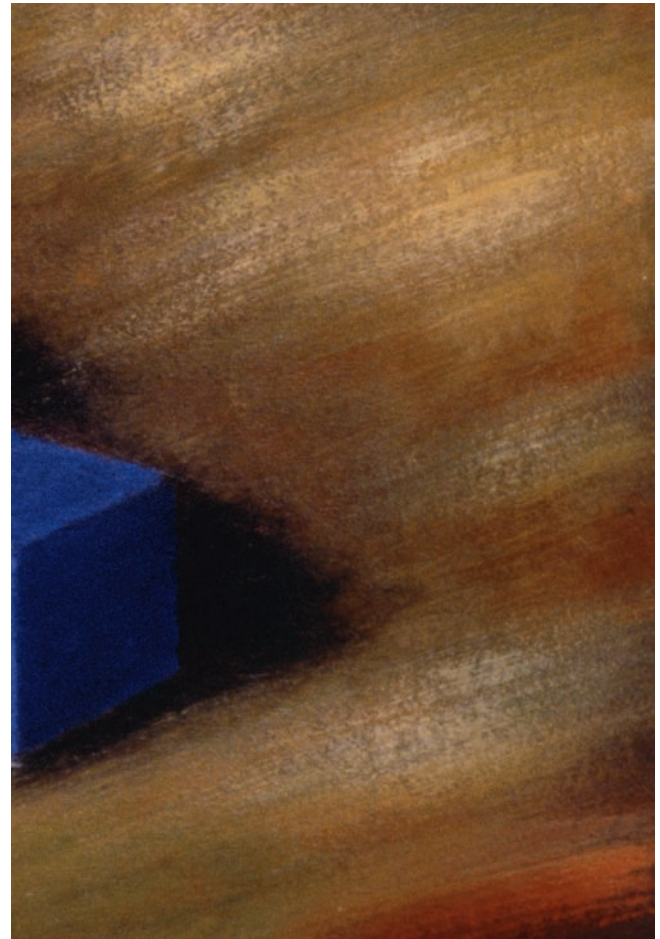
As for companies joining the ranking for the first time, we can highlight the entry of the Venezuelan groups Mercantil and La Previsora, which replaced the Japanese firm Tokio Marine and the U.S. company ACE. In the case of the Japanese group, its departure is due to its sale of its 50% stake in Real Tokio Marine Vida e Previdencia to the Santander group, which, with this deal, now controls 100% of the company. The Spanish bank acquired its first 50% stake in this company indirectly when in 2007 it took on the Brazilian business of ABN Amro, which implied the acquisition of Banco Real. As for ACE, its revenue went down slightly in Brazil and Mexico because of the depreciation of the Mexican peso and the Brazilian real against the euro.

The total premium volume of the 25 groups that make up the ranking in 2009 was 46,600 million euros, up from 41,500 million for the groups that were on the list in 2008.



OF THE PREVIOUS YEAR

THE 25 LARGEST INSURANCE GROUPS IN THE NON-LIFE SECTOR IN LATIN AMERICA HAD NEARLY 25,000 MILLION EUROS IN PREMIUMS IN 2009, A RISE OF 10.8% FROM THE REVENUE



In broad terms, we can point out the following factors:

- The Brazilian market's heavy influence in the positioning of groups and clear domination by bancassurance groups from Brazil.
- The negative effect of the Mexican peso's depreciation against the euro. One exception was the extraordinary growth of the group Inbursa, thanks to the renewal of a Damage

RANKING OF LOCAL INSURANCE GROUPS IN LATIN AMERICA IN 2009 TOTAL

RANKING 2009	GROUPS	COUNTRY	PREMIUMS (millions €)		% ▲	MARKET SHARE 2009 (%)	RANKING 2008
			2008	2009			
1	BRADESCO SEGUROS	BRAZIL	5.203	5.834	12,1	7,7	1
2	ITAÚ/UNIBANCO HOLDING	BRAZIL	5.035	4.741	-5,8	6,3	2
3	BANCO DO BRASIL	BRAZIL	1.523	2.370	55,6	3,1	5
4	PORTO SEGURO	BRAZIL	1.565	1.858	18,7	2,5	3
5	SUL AMÉRICA	BRAZIL	1.348	1.489	10,4	2,0	6
6	G. NACIONAL PROVINCIAL	MEXICO	1.555	1.417	-8,9	1,9	4
7	TRIPLE-S	PUERTO RICO	1.229	1.411	14,8	1,9	7
8	SURAMERICANA	COLOMBIA	811	1.143	41,0	1,5	8
9	INBURSA	MEXICO	682	1.143	67,7	1,5	9
10	MERCANTIL	VENEZUELA	645	936	45,1	1,2	—

Total of the top 10	19.596	22.343	14,0	29,5
Total for the sector	68.430	75.769	10,7	100

policy with Petróleos Mexicanos, carried out in February 2009 and lasting two years.

● A significant increase in premium volume in Venezuela led to two groups from that country joining the ranking. One must note the growing weight of the Venezuelan state in this sector as an insurer, through the companies Horizonte and Previsora (which it took control of in 2009) and as an insured, because of the high volume of insurance policies taken out by public-sector companies, especially in collective Health insurance.

NON-LIFE RANKING

The 25 largest insurance groups in the Non-Life sector in Latin America had nearly 25,000 million euros in premiums in 2009, a rise of 10.8%

from the revenue of the previous year. But the market share of these 25 groups has dropped six-tenths of a point as compared to the 2008 ranking. The fall of the Mexican peso against the euro and major growth in the Venezuelan insurance market, mainly in the Automobile and Health lines, are some of the factors that have influenced the evolution of the various groups and their position in the ranking.

After growing 26.3%, MAPFRE continues to lead the Non-Life ranking and accounts for 7.9% of the premiums in this sector of the market, one-tenth of a point more than in the previous year. As we already said, contributing to this result was a major rise in premiums by its units and the inclusion of revenue from Grupo Mundial, as a result of the agreement signed by both groups in late 2009.

The Liberty group registered important premium growth in Venezuela, its main market in Latin America, and went from third to second place in the ranking. The agreement signed by Itaú/Unibanco and Porto Seguro, which we mentioned earlier, caused the rise of Porto Seguro to third place and Itaú/Unibanco's decline to fourth. The Brazilian companies Bradesco and Sul América remained in the fifth and sixth spots, respectively. The biggest rise was that of the Mexican company Inbursa, which jumped eight rungs, thanks to its policy renewal in 2009 with Petróleos Mexicanos.

Finally, we should point out as news that two companies have joined the ranking for the first time, Sancor and Banco do Brasil, while Tokio Marine and Chubb are no longer on the list.

LIFE RANKING

The 25 insurance groups that make up the Life ranking for 2009 saw their revenue rise 15.8%, and account for 78.4% of Life premiums in the region, which makes for an increase of nearly two points compared to the 2008 list. The level of concentration of the top 10 groups increased by more than four points.

The top four spots on the ranking have not changed compared to the previous year, with



THE 25 INSURANCE GROUPS THAT MAKE UP THE LIFE RANKING FOR 2009 SAW THEIR REVENUE RISE 15.8%, AND ACCOUNT FOR 78.4% OF LIFE PREMIUMS IN THE REGION



Bradesco in the lead, followed by Itaú/Unibanco, MetLife and Banco do Brasil. The market shares of Bradesco and Banco do Brasil rose, while those of the other two declined. After completing its stake in Real Tokio Marine Vida e Previdencia, the Santander group rose three spots on the list to take over fifth.

As for the other two Spanish groups, MAPFRE continues to hold 10th place, with the same market share as a year earlier, while BBVA, which saw its Life premium volume fall 10.7 percent, slipped from sixth to 11th place.

RANKING OF MULTINATIONAL INSURANCE GROUPS IN LATIN AMERICA IN 2009 TOTAL

RANKING 2009	GROUPS	COUNTRY	PREMIUMS (millions €)		% ▲	MARKET SHARE 2009 (%)	RANKING 2008
			2008	2009			
1	MAPFRE	SPAIN	3.490	4.284	22,7	5,7	1
2	METLIFE	UNITED STATES	2.509	2.527	0,7	3,3	2
3	LIBERTY MUTUAL	UNITED STATES	1.839	2.317	26,0	3,1	3
4	SANTANDER	SPAIN	1.166	2.311	98,3	3,1	–
5	CNP	FRANCE	1.311	1.527	16,5	2,0	7
6	AXA	FRANCE	1.480	1.393	-5,9	1,8	4
7	ZURICH	SWITZERLAND	1.222	1.328	8,7	1,8	8
8	BBVA	SPAIN	1.377	1.278	-7,2	1,7	5
9	ALLIANZ	GERMANY	1.343	1.267	-5,6	1,7	6
10	HSBC	UNITED KINGDOM	1.084	1.216	12,1	1,6	–

Total of the top 10	16.821	19.448	15,6	25,7
Total for the sector	68.430	75.769	10,7	100

Insurance companies operating in Puerto Rico, most of which are units of U.S. groups, saw their positions improve thanks to growth in Health³ insurance. Triple S took over the health business of La Cruz Azul de Puerto Rico, and Cooperativa de Seguros de Vida transferred its Health insurance portfolio to MCS.

Meanwhile, Generali and ING saw significantly lower revenue. In the case of the Italian group this was because of lower Life premium volume at its Mexican unit, mainly in single-premium products distributed by banks. These products were the ones hardest hit by instability in financial markets. In the case of ING,

³ The main insurers in the Life and Health branch in Puerto Rico are mainly Health insurers.

the reason for the decline stems from the sale of its life annuity portfolio in Chile.

RANKING OF LOCAL AND MULTINATIONAL GROUPSIFE

The top five spots on the ranking of local groups are held by Brazilian insurers, mainly in bancassurance. Bradesco is still the leader, gaining market share on its most immediate competitor, Itaú/Unibanco. As for newcomers, we should mention the Venezuelan group Mercantil's replacing La Previsora.

MAPFRE continues to lead the ranking of multinationals in Latin America, followed by MetLife and Liberty. Fourth place is held by the Santander group, and another Spanish group, BBVA, holds the eighth spot. With Santander and HSBC on the list, eight of the top 10 multinationals established in the region are European groups. ■

responds to the sense of social responsibility which is a basic principle behind MAPFRE's business activities. It was founded in 1975.



The Insurance Sciences Institute of FUNDACIÓN MAPFRE was created to promote educational and research activities concerned with the world of insurance and risk management.

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ENGLISH APPENDIX