Gerencia de Riesgos y Seguros

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Reaction capability

For some decades now risk managers have been bent on designing models, if not to anticipate the unforeseeable at least to try to overcome catastrophes. But some accidents are hard to assimilate by any model, such as the earthquake, subsequent tsunami and severe nuclear accident in the Fukushima plant, which has devastated Japan's society and shaken the world's economy.

Its economic impact is still imponderable but the historical data to hand bear out the intuition of those of us who follow the news: the economies with the highest levels of per-capita income, education and financial resources get over catastrophes quicker. Japan has always been one of the clearest examples of this rule.

Nonetheless pessimism about the economic upturn runs alongside a stream of worrying news about the deterioration of the nuclear plant's reactors. Although it is still too early to anticipate the long-term effect, each bulletin about the increasing levels of radiation in the affected area seems to shake confidence in nuclear-power risk prevention. Nuclear power plants therefore run the risk of widespread rejection as an energy-generating option, reopening the debate about this source of energy.

All this spurs the ongoing debate about the growing need to combine the various energy sources and, in particular, to promote the development of renewable energy sources, a sector where Spain is playing a leading role as never before in any previous technology.

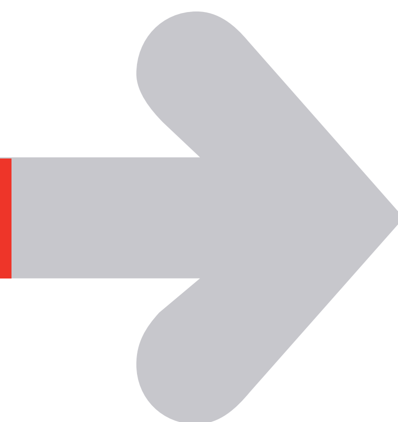
As professionals we have to react to these disasters by assimilating the lessons learnt and building up some basic principles that, together with a deserved dash of luck, will allow us to ride the hoped-for upturn and correct our weaknesses and reinforce our strengths.

The first of the three studies presents the thoughts of a State Insurance Inspector, who sets forth the need for a regulation to help financial institutions detect and prevent money laundering as a terrorism-funding subterfuge.

The second study is an excerpt from a book written from the academic vision of two Spanish university professors and published by FUNDACIÓN MAPFRE under the title *«El Análisis Financiero Dinámico como herramienta para el desarrollo de modelos internos en el marco de Solvencia II»* (Dynamic Financial Analysis as a tool for developing internal models under Solvency II). This book puts forward the advantages of Dynamic Financial Analysis (DFA) for analysing risks holistically and thus assessing the impact of the various business decisions on the solvency and profitability of an insurance company.

The last study analyses, from the viewpoint of Solvency II, the management of the risks of safety and the environment in the context of the integral management of a company's risks. In particular for the insurance sector it argues the need for unification of the nomenclature used.

Future PROSPECTS for the PREVENTION of MONEY LAUNDERING



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1 Introduction and current situation of the insurance market

The insurance market is now busily bringing its procedures into line with the new requirements not only of Solvency II but also a clutch of new legislation designed to make its component organisations more professional, such as the criminal liability of legal persons, in force since 23 December 2010, the upcoming legislation on packaged retail investment products (PRIPS), the future Directive on

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insurance mediation, payment services legislation, etc. All these measures pose a stern challenge for the industry and call for a smartening up of its managerial procedures.

The recently approved legislation on the prevention of money laundering and terrorist financing, developing the «third money laundering directive», is applicable to insurance companies and insurance brokers when operating with life insurance or other investment-related services and also to pension fund managers. It is now entering a new phase in terms of its implementation by the insurance market. The future development regulations will flesh out questions that are slightly woolly in the law itself and which impinge directly on the insurance sector's operational-, legal-, reputation- and underwriting-risks. These aspects of any company are directly bound up with Solvency II and the future approval of internal models. The legislation slows down the financial market with the introduction of new bureaucratic obligations, most of them useful, but all in urgent need of clearer and more detailed specification in the coming regulation to bring them into line with the real situation.

There is no longer any doubt about the need to develop such aspects as corporate governance, internal control, risk management and the internal auditing of sector companies to improve and streamline the management and control of the abovementioned questions. Supervision of insurance companies has shown up to now the following shortfalls:

- Failure to keep applicable legislation up to date or complete.

- Lack of a minimum internal control structure for the development of legally established obligations.
- Inadequate procedures manual.
- Lack of a specific client admissions policy.
- Lack of any tools for dealing with politically exposed persons (PEPs).
- Lack of any definition and development of procedures (literal transcription of the obligations to be met).
- Lack of any information and management tools for pinpointing clients of a higher risk before accepting them.

THE FUTURE DEVELOPMENT REGULATIONS WILL FLESH OUT QUESTIONS THAT ARE SLIGHTLY WOOLLY IN THE LAW ITSELF AND WHICH IMPINGE DIRECTLY ON THE INSURANCE SECTOR'S OPERATIONAL-, LEGAL-, REPUTATION- AND UNDERWRITING- RISKS

Some references to fines imposed on financial institutions can be found in the Judgement of 17 July 2009 of the *Audiencia Nacional* (National Appellate Court) (JUR\2009\362506), the Judgement of 3 June 2008 of the *Audiencia Nacional* and the Judgement of 23 April 2010 of the *Tribunal Supremo* (Supreme Court), the Judgement of 30 April 2007 of the *Tribunal Supremo* (RJ 2007\5807) and the Judgement of 9 October 2008 of the *Audiencia Nacional* (JUR 2008\367116).

The main obligations laid down by the current legislation for the insurance sector are the following:

- Formal identification of clients.
- Real identification of the data subject.
- Accreditation of the professional or business activity of the clients and the purpose and type of the insurance relation.
- Systematic reporting and communication of suspicious signs.
- Setting up a liaison body with SEPBLAC.
- Record keeping.
- The report of the external expert.
- Training.
- Other questions.

The due diligence obligations of the covered subject in the insurance market break down as follows:

BY CLIENT:
– LEGAL
– EXCEPTION

BY SUM:
– 1000 A YEAR
– 2500 LUMP SUM

CLIENT STANDING ORDER …

COMPLEMENTARY PENSION SCHEMES

SCARCE RISK
1000 EUROS
INFORMATION

LIFE INSURANCE

– PEPs (…)
– DISTANCE SELLING (…)
– LONG TERM SAVING
Over 1000 euros a year
Over 2500 lump sum premium
NO STANDING ORDER
(…)

NON LIFE

In this map the green area is excluded from the scope of the Act, the brown part comes under the simplified due diligence procedures, while the light blue area comes under the full and sometimes enhanced due diligence procedure.

2 Grey areas in the application of the legislation and hopes for the coming regulation

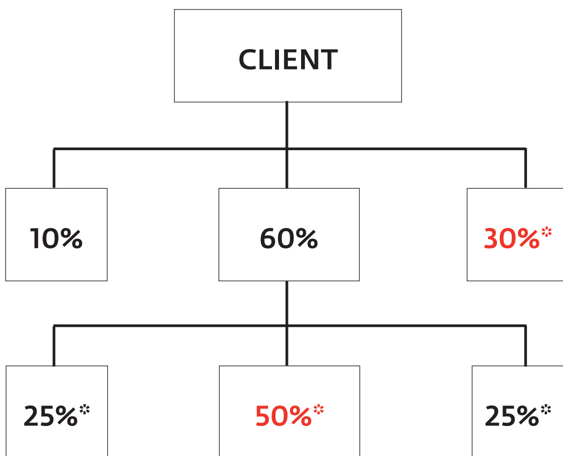
Although the Act in theory aims to explain the anti money laundering procedures, in practice it raises considerable doubts and confusion about such questions as the identification and verification of the client under article 3 of the Act, how to deal with politically exposed persons (PEPs), updating of existing portfolio information or distance selling. The main questions posing these doubts in practice are the following:

–Processing authenticated documents for identification and verification of article 3:
Here there are several woolly areas that will hopefully be cleared up by the regulations:

- Specifying the difference between the identification of article 3.1 and the verification of article 3.2. What does it mean to identify someone? Must a copy of the National Identity Document (DNI in Spanish initials) be kept in digital medium or the like? In any case or only with the verification? Which documents are deemed to be authenticated? Act in hand, the sense of article 3.1 would seem to refer to visual identification and checks rather than keeping identity documents, whereas the verification of article 3.2 refers to the products to which simplified measures are not applied and therefore calling for conservation and verification of the identification document. There is a doubt in the insurance market, however, about whether a copy needs to be kept in any case. This would seem to be fairly reasonable and necessary to vouch for the fact that the identification has actually been made.
- Clarification about whether or not it is necessary to ask the client for repeat accreditation of his/her identity post-transaction for the mere fact, for example, of his/her DNI having run out of date. This would entail a human and economic cost without hardly inputting any added value to the prevention of money laundering, which is, in the final analysis, what the Act and sector seek.

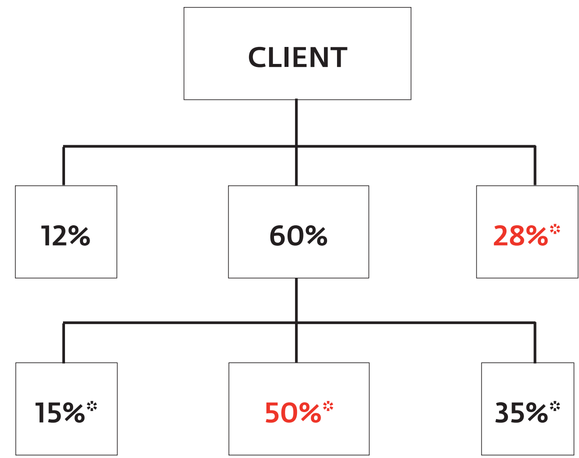
- How to deal with an existing portfolio containing standing-order premium-payment arrangements set up when the policyholder's identity was not originally checked under the exception provided for by the law at that time.
- Problems in relation to distance marketing and identification, to be dealt with below.

–Ultimate beneficial owner: How can the real identification of the client be effected? Here there are no uniform criteria about how to take into account the participation percentages. Take the following example[1]:



In the first example it will be those that top 25% directly or indirectly. The direct 30% stake and the 50% share of the 60%= 30%. In short, natural persons in red.

[1]Those marked with an asterisk are assumed to be natural persons



In the second example the percentages are not pooled. Hence the natural person who holds 35% of the 60% has a 60% share for the purposes of the law. An investigation would therefore have to be made of the property-holding structure. I put forward a couple of suggestions, not meant to be at all exhaustive, about what the law's criteria should be in terms of delimiting the covered subject's tasks.

–Study of life insurance: It is now a bit late to exclude insurance policies of this type from the obligations of the Act. Probably it should never have been included in the first place, since laundering money through products of this type, where the mean premium is about 94 euros and the death of someone is a prerequisite, would seem to be a bit tricky. A combination of the articles of the Act might mitigate this due diligence, applying, on the one hand, simplified due diligence measures (limiting the identification obligation of article 3.1) to contracts of this type, when the premium is over 1000 euros, and, on the other,

THE ACT RAISES CONSIDERABLE DOUBTS AND CONFUSION ABOUT SUCH QUESTIONS AS THE IDENTIFICATION AND VERIFICATION OF THE CLIENT UNDER ARTICLE 3 OF THE ACT, HOW TO DEAL WITH 'PEPS', UPDATING OF EXISTING PORTFOLIO INFORMATION OR DISTANCE SELLING

excluding the application of any due diligence measure under article 10.3 for all life risk contracts with a premium under 1000 euros, i.e., the vast majority. Thus, article 10.3 would exclude life insurance policies worth under 1000 euros, overriding application of the simplified measures of article 10.1.a). Another possibility would be to include certain life insurance products, whatever may be their value, in simplified measures, such as mortgage linked insurance, though the usefulness of this procedure for anti money laundering purposes would be at best dubious.

– **Standing order:** Under the previous law there was no need to identify the client in this case. Under the present law, however, the payment of life insurance premiums by bank transfer, standing order or registered cheque from a credit institution based in Spain, in the European Union or in equivalent third countries are exempted only from the obligation of ongoing monitoring of the business relation. This means that the organisations benefiting therefrom (about 85% of the transactions are effected by standing order) will be bound to bring their portfolio information into line with the law within five years. This measure has a high human and technological cost deriving from a new legal obligation applicable to past economic events, as we will see later.

– **Application of the measures to existing clients:** It could turn out to be very difficult and time consuming to cull all the necessary

information on savings products, for example over 40 years, when the insurance company has practically no contact at all with the policyholder. Take the case of savings policies taken out 25-30 years ago or policies that did not initially form part of my portfolio, in which cases the insurance company's biggest concern will be to ascertain who will be the beneficiary before the benefit is paid out.

– **Proxy policyholder:** As well as the special treatment of article 10.1.c) for outsourced group insurance, there is also the case of non-pension-based group insurance in which the policyholder is, for example, a financial institution or travel agency, etc., marketing life insurance. Take the case, for example, of life insurance policies tied in with the taking out of a salary account, credit cards or travel insurance covering accidental death. The idiosyncrasy of these insurance arrangements is that the policyholder is different from the insured and beneficiary. In some cases the insurance cost is taken on by the policyholder as a «gift»; in others the insured defrays the cost, albeit with another person as the proxy policyholder. Some

JUST AS THE ACT PROVIDES FOR THE CREATION OF CENTRALISED PREVENTION BODIES FOR COLLEGIATE PROFESSIONS (ARTICLE 27), SOME SORT OF SOLUTION COULD HAVE BEEN SOUGHT FOR DEALING WITH 'PEPS' GLOBALLY, GREATLY CUTTING DOWN THE COST THEREOF

markets have tried to cater for this situation by making a legal distinction between the insurance subscriber (the financial institution taking out the group insurance) and the insurance policyholder, corresponding to each one of the insureds and holding hold tenure over the policy and the corresponding individual insurance certificate. It therefore has all the policyholder's rights and obligations as recognised under law. From the point of view of the prevention of money laundering, however, this begs two questions. Firstly, whether the thresholds for application of simplified measures (1000 and 2500 euros) should be applied in relation to each insured. Secondly, whether the measures are applied to the «subscriber» e.g., financial institution or in view of this particular feature in group insurance, to each of the insureds, since under certain insurance arrangements it is they who make the payment even though another person is acting as proxy policyholder (the financial institution, travel agency, etc).

–**Covered subjects (subjects bound under the Act):** Article 2.1.b) lays down the possibility of excluding some covered subjects of the insurance sector. Take the example of mutual insurance companies that have not applied for increased benefits. Although this would limit money laundering possibilities it is unlikely to be provided for in the law on the grounds that it would «open a breach» in the prevention of money laundering and terrorism funding from the covered subject point of view. The Act already allows for diverse simplified measures to soften the brunt. Another moot point here is the possible simplification or exclusion of the internal control measures of article 26, which might affect, depending on size, plan managers and insurance brokers. This is unlikely to hold water either. Although plan managers do involve decentralised management of complementary pension products, there would be no input of value from exclusion from the obligation of keeping an anti-money laundering manual, client admission policy, etc. Quite the contrary. Firstly, there are already simplified measures for complementary pension schemes; secondly, there would still be a need for keeping a manual recording such matters as the organisation, the treatment of PEPs or the operation of distance business; thirdly, even though there are almost pure managers with very few employees, there are over 1500 insurance brokers working with only two or three employees who nonetheless clock up commissions worth about 70,000 euros and no claim is made for their exclusion since this would be discriminatory *vis-à-vis* the large brokers. In short, it would seem that the obligations of article 26 should be applied across the board to all covered subjects of the insurance market to ensure evenhandedness and to be able to continue developing internal control legislation for the insurance and pension plan sector. Lastly, we need to bear in mind here the latest judgements recording the use of pension schemes as yet another money laundering tool (E.g.: Judgement of the *Tribunal Supremo* 1345/2009, 29 December, Judgement of the *Audiencia Provincial de Cantabria* (Cantabrian Provincial Appeal Court) 1/2010, 18 January).

–**Accreditation of the client's professional activity:** The market will have to get used to compliance with this requisite in the marketing of insurance products. Policyholders are often loathe to come up with this information, for example certain executive policies, but they will have to get used to it in the short term, helped by the whole set of sector companies. All of them, either through direct management

or through their various outlets, are now bound to ask for this information under a global market agreement to ensure a level playing field for all and head off any «drain» of clients to defaulting companies. Companies, regulators and supervisors will all have to work together to change consumer perception and establish this routine in policy contracting procedures.

–**Purpose and type of business relation:** A Collaboration Agreement is needed between insurance companies and the General Social Security Treasury (*Tesorería General de la Seguridad Social*: TGSS) on the assignment of information on professional activity. This would be similar to the collaboration agreement taken out on 17 January 2008 between the Directorate General TGSS of the Ministry of Work and Social Affairs and the Spanish Banking Association (*Asociación Española de Banca: AEB*), CECA (Spanish Confederation of Savings Banks) and the National Union of Credit Cooperatives (*Unión Nacional de Cooperativas de Crédito*).

–**Liability and supervision agreement between covered subjects through subsidiaries and associates:** The conclusion of a written agreement between an insurance company and an Associated Bank-Insurance Operator (whether the credit institution itself or one of its subsidiaries or investee companies) has to meet the requisites laid down in article 8 of Act 10/2010 in terms of the application of due diligence measures by third parties. This article speaks of a «written agreement between the covered subject and third party». Nonetheless, several forums have voiced the obligatory nature of these agreements between two subjects bound under the Act. From one point of view this would be logical since the end in view, from the risk point of view, is to establish where the buck stops liability wise, in this case the insurance company and the credit institute vis-à-vis the Associated Bank-Insurance Operator. On the other hand, however, it balks operations, slowing down the agreements with the indispensable distribution outlets for the insurance sector. Not only does it duplicate the existing contractual relation by means of an agency contract, joint venture, etc. with the Associated Bank-Insurance Operator but also adds on another relation for regulating the liabilities deriving from any breach of the Act. This problem could be solved by application of the Private Insurance Mediation Act 26/2006 (*Ley de Mediación en Seguros Privados*). Furthermore, it is also clear that, despite using distribution third parties (other than brokers, who are independent subjects directly bound under the Act), the insurance company will retain full liability. Quite another question is the marketing of pension plans, which stray beyond the scope of the Act, as already pointed out.

–**Discretionary application of the due diligence in terms of the client concerned (article 7):** This article, as worded, grants discretionary powers to the covered subject in terms of applying the due diligence measures. It lays it down that the covered subjects «will be entitled to determine the degree of application» of the measures. Perhaps the regulation should lay down some limit, otherwise the company might cunningly word its client admission policy to justify a zero application of the measures, i.e. no measure at all. It would seem obvious that a lower threshold to this leniency has to be set in terms of obligatory compliance at least with the identification requisites of article 3.1.

–**Products with low money laundering risk:** A saving products category could have been drawn up, subject only to simplified measures,

although the sheer diversity of these products might make this difficult. Active collaboration by delegation with the insurance supervisor, along the lines of some South American countries, through a circular, order or other legal instrument, could prove to be a good development mechanism in the future.

–**Enhanced due diligence measures:** Certain types of products, such as unit link or some of those already categorised as prone to money-laundering use, could be subjected to higher control measures, just as others only have to abide by simplified due diligence measures.

–**Distance selling:** Remember Alex de la Iglesia's words in the Goya prize-giving ceremony, claiming that internet is not the future but the present. How true those words are. The Act lays down enhanced or strengthened due diligence measures for distance business. But what happens when we take out a life insurance or other policy on the net? Which arrangement of the Act is overriding here? The application of simplified or enhanced measures? At present this is not a burning issue since most of the online platforms currently existing run alongside the normal telephone procedures, sending the potential policyholder the documentation by mail and asking for the necessary information. However, this is a crucial area because it will not be long before the market really taps into the social networking services to set up genuine online sales platforms for financial products of all types. This will beg many questions about data processing, use of the electronic signature, management of the obligations laid down by this Act and other laws for the covered subject. Now is therefore the moment to deal with the loopholes in this law, where certain products are subjected to simplified measures for face-to-face selling and enhanced measures for distance selling. I have already pointed out elsewhere the Act's faintheartedness in trying to control certain life insurance products with this whole array of obligations. The Act chimes in with the European standard, asking for use of the electronic signature, etc., but due arrangements really need to be made now for when distance selling becomes the mainstay of insurance business in the not too distant future. The exception on grounds of the nature of the product should override enhancement of measures due to the distribution outlet used.

–**Reinsurance:** The reinsurer-insurer relation is outside the insurance contract and ipso facto the application of measures such as KYC (Know your customer). In this case it is not a question of prevention by the covered subject but rather the use of reinsurance companies for laundering money, which would be dealt with as a criminal procedure. There are some signs, especially in the American market, of connivance between insurers and reinsurers in carrying out certain transactions outside market prices.

–**PEPs:** I believe that this obligation should be dealt with in its own right, apart from the other obligations of the Act. Compliance with PEPs should be distinguished from compliance with other obligations due to its cost and idiosyncrasy. This will be dealt with below.

NOW IS THEREFORE THE MOMENT TO DEAL WITH THE LOOPHOLES IN THIS LAW, WHERE CERTAIN PRODUCTS ARE SUBJECTED TO SIMPLIFIED MEASURES FOR FACE-TO-FACE SELLING AND ENHANCED MEASURES FOR DISTANCE SELLING

3 PEPs and identification of the client

The covered subject's database can receive feedback from several sources:

- –Lists drawn up by the group companies, or
- –Deriving from agreements as per article 33 of the Act,
- –List of the Foreign Assets Control Office (*Oficina de Control de Activos Extranjeros*),
- –List of the EU, including members of terrorist groups.

It also seems that access will also be needed to the PEPs database of one of the service providers, even though the law does not explicitly spell out this obligation. These have now been operating in the market for some years and are now entering the insurance market in response to the obligations laid down in the Act. The problem arises because the Act was drawn up at breakneck speed to comply with the Directive's requirement of contracting these services tendered by two or three providers. These providers turned this situation and need to their own account; indeed it seemed the Act had «set them up in business», as one sector colleague put it. The fact is that, under the insurance legislation, the companies had no such obligation; moreover these service providers were already up and running in many other sectors before made obligatory under the Act. It is therefore not the provider's fault but rather the current wording of the Act, which prompts companies to wonder why on earth they should defray such a proportionately high cost just to comply with legislation when it does not even affect their business directly. At most it applies only to part of their business. Neither can they even trust in the total reliability of the service provider since the Act includes persons such as the «next of kin» as PEPs. It is hard to justify this when we are talking about thousands of covered subjects in the insurance market (brokers, insurers, management bodies) and the overall cost runs to several millions of euros without any very practical preventive purpose other than deterrence. In fact, I do believe deterrence to be the main aim in view of the growing number of corruption cases worldwide, the growth of underground economies, fiscal fraud and opaque financial structures.

It is clear that any PEP who wishes to «launder money» will use front companies or another type of interposed organisation rather than waltzing in the front door and paying for products in cash. Maybe this is an extreme case but there does need to be a principal of proportionality here between due enforcement of the law by the covered subject and, where necessary, application of any penalising power (Judgement of the *Tribunal Supremo, contencioso-administrativo* [judicial review], 21 November 2007: «…any fines or penalties imposed by the authority must bear due proportion to the ends in view. This involves striking a due balance between, on the one hand, the content and purpose of the decision taken by the Authority and, on the other, the substantial forfeiture of rights by the penalised citizen …») . For instance, just as the Act provides for the creation of centralised prevention bodies for collegiate professions (article 27), some sort of solution could

IT IS CLEAR THAT ANY 'PEP' WHO WISHES TO «LAUNDER MONEY» WILL USE FRONT COMPANIES OR ANOTHER TYPE OF INTERPOSED ORGANISATION RATHER THAN WALTZING IN THE FRONT DOOR AND PAYING FOR PRODUCTS IN CASH

have been sought for dealing with PEPs globally, greatly cutting down the cost thereof. Under the present situation the companies' only options seem to be either to foot the bill for contracting a provider or hope not to be supervised, because the penalising system under the current Act is ostensibly complete, harsh and with no room for appeal.

The situation is trickier in the case of brokers, as a result of the sector's inexplicable lack of concentration. More than one with a very small life portfolio will be forced to decide whether to continue with it, become an associated agent or seek an «elder brother» and work as an auxiliary in this class of insurance. The consultancy and assistance agreements reached to date come across as a necessary but not sufficient condition for compliance with the law.

The Act brings such a varied trawl of subjects into the concept of covered subjects that it becomes an almost impossible proposition to work out their aetiologic relationship and fit them into the legislation. As new legislation crops up there is seen to be a need for greater efficiency and a more professional attitude among the organisations trading in the financial markets. This impression is unanimous among all market stakeholders, regulators themselves and all parties involved in any way. On certain occasions, however, the legislation separates the regulation from reality and undermines its usefulness, courting rejection from, among others, the financial sector. The prevention of money laundering and terrorist financing should try to take into account the particular circumstances and idiosyncrasies of each market the different covered subjects form part of, thereby achieving an overwhelming acceptance on the strength of its usefulness. To do so it needs to specify certain aspects that are difficult to apply in the day to day operations of the covered subject, otherwise it runs the risk of turning a useful law into an overly confiscatory mechanism (Judgement 1066 of the *Tribunal Superior de Justicia* [Higher Justice Court] of Madrid, lowering the fine for breach of the law by a natural person from 242,190 euros to 1200 euros) that is widely rejected. I trust that the regulation or other future legal instruments of at least equal ranking will allow for the particular traits of the insurance sector.

Finally, to reiterate the particular importance of this legislation, in part, in relation to compliance with national and international scope (cross border Situations) but also compliance in relation to other legislation such as the criminal liability of legal persons (art.31.1.bis C.P.) among others, for committing the money laundering crime, novelty in the Spanish legal system, which includes the possibility of committing the reckless offense (including employees) by neglecting certain obligations under the Act, both the insurer, as the distribution channels, which is responsible. An Act that will be talking about in the immediate future. ❙

What is Dynamic Financial Analysis

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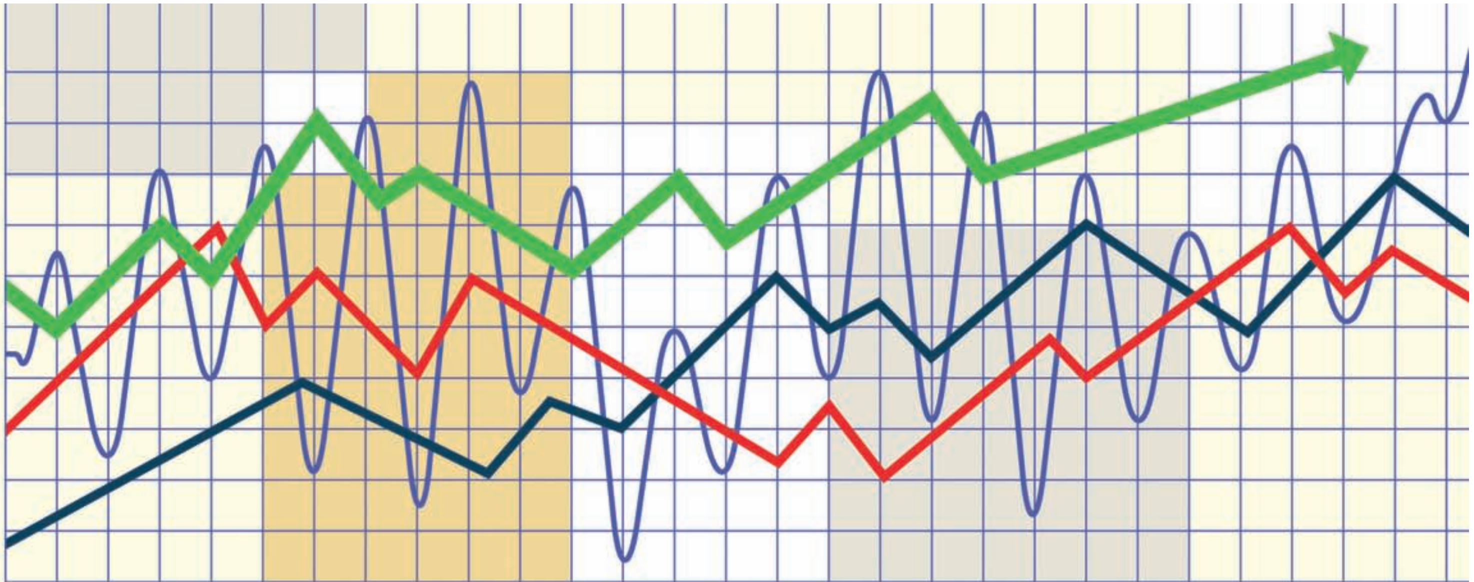
The imminent introduction of Solvency II will drive the application of internal evaluation and risk management models. Dynamic Financial Analysis (DFA) is becoming an ideal technique for the development of internal models. This is the name used to embrace the stochastic simulation models in insurance business that enables the evaluation of the impact of strategic decisions on the solvency and profitability of the company.

This work originates from «The Dynamic Financial Analysis as a tool for the development of internal models in the context of Solvency II» edited by Fundación Mapfre, number 153 of the Fundación collection of Notebooks. This book is the result of the work of those attending the 2007 Risk and Insurance Scholarship.



Traditionally, risk control and solvency analysis have constituted one of the principal concerns of insurance companies. The use of internal models to carry out this work has stimulated interest in the Dynamic Financial Analysis (DFA) models. Although DFA can be used to determine the capital needs for solvency purposes, its scope of application, amongst others, extends to risk analysis, investment strategy evaluation, product appraisal and the analysis of results. The main advantages of the internal models are that they are more flexible than standard models and can

DFA IS THE SIMULATION PROCESS OF INSURANCE ACTIVITY IN AN INTEGRATED WAY BY MEANS OF STOCHASTIC MODELLING OF DETERMINED VARIABLES IN THE EVOLUTION OF ASSETS AND LIABILITIES OF THE COMPANY WITH DIFFERING PURPOSES

provide a more reliable reflection of a company´s business which enables better management.

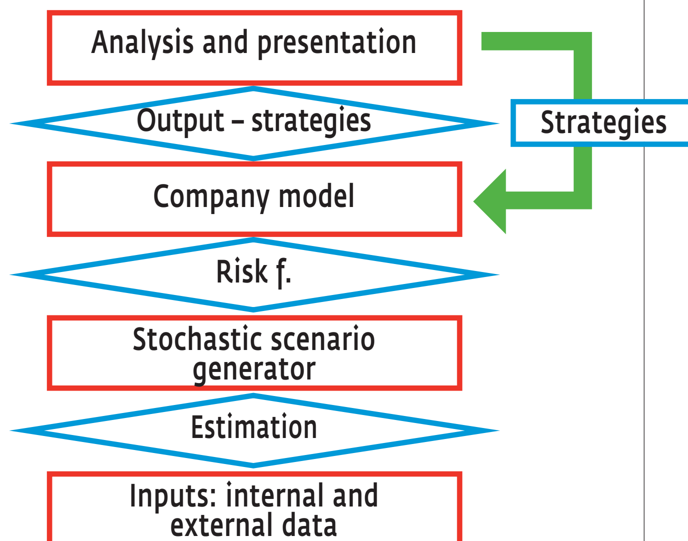
Dynamic Financial Analysis (DFA)

In classic actuarial analysis, technical and financial decisions were analyzed independently. As opposed to this method, DFA undertakes an integrated analysis of both activities. The importance of integrated models resides in the fact that both decisions are interrelated from the point of view of the organization. Therefore, decisions that might be taken in the context of a business unit, when evaluated in isolation, might not be the most appropriate for the company as a whole.

There are many definitions that have been attributed to DFA since, as Kaufmann *et al.* (2001) affirms, it is impossible to define or to describe only one DFA methodology. D'Arcy *et al.* (1998) indicates that DFA is a process that examines the financial situation of an insurer over the course of time, taking into account the interrelations between the different parts and the stochastic nature of the factors that can influence the results. We consider that DFA is the simulation process of insurance activity in an integrated way by means of stochastic modelling of determined variables in the evolution of assets and liabilities of the company with differing purposes. In this way, a DFA model[1] uses the Monte Carlo simulation techniques to predict the company´s results in the light of a group of future scenarios and shows how those results can be affected by changes in the internal and/or external conditions of the company.

In general, the DFA models tend to be processes of a generic structure that integrate the following activities (see, for example Blum and Dacorogna, 2004) (Illustration 1).

[1] The DFA models are generally classified as stochastic and deterministic models.



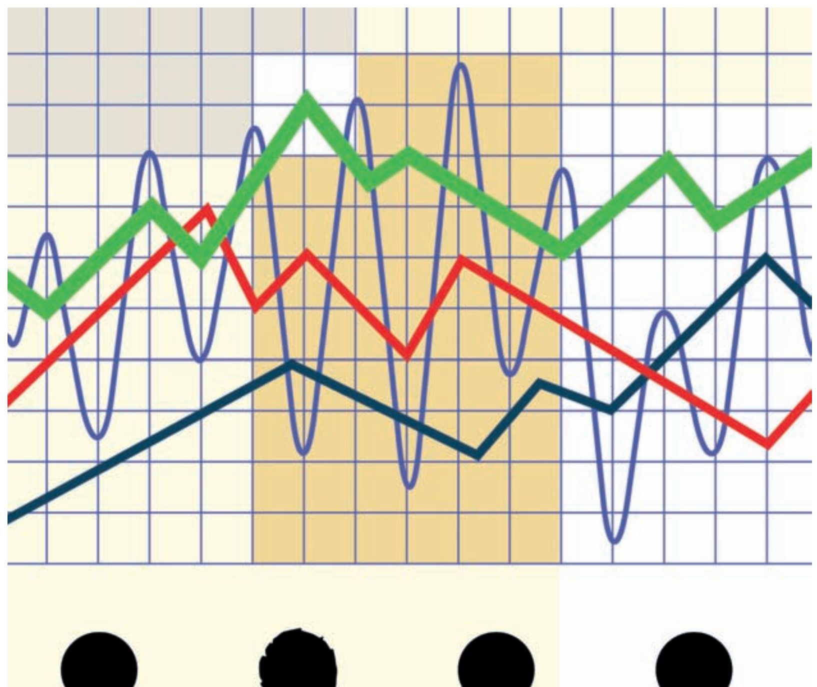
The generic structure of a DFA model.

The company must identify the main risks that affect the future financial situation of the company. Once identified, it is necessary to incorporate the model inputs, which is the set of company internal data and the environment in which it operates. These inputs are necessary for the estimation or calibration of the parameters of the stochastic models used to carry out the projections. The values of the parameters must allow building consistent and realistic scenarios, for which it is normally necessary to establish hypothesis about the future behaviour of the variables. Once the parameters of the model have been specified, they must be validated. One method frequently used for this task is back testing.

An essential aspect of the DFA scenarios generator is that the projected paths must not be generated in an isolated way, but they must reflect the relationship between the different variables used in the model. The company model takes into account the composition of the portfolio of assets and liabilities and enables the evaluation of the behaviour of the insurer in the context of the simulated scenarios.

The output of the model will depend on the objective for which it is used, but when the objective is the analysis of the risk, the economic surplus needs to be determined. The results obtained by the model must be analyzed, for which it is common to put them together into different measurements of profitability and risk. As a result of this process, the company can analyze the risks, evaluate strategies or determine the capital necessary in these simulated scenarios. If the results for any scenario are not acceptable, the causes or risk factors that have motivated them must be identified. A positive consequence of this process is that it is useful to establish which are the risk factors or scenarios that provoke a larger number of unacceptable situations.

AN ESSENTIAL ASPECT OF THE DFA SCENARIOS GENERATOR IS THAT THE PROJECTED PATHS MUST NOT BE GENERATED IN AN ISOLATED WAY, BUT THEY MUST REFLECT THE RELATIONSHIP BETWEEN THE DIFFERENT VARIABLES USED IN THE MODEL



THE DYNAMIC DFA MODELS INCORPORATE CONDITIONAL DECISION RULES, PROVIDING THEM WITH ARTIFICIAL INTELLIGENCE

Also, there are several statistical methods that help to determine the effect of different individual variables on a target variable, facilitating the identification of the explanatory factors of the results of the model.

In order to analyze the output of a DFA model correctly, it is also necessary to carry out an analysis or sensibility test. The objective is to examine how the original results react to changes in the initial hypotheses or parameters. This way, one can check that the results obtained in the simulation are robust and not just the results of the hypotheses and parameters used. The sensibility tests are normally completed with the analysis of stress scenarios (stress testing), where the resistance of the company can be verified in the light of extreme changes to certain variables.

Once the outputs have been analyzed, a report can be prepared for the company´s management or governing body. A summary of the information produced by the model should be contained in the report so that the most suitable strategies can be identified, enabling actions that will achieve results in line with the company objectives.

Incorporation of the strategy in dynamic form

The dynamic DFA models incorporate conditional decision rules, providing them with artificial intelligence. The reason for this inclusion is the theory that management can react to its environment by reviewing strategies when necessary and not implement its business plan in a passive way during the model´s projection period. Formally, the rules of decision are implemented via algorithms that do calculations for some model variables according to the values obtained in previous periods or the values predicted in the future. In this way it attempts to simulate the future reaction of the company (evolution of the strategies) to the specific conditions simulated during the projection period. D'Arcy *et al.* (1998) indicate the advisability of incorporating certain strategic decisions into the models but they do not recommend incorporating all the decision making processes into the model so that the effect of different scenarios can be analysed.

Uses and users of DFA

In this section we describe the multiple uses attributable to the DFA technique. The Casualty Actuarial Society (1999) provides a list of potential uses when it states that DFA provides management with useful information for making decisions in the following areas:

1. Evaluation of the business plan. DFA models can be used to study in depth the causes for which the company´s financial objectives have not been met.

2. Marketing strategy (product and market development). DFA can provide a base for policy rating and/or explore the possible financial effects that new markets and products will have on the financial results of the existing products and markets.

DFA CAN BE USED TO IMPROVE THE COMPANY'S UNDERSTANDING OF COSTS, ADVANTAGES AND RISKS ASSOCIATED WITH CHANGES IN THE CLAIMS MANAGEMENT PHILOSOPHY FOR THE INSUREDS

3. Claims management. DFA can be used to improve the company´s understanding of costs, advantages and risks associated with changes in the claims management philosophy for the insureds.

4. Determining the capital necessary for the company. Capital sufficiency normally refers to the company´s ability to pay all its potential obligations. Historically, companies have fixed their capital by means of simple formulae based on premium ratios or reserve ratios and do not take into account risks faced by the companies. DFA is able to quantify better the level of capital necessary to support the risks of the business.

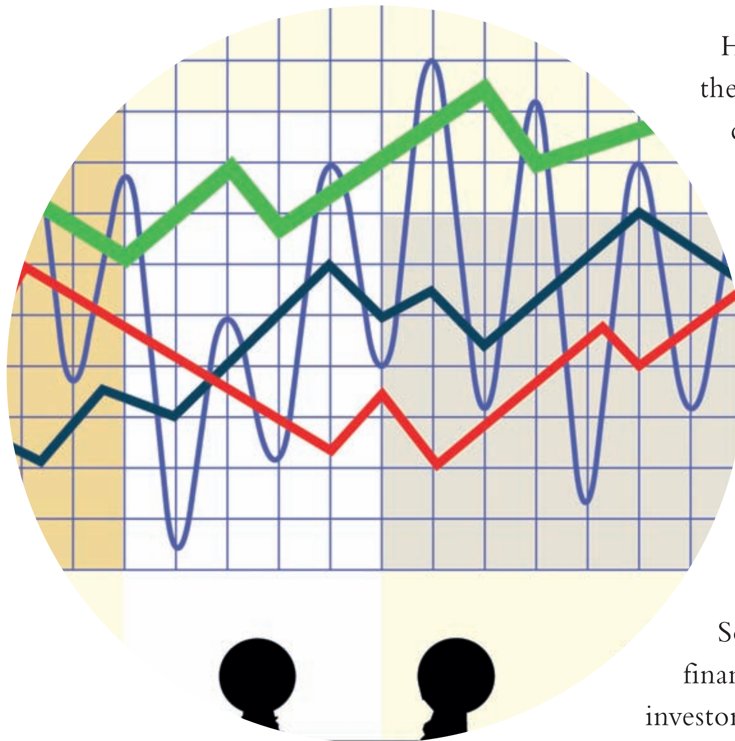
5. Allocation of capital over lines of the business. DFA permits an evaluation of the risks and profitability of the different

THE RISK AGENCIES RECOGNIZE THE IMPORTANCE OF RISK MANAGEMENT TECHNIQUES SUCH AS DFA. A COMPANY THAT ANALIZES ITS ECONOMIC DECISIONS BY MEANS OF DFA TECHNIQUES MAY OBTAIN A MORE FAVOURABLE RATING

operative divisions of a company and, consequently, allocation of capital can be made according to the value assigned to the risk borne by the company.

6. Liquidity analysis. A DFA model can help a company to determine the level of short-term funds that may be necessary depending on the volatility of the future cash flow.

7. Reinsurance structure or strategy. According to Bohra and Weist (2001), reinsurance analysis is based on examining the relation between profitability and the risk associated with different reinsurance structures. The key question is the risk tolerance or risk aversion of the buyer since, generally, the less reinsurance the greater the profitability, but also the risk. DFA can help to answer questions as to the type of reinsurance to be bought, the levels of retention or limits, amongst others.



8. Analysis of the investment strategy. DFA can analyze different asset strategies and observe the influence on the long-term financial results, helping companies to determine the optimum strategy appropriate for the risk profile.

9. Credit rating improvement. The rating agencies recognize the importance of risk management techniques such as DFA to the extent that they provide the necessary tools to obtain an understanding and quantification of the company´s risk exposure. A company that analyzes its economic decisions by means of DFA techniques may obtain a more favourable rating.

10. Analysis of merger and acquisition opportunities. By using DFA models, it is possible to quantify the acquisition price of a possible corporate operation as a function of the value created by the new company.

Having looked at the possible uses of the DFA technique, it is useful to determine who the potential users of these models are. Blum and Dacorogna (2004) recognize insurance and reinsurance companies as possible users, for the purpose of evaluating business plans and product development, and regulatory bodies and rating agencies, who use DFA to analyze solvency and liquidity. To the aforementioned entities, The Casualty Actuarial Society (1995) adds investment banks, financial intermediaries, institutional investors and financial analysts.

Conclusions

The need to measure the risk to which an insurance company is exposed has been promoted recently by the competitive environment in which the activity is undertaken, the technological and financial innovations, the current volatile nature of the markets and by the imminent introduction of the new regulation on capital known as Solvency II. The main advantage of DFA is that it adopts an integrated analysis of assets and liabilities that can be used for different purposes, amongst which one should highlight the fixing of capital levels adjusted to risk and the evaluation of the strategies in the light of changes in the environment. In this way, and at all times, the company is aware of the risk that it takes on and the necessary capital requirements to respond to that risk. Therefore, the company will be able to take action to situate the business within the desired risk level and to anticipate the effects of the strategies carried out.

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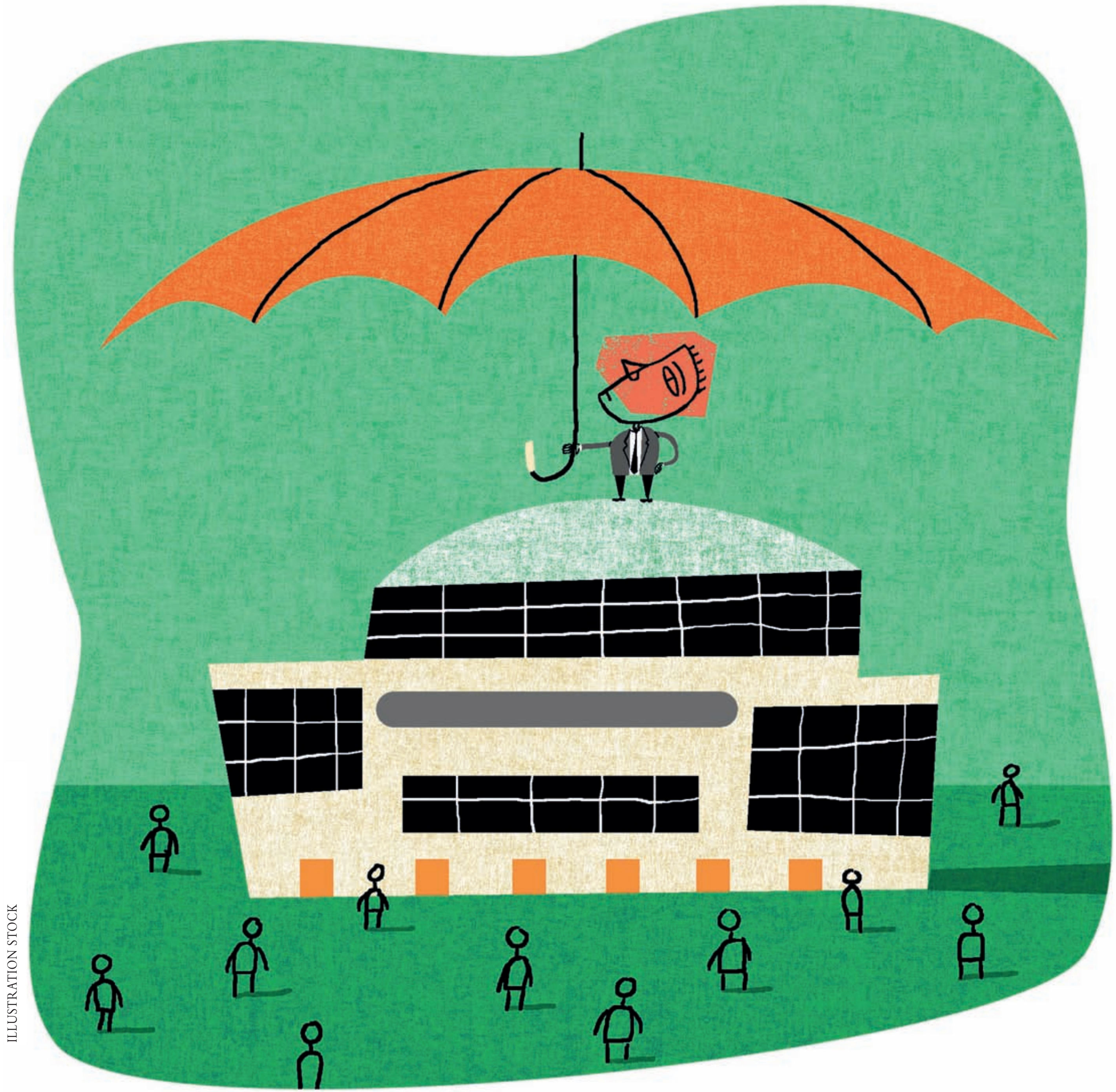


ILLUSTRATION STOCK

Safety and environmental risks

An approach to their *Analysis* as *Operational Risks* in the light of SOLVENCY II

JOSÉ MARÍA CORTÉS SAAVEDRA
Safety and Environment
MAPFRE

We are witnessing increased concern over the control of risks of all kinds and in all fields. The era of crisis which we are living increases this need for control, without forgetting other fatefully sad and topical events such as terrorist attacks or natural disasters. The common denominator for all of them is that they have provoked serious and often irreparable damage against which preventative measures had not been taken, at least not correctly.

Certainly, concern for risk is not a new attitude. It could be said that it is inborn in the human being and, consequently, in all of their activities. But what can be considered to be a new phenomenon, undoubtedly fostered by the circumstances to which we have referred, is the increasing level of this concern, both in intensity

and in extension, with regard to all possible risks. Together with this concern, there is a growing perception of the need to apply scientific and rationalized procedures, in an integrated way, to control the risks.

In consequence with the above and with the objective, amongst others, of achieving appropriate and effective management of all the risks that could affect to the banking sector, the Agreements of Basel[1], were enacted, as well as the EU Directive Solvency II[2], for the insurance sector.

In this context, it is the intention of this paper to focus on the analysis of safety and environmental risk management within the framework of a company´s integrated risk management in general, concentrating on the insurance sector within the context of Solvency II.

SOLVENCY II AND THE OPERATIONAL RISK

Solvency II, like Basel, leaves no doubt as to the need to manage and to control all risks, «present and future», to which the business could be exposed. It is a comprehensive approach, that is to say, it is necessary to control all risks, regardless of their nature.

On the other hand, in these Directives, great importance is attached to the operational risk[3], within the total risks to which companies can be exposed. Analyzing what is established under Solvency II in this respect, the importance attached to the management of these risks can be appreciated.

It is very well known that the level of efficiency and the model adopted for risk management will directly affect the minimum capital requirements for both insurers and financial institutions.

Thus, one of the main objectives that Solvency II brings is the development of a new system that

[1] Directive2006/49/EC, of 14 June 2006, on the capital adequacy of investment firms and credit institutions, the 2004 Basel New Capital Requirements Directive and Directive 2006/48/EC of the European Parliament and of the Council of 14 June 2006 relating to the taking up and pursuit of the business of credit institutions (recast). In September,2010, the Basel III agreement was reached, which hardened the capital requirements

[2] Directive 2009/138/EC ,of 25 November 2009, on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II).

ONE OF THE MAIN OBJECTIVES THAT SOLVENCY II BRINGS IS THE DEVELOPMENT OF A NEW SYSTEM THAT ENABLES THE ESTABLISHMENT OF THE MINIMUM CAPITAL REQUIRED BY EACH INSURER DEPENDING ON THE RISKS WRITTEN AND THEIR MANAGEMENT

enables the establishment of the minimum capital required by each insurer depending on the risks written and their management. Moreover, it establishes certain mechanisms to achieve effective and efficient risk management and its verification by the supervisor.

The Directive links the achievement of this objective to the need for Insurance and Reinsurance companies to have an adequate governance system that is also subject to supervisory review. In the legal text, «governance system» is defined as the internal capacity to carry out tasks of a practical nature; that embraces processes, customs, politics, laws and institutions that affect how a company or corporation is managed, administered or controlled.

To continue with Solvency, risk management is an important function integrated within the governance system.

With more specific regard to risk management, Solvency II states that insurance and reinsurance companies should have an effective risk management system, which will comprise the necessary strategies, processes and information procedures to continually identify, measure, supervise, manage and notify the risks to which they are or could be exposed, as well as their interdependencies.

[3] The author, María Ángeles Nieto Giménez-Montesinos, in her paper «The treatment of the operational risk en Basel II» (Bank of Spain. Financial Stability, num 8. Pdf), highlights the increasing importance of the operational risk, verified by its treatment as Pilar 1 by Basel II, behind the credit risk and very much in front of the market risk as far as capital requirements are concerned.

SOLVENCY II: PILARS AND GOVERNANCE SYSTEM

OBJECTIVES / PILARS

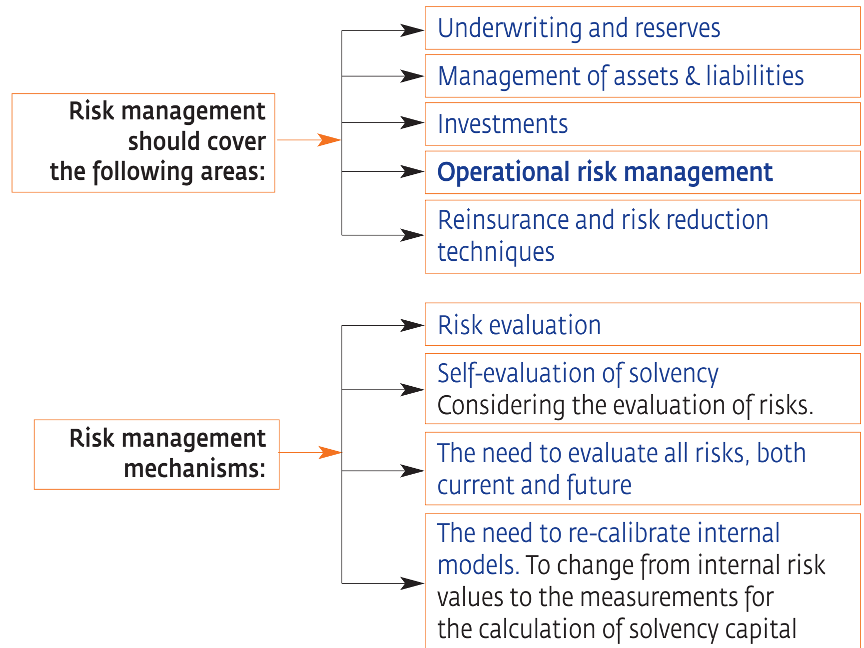
1. **To develop a new system to determine the minimum resources to be required of each insurer as a function of the risks accepted and the management undertaken of the same.**
2. To establish new jurisdictions and performance mechanisms for the supervisors.
3. Establish what risk information and its management should be provided by insurers.

GOVERNANCE SYSTEM

Insurers will have to adopt it and it will comprise the following «IMPORTANT FUNCTIONS»:

- **Risk Management**
- Compliance verification / Internal control.
- Internal Audit. Must be independent of other operational functions.
- Actuarial function.

Source: prepared by author



Finally, amongst those areas that should be encompassed within the risk management function, operational risk management should be mentioned expressly.

One should consider that article 41 of the Directive establishes the need to have a written risk management policy, which, obviously, will constitute the framework for the whole process.

It can be appreciated also that importance is given to operational risk management as it is expressly mentioned as one of the risks that has to be covered to calculate the obligatory solvency capital.

Regarding what is considered to be an operational risk, it should be said that Solvency II defines it as a derivative of the inadequacy or the malfunction of internal processes, personnel and systems, or of external events. It includes legal risks but not those risks derived from strategic decisions or reputation risks. This definition coincides with that adopted by Basel II[4].

Solvency II does not specify which risk areas would be considered to be operational risks. Basel does mention the following: internal fraud, client practices, products or businesses, safety in the work place, damages to material assets, fraud, business incidences, system failures.

Having reached this point, it is necessary to break down the function or functions of the Safety Departments in order to clarify whether the nature of the risks that are managed there should or need to be included with the operational risks. If the answer is affirmative, then it should be concluded that the management of these risks should also be treated under the prism of Solvency II for insurers

[4] Basel II defines operational risk as the inadequacy or failure of processes, personnel, internal systems or the consequence of external events. It includes the legal risk and excludes reputational and strategic risk.

or the Basel Agreements in the case of banking. These conclusions could be extended to all other companies by way of reflections for integrated risk management.

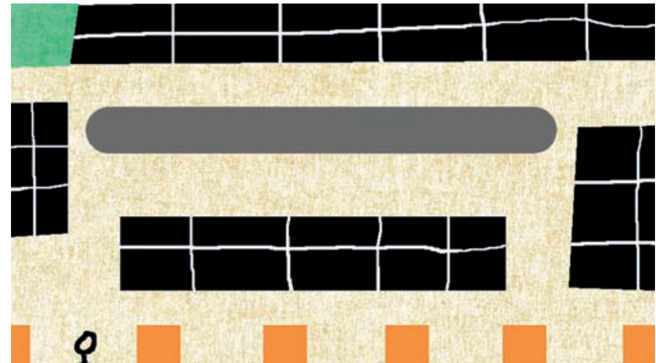
ARE SAFETY AND ENVIRONMENTAL RISKS OPERATIONAL RISKS?

To answer this question, first of all it is necessary to establish what is understood by «safety and environmental risks».

Thus, all those risks that are managed traditionally by the safety and environmental departments can be considered under this heading. In order to clarify the field to which we refer, we would mention, by way of significant examples, anti-social risks are considered to be included under this heading (theft, robbery, threats, terrorism, malicious damages, etc.). However, these types of safety and environmental risks do not end here but, to the contrary, there is a wide and varied number of risks that are managed by safety departments or divisions in companies.

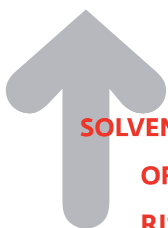
Neither would it be correct to identify safety and environment risks exclusively as property risks, since we would be forgetting risks that are so emblematic in safety as those that can cause damage to persons (aggressions, threats, extortion, kidnap, terrorist attacks, etc.).

As an example, and without it being a closed catalogue or numerus clausus, the following are areas of risk that are or can be dealt with by Safety:



- Risk of fire.
- Risks of nature.
- Anti-social risks.
- Environmental risks.
- Risks derived from damage to or attacks against information, even those from LOPD (Data Protection Law).
- It is not unusual for emergency and self-protection plans to be managed from the Safety departments. There are also authors who

[5] By way of example, safety, environmental and occupational risks are treated together in the work entitled «Manual of Risk Evaluation and Administration"», by the authors Rao Kolluru, Steven Bartell, Robin Pitblado y Scott Stricoff. Publishers - Mc Graw Hill.
In the works or safety treaties it is normal also to encounter occupational safety amongst the disciplines managed together within safety such as in the «Manual for the Safety Director», published by E.T. Estudios Técnicos, 1996. This is also the case in the «Technical Instructions for Comprehensive Safety» by Fundación MAPFRE Estudios, perhaps the most complete collection on comprehensive safety undertaken in Spain and which covers all of the types of safety mentioned.



SOLVENCY II DEFINES OPERATIONAL RISK AS A DERIVATIVE OF THE INADEQUACY OR THE MALFUNCTION OF INTERNAL PROCESSES, PERSONNEL AND SYSTEMS, OR OF EXTERNAL EVENTS. IT INCLUDES LEGAL RISKS BUT NOT THOSE RISKS DERIVED FROM STRATEGIC DECISIONS OR REPUTATION RISKS

TYPES OF SAFETY AND ENVIRONMENTAL RISKS AND MANAGEMENT DEPARTMENTS

- Natural risks
- Technological risks (fire)
- Anti-social risks
- Information and systems risks
- Environmental risks
- Risks of legal non-compliance (Data protection, private security law, fire protection regulations etc.)
- Others: Biological risks, occupational risks
- Self-protection and emergency planning
- Business continuity planning

Source: prepared by author

include these risks within Occupational Health and Safety[5].

In view of the nature of these risks and to answer the question raised, it is necessary to ask how they can affect a company.

In this sense, there can be no doubt that their effect on companies can be decisive and that deficient management of them can lead to irreparable damages. By way of example, consider that, statistically, fire is the risk with the highest probability of leading to a company´s disappearance. And, in terms of their future evolution, no one would doubt the importance of a terrorist attack or the kidnap of a director. Similarly, one cannot ignore that the risks related to information and systems are very frequent and especially damaging. The breakdown of the information systems can bring a company or part of the business to a standstill if the risk is not well controlled.

THERE IS NO DOUBT THAT DEFICIENT MANAGEMENT OF SAFETY AND ENVIRONMENTAL RISKS CAN LEAD TO IRREPARABLE DAMAGES FOR THE COMPANY

One should also consider that almost all of these risks, in addition to property or personal losses, however small they might be, are going to imply damage to image which can sometimes be difficult to repair.

All of this makes us consider that we are dealing with risks that are very important and decisive for the development of the company.

In view of the above, and bearing in mind that the objective of Solvency advocates the comprehensive management of «all risks, present and future, that affect the insurer», it is clear that this need for efficient management is also applicable to safety and environmental risks whose responsibility lies within the Safety departments.

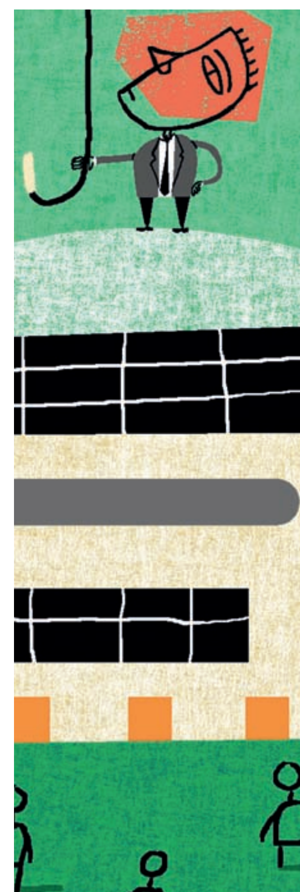
Having established the need to manage safety and environmental risks together with all the other risks that come under the umbrella of Solvency and Basel, its framework into the categories or risk departments that have to deal with the management function can only be within operational risks.

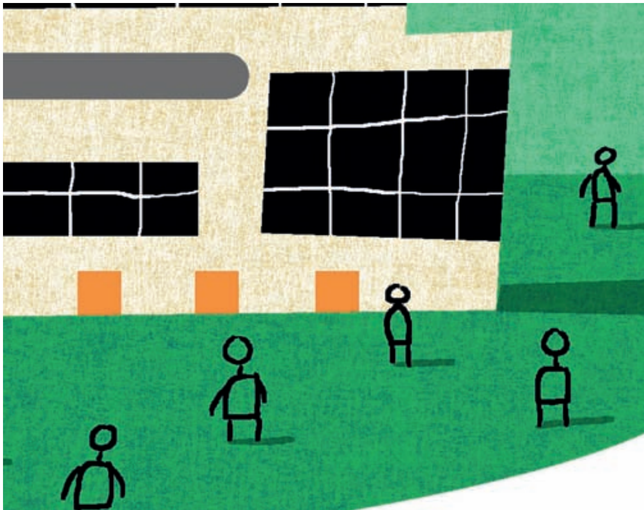
In this sense and as we have seen, many of the operational risks specified by Basel (internal fraud, job security, damage to material assets, fraud, business iIncidences, system failures) can be included within the safety framework. Nevertheless, and despite this reference, the regulation is limited when referring to all of the safety risks, within the operational ones.

CORRELATION BETWEEN THE OPERATIONAL RISK AREAS (ACCORDING TO BASEL) AND THE SAFETY AREAS, WITH THEIR POSSIBLE EFFECTS ON THE COMPANY

BASEL II	SAFETY AREA	EFFECT ON COMPANY
Internal fraud Client, products and business practices	Asset security Fire protection Data Protection Law Emergencies Terrorism Environment Natural risks Business continuity	Loss of assets Loss of business and opportunities Labour disturbances
Labour relations and safety in the work place	Safety of persons (against risks of aggression, kidnap, threats, personal theft or robbery etc.) Natural risks Environment	Loss of assets Loss of business and opportunities Labour disturbances
External fraud and incidences in the business and system failures	Attacks on information	Loss of assets Loss of business and opportunities Labour disturbances

Source: prepared by author





ANALYSIS OF THE CURRENT SITUATION REGARDING THE MANAGEMENT OF SAFETY AND ENVIRONMENTAL RISKS AND THEIR RELATIONSHIP WITH OPERATIONAL RISK MANAGEMENT

Risk management in the area of Safety

Regardless of the existence or not of a well-established model of management in the organization and in response to their principal function inside the company, Safety organizations have concentrated on the effective control of these risks by means of the implantation of preventative and reactive safety measures.

Although it is true that management, as a complete process, still does not have a significant penetration in the area of safety, one should recognize the ground made in respect of identification and risk analysis, such as the milestones necessary to carry out an effective and efficient control of the same.

With regard to the evaluation of these safety risks, in general, one finds the same problems as with the other operational risks; basically the difficulty in their quantification. Despite this, in the field of safety there are more or less scientific evaluation methodologies which have been developed more in their theoretical aspects than their practical application and with a large subjective bias. All of which means that their practical application is very limited.

One should not lose sight of the fact that, in addition to the phases already mentioned, a safety and environmental risk management process should contemplate a decision making phase that enables the possibility of deciding between the suitability of adopting control measures, risk transfer or even the possibility of bearing the risk.

Logically, to close this cycle, it is necessary to evaluate costs and risks, including the evaluation of the assets, as a condition sine qua non to calculate the possible damage.

The transfer of safety and environmental risks

The possibility of transferring risks has been mentioned. Certainly, a management process of any value should also include this phase and, therefore, it is necessary to consider the possibility of insuring or of transferring the safety and environmental risks by means of some mechanism.

Nevertheless, if one analyzes the risk management that is undertaken in the safety area, it is

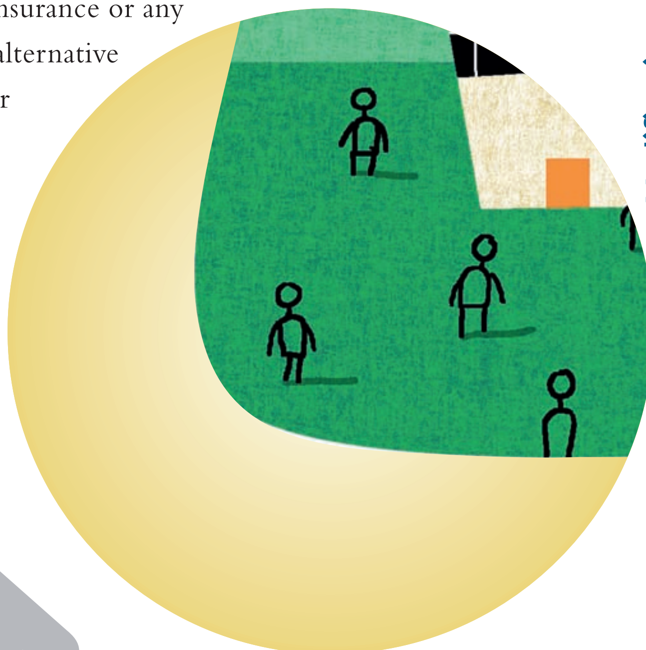
[6] Even at the risk of personalizing, it should be mentioned that MAPFRE has a unit that deals with the transfer of insurable property risks within its Safety and Environmental division.

easy to conclude that they are completely unsuitable for transfer, apart from notable exceptions[6].

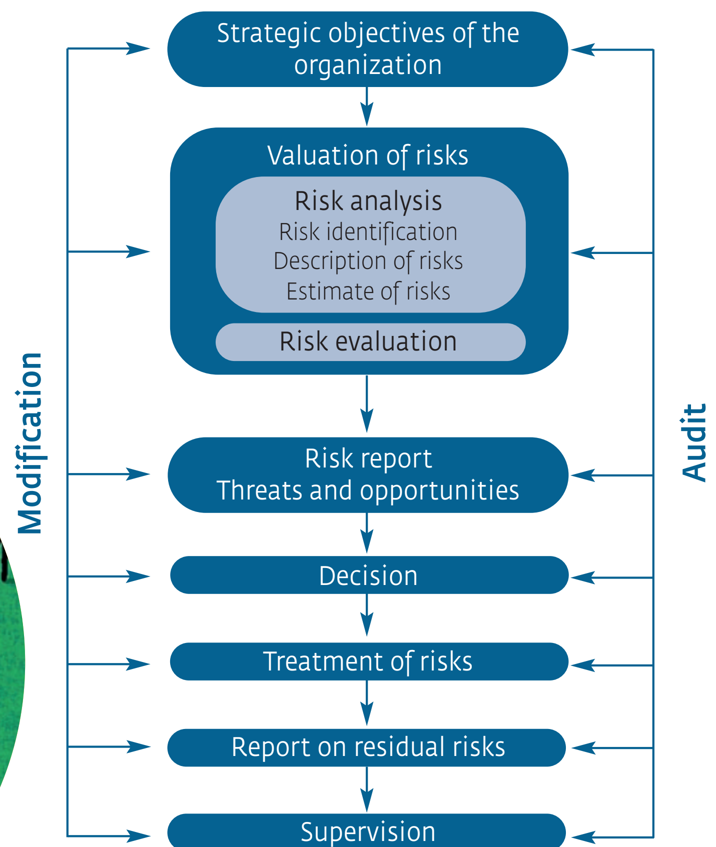
To carry out this function, it is necessary to have personnel specialized in risk management, not normally found in the safety department. On the other hand, this problem can be easily solved by incorporating persons with this professional experience or by accessing the expertise from other departments in the company.

Whatever the solution adopted, it must be emphasized that any complete risk management process must include transfer. And, on the other hand, to achieve an optimum and effective transfer of the safety and environmental risks, it must be incorporated within the management process.

The latter statement is made considering the close relationship that must exist between the Safety departments, as authentic experts in the risks of safety, and those who, whether from inside or outside the company, have the responsibility for their insurance or any other alternative transfer method. As an example, in general and from the methodological point of view, it is not possible to conceive transfer without risk evaluation and so it is necessary to use a expert or, in our case, the Safety department. It should also be borne in mind that the adoption of preventative control measures can have a direct effect on the insurance, modifying the premium, and similarly, another repercussion can be the reduction in the number of claims. The work undertaken on safety is decisive in these aspects.



RISK MANAGEMENT PROCESS



Source: *FERMA. Management Standards*.

THE MANAGEMENT OF OPERATIONAL RISKS IN COMPANIES IS USUALLY INCLUDED WITHIN THE MANAGEMENT OF ALL OTHER RISKS, CLOSE TO THE FINANCIAL AND ECONOMIC DEPARTMENTS OR EVEN THE AUDIT DEPARTMENT

Brief outline of the relationship between operational and safety risk management

If one analyses the way in which management of operational risks has been carried out, the following can be extracted:

The management of operational risks in companies is usually included within the management of all other risks, close to the financial and economic departments or even the audit department.

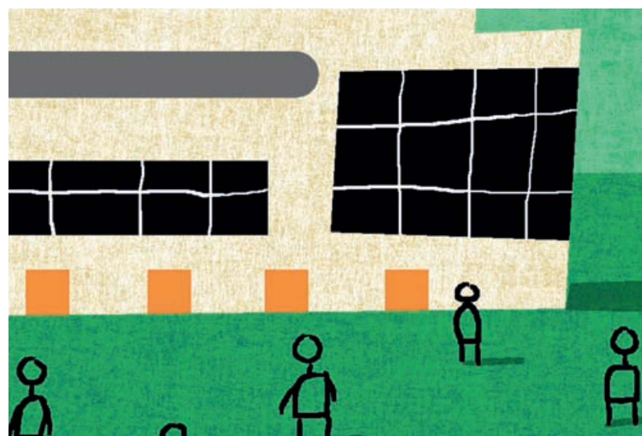
In accordance with its own concept, operational risks usually include those derived from Administrative Management, Human Resources, Committees, Commercial Management, Customer Services, Technology, etc. Within these, it is not normal to include safety risks, at least to their full extent, or even those of the environment; just mere references in the risk questionnaires, especially in respect of information risks. And it is definitely not usual to include them within the management of all operational risks via the established management processes.

The above is somewhat contradictory if one takes into account the importance of these safety and environmental risks and the legal need to control all these risks in an integrated way within the scope of this analysis.

The management that has been traditionally carried out of these other risk areas is even less considered, in favour of authentic integrated risk management required by the regulation and the optimization of resources that includes taking advantage of synergies between the different risk management areas.

It is true that the departments responsible for risk management in large companies are aware of the situation and the importance of these risks. One can ask, therefore, why their relationship with the safety departments tends to be limited to mere occasional cooperation without going so far as to undertake authentic management processes also for the safety and environmental risks and without including them within the management of rest of the company´s risks.

The answer can be for several reasons. On the one hand it can be caused by the lack of knowledge that there is in the company in general concerning its own safety departments; this is also contributed to by the necessary confidentiality that surrounds many of the matters relating to safety, together with the fact that they are very specific and, generally, serious risks which means that they are treated by



ALTHOUGH SOLVENCY II ESTABLISHED THE NEED TO HAVE RELIABLE AND ADEQUATE STATISTICS FOR CARRYING OUT RISK CALCULATIONS, THE REALITY IS THAT, IN GENERAL, RELIABLE STATISTICS OF THE MAIN OPERATIONAL RISKS ARE NOT AVALAIBLE

very specialized and perhaps narrow minded staff. But, curiously, on the other hand, these same characteristics can almost be applied to those departments responsible for risk management. The result is that the possible cooperation between these departments, which are functionally separate, can be difficult a priori and almost «contra natura». These difficulties will have to be overcome for the sake of cooperation necessary to manage risks adequately.

CONSIDERATIONS FOR REAL INTEGRATION OF RISKS

It seems clear that it is necessary to unite efforts and take advantage of the synergies between the different areas with responsibility within risk management in companies and try to achieve an effective integrated management, overcoming the functional difficulties and any others that make this cooperation difficult.

As it has been seen, Solvency establishes the need for a risk management policy. To introduce this policy and make it applicable to all areas of risk, a necessary requisite is to implement a management process that is coherent with business principles and the appeal for risk in the organization.

On the other hand, it can be observed that many of the normal risk management terms, whether in the financial, business, operational or safety areas, do not respond to the same concepts. This situation provokes certain confusion, making it difficult to establish common criteria and procedures. It is important to unify conceptual criteria at least within the same organization and it is desirable that this unification should reach higher levels and extend its application to the whole sector. Of course, the ideal situation would be for a common language to be used in the risk management field.

Procedures to evaluate the operational risk to its full extent are not available

The Directives do not establish specific criteria to carry out this evaluation; an evaluation that, on the other hand, they consider to be essential.

In the world of risk management in general, it is not easy to find generic models for undertaking a quantitative evaluation of the operational risk.

This situation leads to considering the need to take on or study in depth or design evaluation procedures for the operational risk to its full extent,

which should include the quantification of the risk as far as and when possible.

Databases of incidents derived from the operational risk

Solvency also established the need to have reliable and adequate statistics for carrying out risk calculations. But the reality is that, in general, reliable statistics of the main operational risks are not available.

It would be advisable for these databases to be made available, both at the level of the insurance company sector and at a wider or inter-sector level.

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