Gerencia de Riesgos y Seguros

ENGLISH APPENDIX

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The importance of innovation

Sometimes we are prone to wild and contradictory opinion swings. We defend an idea tooth and nail one moment and then, with time, we see with unusual clarity its weak points.

As Miguel de Unamuno wrote in *El sentimiento trágico de la vida* (*The Tragic Sense of Life*) it is the contradictions between our thoughts and feelings that «cement our actions and work». In the current juncture, however, it behoves us to keep a clear-eyed and contradiction-free outlook. At moments such as these it is all too common to throw the blame for the situation onto external factors rather than our own performance. Might we not have brought this down upon ourselves? Bad news is overriding good news to such an extent that we now tend to shy away from owning up to any good fortune for fear of what others will say. This has to stop. Why not plump for a change in our mindset, a change in attitude to gird our loins for action? For as long as we stick to past experiences we will never be able to look to the future.

Innovation, especially scientific and technological innovation, has become the buzzword but sometimes with such overkill that it is almost inevitably written off as a «fad». Nonetheless it is in fact crucial to focus on innovation to find out how to do things better, using different methods and wherewithal. This innovation has to be married with more efficient processes and technology, capable of upping our flagging productivity and breeding the necessary market and company confidence for tackling the sorely awaited upturn.

Against this backdrop the Federation of European Risk Management Associations (FERMA), has called on the European Parliament, in an act of transparency, to enforce policyholders' right to know their brokers' remuneration. The draft insurance mediation directive – to be voted on this summer – recognises this entitlement only for individual policyholders and small businesses. As this draft stands buyers of insurance for large risks (defined as those that meet two of these three criteria: net annual turnover of more than 12.8 million euros, a balance sheet of over 6.2 million and a workforce of over 250), would have to depend on voluntary agreements between the parties. In the words of FERMA's President, Jorge Luzzi, «We would prefer to see all insurance buyers covered by the directive but at least they should be able to request disclosure and for that request to be enforceable».

If there is one sector of economic activity that is still facing strategic challenges this is the Spanish energy system. One of the conclusions drawn by the 2012 Report of the Energy and Sustainability Observatory is that it is «crucial for this system to be underpinned by a long-term vision that is conducive to the formulation of stable and sustainable policies».

The first of this issue's three studies is a summary of the lecture given by Professor Wagner from Germany's Leipzig University during the new year reception held in Cologne in January of this year. Its authors propose a new insurers' paradigm capable of much quicker action and response than hitherto while at the same time ensuring the stakeholders' long-term value.

The second article puts forward some reflections on business interruption insurance, defined by the author as a «tailor-made» policy capable of guaranteeing that no loss event alters the annual economic result of the company concerned.

The last article in this issue is written by a former editor of the review, who draws on all his wealth of experience to explain the importance of a correct maximum loss estimate per claim for any risk manager.

The report published in this issue gives information on the Latin American insurance market in 2011 and the first six months of 2012, taken from the eleventh report published by FUNDACIÓN MAPFRE to give an overview of the current situation of the insurance market in the countries of Latin America.

This brings the current issue to a close. As always we hope and trust it will be to your liking.

Insurance industry and crisis: *future prospects*

On the occasion of the traditional New Year's annual meeting, held at the Cologne Chocolate Museum, which brings together customers, brokers and various German institutions and associations, Professor Fred Wagner from Leipzig University presented the following lecture on the Sovereign Debt Crisis and Insurance.

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The insurance industry is in a transition and it is in times of change. Crisis has become the norm. German insurers are dealing permanently with crisis and their consequences since 2001. Their business model has proven to be robust, beginning with the stock exchange crisis, the banking crisis until the sovereign debt crisis. The latter – with its low interest rates, a sharp rise in volatility of the investment markets and the negative rating environment – has proven to be the most aggressive challenge to the insurance industry yet, even though the most recent European Insurance and Occupational Pensions Authority (EIOPA) financial stability report shows slight signs of relief. Apart from the life insurance, premiums and profitability have stabilized. Nevertheless, a declining level of solvency and liquidity are distinct warning signs.

ILLUSTRATION STOCK

Background and causes of the crisis

Let me briefly look at the causes of the current crisis. In the public debate in Germany, the terms «sovereign debt crisis», «debt crisis», «euro crisis», «banking crisis» and «financial crisis» are being used. Most often the terms «debt», «financial» and «euro crisis» occur. They show the broad scope of the problem, and yet they are very unspecific at the same time. The fact is: Europe's crisis is as of today less a sovereign debt crisis as a regulative one. For the apparent deficits in the balances of the Member States, no fiscal union had been agreed upon, in which the stronger members support the weaker ones, automatically. In the common destiny of a single currency however, the tried and true recipe of currency devaluations in times of declining competitiveness of a Member State is no longer an option which can be used.

Moreover a toxic cocktail has developed from the massive deregulation of the financial markets, their almost complete digitalization and interconnectedness, quantitative easing and the actual rising government debt ratio: This cocktail will keep us busy as a society, but particularly the insurance industry for years.

Government debt as a deep social problem

Behind this development over the past ten to fifteen years, however, lies a deeper social problem: Germany recorded, for example, 1.6 trillion euros in debt taken in between the years 1950 and 2008. Almost as much interest – 1.5 trillion euros – has been paid in the same period for this debt. Short-term liquidity profits have thus created long-term problems. Now, Germany has of course a special responsibility to finance the Reunification. Nevertheless sovereign debts do not incur accidently:

- They arise because citizens require higher or – during times of structural changes – undue benefits of their state and want, at the best case, to reduce their tax rate.

- They arise because politicians – aiming for the next election – delay necessary structural adjustments and do not promulgate unpopular truths. Since the 1970s, for example, the problems that come up now in the field of the pension provisions for us, have been foreseeable.

Trust and customer

But what does the just described mean for the individual? Through the necessary fiscal consolidation, the efficiency of the state is reduced and there is a lack of social resources to finance the pensions. So you could find the presumption that a higher demand for private pension products exists. In theory the endowment products – those which build up capital – in particular should be booming.

We all know: that is not the case.

This shows: The insurance industry is much less free from this crisis as we would like to believe. During the crisis, customers have become more sceptical. They are being certainly more informed with the help of the Internet – but not necessarily better informed. They are more price-sensitive, more willing to change, more uncertain. They are looking for security, but want to maintain flexibility at the same time.

THE INSURANCE INDUSTRY COULD AND SHOULD MORE ACTIVELY CHAIR THE DEBATES ABOUT HOW WE MAKE PROVISIONS FOR OUR PENSIONS, HOW WE ADAPT TO GLOBAL CHANGES AND TO THE STRUCTURAL BREAKS

The just described pressure towards consolidation, the change in life circumstances and the significant uncertainty, this all requires a broad social «Rethinking». Here lies an opportunity for the insurance industry. As one of the most important intermediaries for our society, our industry could and should – regardless of the politics of the day – more actively chair the debates about how we make provisions for our pensions, how we adapt to global changes and to the structural breaks. Here is the chance to build lost confidence.

2013: A European year of transition

Overall, we will probably in 2013 end on a fairway that we feel as downright quiet after the turmoil of recent years. The combination of the ESM (European Stability Mechanism) and the bond purchase program of the ECB (European Central Bank) should calm the markets (initially). European governments are now required to develop future-proof mechanisms for European economic and fiscal integration, implement the necessary reforms of national structures and to reduce the public debt ratios.

How stable the current European financial architecture is judged by the markets, will show itself soon at the example of Spain and Cyprus. Certainly of interest is also the outcome of the Italian elections. Here Europe's third largest economic power after Germany and France elects it´s new government. It will be interesting to know the development of the political situation in Italy and whether the Italian reform zeal is waning. The reaction of the financial markets can be imagined. Surely not only Italian government bonds, but also the bonds of all European countries in crisis would be affected. Insurers with high engagement particularly in Spain and Italy have to face a reduction in their credit ratings and thus reduced competitiveness.

Solvency II

Of direct interest to the insurance industry are the advances in Solvency II. As you know, the Commission has postponed the launch also because of the on-going crisis. Meanwhile, it must be emanated from a step-by-step-introduction between 2014 and 2017.

The results of the recent Quantitative Impact Studies are – according to the current schedule – to be expected in spring, and they will demonstrate whether the current rules are really suitable to represent the individual risk situation of the individual companies, accurately and assessable. Still critical are the models for the development of the interest rates. In particular, the capital buffer for the long-term guarantees of life- and health insurers are in focus. According to current proposals, the risk capital requirement varies radically depending on short-term interest rates, and they assign the risk and investment managers with great challenges.

Viewing the sovereign debt problems, it must be stated that the planned regulation sets disincentives by favouring government bonds at the risk capitalization. Major asset classes such as Corporate Bonds, Covered Bonds, Real Estate and Stock Company Shares will be, also by comparison, «more expensive» and therefore less attractive. If you look at the role of the insurance industry as a long-term, stabilizing capital provider for the overall economy, this is difficult to understand.

2013: A transitional year also nationally

Also nationally – this means for us here in Germany – we are going to experience a transitional year in 2013 – a year of the federal election traditionally lacks the tranquillity for wide

legislative initiatives. Instead we will be dealing during the election campaign – in addition to the national debt and the future organization of the banking system – with other important issues directly related to the insurance industry. These include the demographic development and the reorganization in the areas of pensions and long-term care, as well as climate change.

Economically all experts start with the assumption of only a slight growth in Germany in 2013. The already 2012 experienced restrained approach of German industry and services, due to the sovereign debt crisis, will certainly continue in 2013.

Significance sovereign debt crisis for capital management

In front of the outlined background, the challenges for capital managers are growing. The easy money policy, which is useful – if not necessary – for the banks, but also for the indebted states, is difficult for insurers. Viewing the guaranteed interests, especially in the personal insurance the challenges are particularly great. Recent analysis and the example of Japan show, that life insurers are likely being able to cope with low interest rates for decades, but it generates unsatisfactory results for their equity investors.

In addition, the high level of volatility, the widening of credit spreads (Euro periphery countries, bank debts) and systemic risks put the asset management to the test. Additionally, the (exaggerated) rating pressure on government bonds and all downstream asset classes continues and the markets are pricing significantly lower ratings in some cases.

Many, especially (South) European, placements can therefore not be considered any more. Surely

the diversification benefits for standard systems are not yet fully exploited, but their modelling remains difficult. As consequence of this investment emergency, new asset classes (such as infrastructure, renewable energy and power grids) and new issuers (especially from the emerging markets) must be found and they must be integrated. However, this significantly increases the complexity both organization wise and capacity wise, in particular also in the mapping of the models.

Leeway in actuarial practice

But if the capital market is weakening in the foreseeable future as yield bringers due to the crisis, it means nothing other than that the insurance practice once more comes into the focus of earnings. This field holds options for action and opportunities for individual insurers.

If we look at the insurance industry as a whole, the effort must be directed towards the product design (keyword: decreased guarantees), the product mix of new business (keyword: lower risk capital absorption by disability insurance, investment funds-linked products), the risk assessment in underwriting, the costs and – where possible – the prices. Own capital resources can be strengthened, for example, through a reduction of the participation in current-profits, through retained earnings and by means of hybrid capital.

2012: A LANDMARK YEAR FOR THE INSURANCE INDUSTRY

If you look, especially in the field of industrial insurance, just back at 2012 and forward to the upcoming time, it can be stated: There is movement in your market.

There are several signs of change. Now the outspoken plans of Swiss Re, to act as a primary industrial insurer, show once more: competition is picking up. The race for lucrative new areas of growth has begun. The internationalization is increasing, as is the long scolded willingness for innovation. Not at least, the soft cycle approaches it's end – at least in some areas.

The overdue increases in premiums for company car fleets were the first in a round of price hikes for the entire market. A more selective selection of customers in the liability and property insurance market hints at a hardening of settings.

INSURANCE INDUSTRY: COMPETITION AND INTERNATIONALIZATION

Let us briefly remain at the plans of the Reinsurers. Their request for new segments is understandable in the context of the crisis and the slower growth of the Reinsurance market compared to the direct insurance market. But the lead of the established industrial insurers in the areas of customer and broker relationship, in the structures for issuing and managing policies, in the field of international insurance programs as well as in the claims handling will not be caught up overnight.

THERE ARE SIGNS OF CHANGE IN THE INDUSTRIAL INSURANCE MARKET. THE INTERNATIONALIZATION IS INCREASING, AS IS THE LONG SCOLDED WILLINGNESS FOR INNOVATION

The relative independence of MAPFRE from unaffiliated reinsurers is an important competitive factor[1].

Also, the direct insurers will give themselves a run for the money in the next phase. We are surely all aware of ACE´s announcement, to become significantly more active in Germany. At the same time, we are experiencing how for example HDI-Gerling and Allianz increasingly turn to emerging markets. In this context, it is also especially relevant for your company how the new competitors in Latin America perform and how they put pressure on MAPFRE as the market leader over there[2].

Industrial Insurance: Innovation

In a market with more competition and with a market interest rate that is not sufficient to compensate for inflation or for losses in the actuarial result, speed, innovation and new growth areas are the key words that promise future success.

The accusation, that the industrial insurance in its entirety is not enough innovative, is certainly beside the point – but it has a core of truth. If you think about it, it is very quickly becoming clear: Innovation in the industrial insurance is more evolutionary than revolutionary. By an individual adjustment of the coverage clauses, step-by-step-responses to new customer requirements and changing risk landscape new covers are being developed.

But it is also clear: It is complex, often not only in the dialogue, but in the trialogue between customers, direct insurers and reinsurance companies, to build up risk transfer to new areas. Especially when

- There is no loss history
- Great casualties and catastrophic risks are threatening

MORE INVESTMENT IN KNOW-HOW AND RESEARCH ON THE INSURERS' SIDE ARE SURELY A KEY TO SUCCESS, TO EXPAND THE BOUNDARIES OF INSURABILITY

[1] Cf. Moody's (10/2012): Credit Opinion: MAPFRE GLOBAL RISKS, p. 4.

[2] Cf. Engelhardt, R. (2012): MAPFRE stärkt Marktführerschaft in Zentralamerika, in: Versicherungswirtschaft, no. 15 (Aug.), 2012.

- Direct- and Re-Insurers are increasingly competing with each other
- Global linkages become more and more complex

More investments in know-how and research on the insurers' side are surely a key to success, to expand the boundaries of insurability. Among other reasons, this explains that insurers now increasingly offer policies to protect against intangible risks, such as violations of intellectual property rights, hackers, loss of use, or violation of privacy laws.

End

Maybe we do have to deal also with an «expectations» problem. Everyone has probably experienced by himself during everyday life: The computerization and globalization has greatly accelerated our life. That is also the reality of our customers. Processes, which a decade ago were still very lengthy run, start today at your fingertips. This trend changes people's expectations. Everything must be readily available, if possible.

This expectation does not stop at insurers. You will have to endure this apparent anachronism. And you should act fast – maybe faster than a few years ago. But insurers also do well keep the long-term value for the customers and partners, which insurance even – or especially – provides through their deliberateness.

With acceleration and deceleration, we have two navigation triggers, which can both be success factors if they are used with the view to the target and with the view towards differentiation. Times of change such as the present, lend themselves to examine our own positions and to find new ones, prove best practices and to discover new things.

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BUSINESS interruption:

«A tailor-made» policy

Whilst, in general, it is important that any policy is adapted to the characteristics of the risk to be insured, this is fundamental in the field of consequential losses that arise after a material damage claim. No two companies are identical and there should not be two Business Interruption Policies that are the same: the policy should be «tailor-made».

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For this reason, it is essential to obtain the maximum information about the risk to be insured and this can be obtained from the company's web site, the company registry, from firms that specialise in providing financial-economic information... and the actual insured that should provide accurate and detailed answers to the questionnaire provided by the insurer or broker.

The Business Interruption, Loss of Profits or Consequential Loss Policy, which can be called in either of these three ways, provides cover in order that a claim does not affect the forecasted financial results of the company, i.e., the insurance tries to put the company in the same financial position that it would have been if the claim had not occurred.

Obviously, a stoppage of a week in the production process, for the equivalent of only 2% of annual production, will not affect all companies in the same way. For example, it will depend on whether the company manufacturers to order or by stock, whether their process is continuous

THE BUSINESS INTERRUPTION POLICY TRIES TO PUT THE COMPANY IN THE SAME FINANCIAL POSITION THAT IT WOULD HAVE BEEN IF THE CLAIM HAD NOT OCCURRED

(aluminium manufacturers, oil refineries...) or not, if there is stock available for days or weeks, if work is carried out 8 hours a day, 5 days a week or 24 hours for 7 days a week, if production capacity is greater than sales capacity or, vice versa, if sales capacity is greater than that of production…

The policy covers «the Loss of Turnover attributable to the claim during the indemnity period, the increased cost of working and Extraordinary Expenses incurred by the Insured in order to reduce or avoid the loss of sales», always with the limit of the gross margin loss they avoid; i.e., the extra costs and extraordinary expenses must be profitable.

For a claim to be indemnifiable under the policy, it has to have affected the financial results of the company:

INCOME – EXPENSES = PROFIT

In other words, it must affect income (produce a loss of sales) or expenses (produce increased costs) or both, which is what tends to happen in large claims.

For many business, it is also common that stoppages of a few days do not affect the financial result since their production capacity is greater than that of sales and this is usual in times, such as the present crisis, when stock equivalent to 1-2 months production may be held.

The three main parameters of a Business Interruption Policy, which can be very complex as it covers Loss of Profit due to Fire, Machinery Breakdown, claims at suppliers´ or clients´ premises, for failure of supply, impossibility of access..., are:

- The Sum Insured
- The Maximum Indemnity Period
- The Deductible

The Sum Insured is the company´s gross margin (GM) and can be calculated in two ways:

The addition method: GM = FC + NP
The difference method: GM = T/O - VS + Variation in Stocks

Where:
–FC: Fixed Costs or non-variable expenses (they are not proportional to production and usually continue after a claim).
–VE: Variable Expenses (they are proportional to production and are usually avoided after a claim).
–T/O: Turnover (the company´s normal annual income).
–NP: The Net Profit generated through the company´s insured business activity before the deduction of tax on profit.
–Variation in Stocks: Closing Stock less Opening Stock.

Gross Margin is also referred to as Gross Profit. We prefer to call it Gross Margin since accountants confuse Gross Profit with profit before tax.

It is not usually a problem to calculate the Gross Margin and we recommend using the addition method since, in this way, the fixed costs, and the insured percentage, are specified (semi-fixed or semi-variable expenses such as electricity, telephone...).

Whilst it is difficult to predict what the net profit will be for the coming year, in order to avoid under-insurance, an automatic increase clause of between 20% and 40% exists and enables the sum insured to be adjusted after the close of the financial year and once the annual accounts have been audited.

The policy must be designed to cover a large claim and, for that reason, it is advisable to analyse the worst possible claim and the time that would be needed to get the company business back to normal.

Since the UK Policy (Business Interruption) which is the form normally used in Europe, provides an indemnity period from the date of loss up to the time when sales levels return to normal (with the «Gross Earnings» form, it is only until production returns to normal), one should always consider the time for reconstructing buildings and replacing key machinery, plus 4 to 6 months necessary for removal of the debris of what has been destroyed, permits, projects, recovery of 100% production, replacement of back-up stock...

If the indemnity period that we fix is for 12 months or less, the sum insured must be the equivalent for 12 months and, if the maximum indemnity period is between 12 and 24 months, the sum insured must correspond to the latter period. Large claims with insufficient maximum indemnity periods are frequently encountered.

Lastly, another aspect to be established is the deductible. This will normally be a time deductible but it is often not properly

defined and this causes problems in the adjustment of claims.

For example, for a 5 day deductible: Which 5 days are they? The first 5 calendar days? The first 5 production days? Are they 5 days proportional to the indemnity period? We would suggest that this is specified. For example: X number of production days with a minimum of Y € (the latter is to eliminate small claims that do not usually affect the company´s profit).

To summarise all of the above and if, with adequate information, we are able to determine the correct sum insured with the corresponding automatic increase cover, to fix a maximum indemnity period that will be sufficient even for the worst possible claim (the total destruction of the company) and a deductible which, in addition to providing a policy saving, enables us to take out those stoppages that are not going to affect the company´s annual results, normally the policy can guarantee that the claim will not affect the company´s financial position, i.e., its financial results will be the same regardless of the claim.

IF THE INDEMNITY PERIOD THAT WE FIX IS FOR 12 MONTHS OR LESS, THE SUM INSURED MUST BE EQUIVALENT FOR 12 MONTHS, AND IF THE MAXIMUM INDEMINTY PERIOD IS BETWEEN 12 AND 24 MONTHS, THE SUM INSURED MUST CORRESPOND TO THE LATTER PERIOD

ILLUSTRATION STOCK

Probable maximum loss estimation in loss events

Usefulness for industrial insureds

Any company's strategic risk-management decisions between technical safety measures insurance coverage, risk retention, self insurance and alternative risk transfer (ART) are taken in light of a risk assessment and other business considerations. Probable maximum loss estimation provides essential upper-threshold information for proper decision-making in the overall risk management policy.

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Every so often a slew of adverse circumstances might come together to produce events of maximum destruction. These events might spill beyond any company's internal and external protection resources and cause huge losses in both human and money terms.

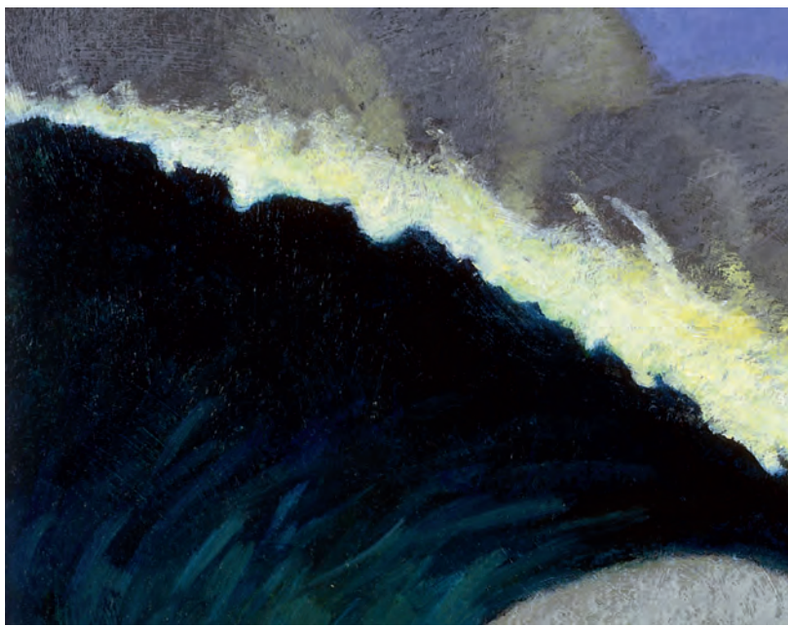
Although the likelihood of suffering a maximum loss is very low, even remote, it is no less true that no one who is exposed to risks of a natural, technological or social nature can rule them out completely.

Throughout history extreme events have certainly occurred: meteorite strike, glaciation, extinction of species, human pandemics, among others, not to mention apocryphal events in the Old Testament: plagues, universal flood, destruction of the Tower of Babel, sinking of Atlantis...

Extreme events still occur in today's post-industrialised ICT world, whether bound up with technological risks, natural catastrophes or antisocial movements, any of which might trigger

consequences known as «black swan events» or «maximum possible losses».

Any company, within its own particular scale of risks and size, is liable to suffer maximum loss events that might jeopardise its ongoing viability. It is therefore crucial to identify all risks and circumstances that might lead to these extreme situations and ascertain their potential economic and financial scale. In view of these magnitudes and other salient factors the firm will be able to take reasonable decisions and allocate suitable resources to ensure proper technical protection, in terms of safety measures, and financial protection, in terms of risk retention, insurance coverage and alternative risk transfer (ART).



Historical background and trends

The first documented use of maximum loss calculations dates right back to preparations for warfare in ancient times, for estimating potential losses on both sides. Down the ages and right up to today it has been habitual practice to establish the level of victims in ranges of optimistic, normal and pessimistic outcomes. In the great civil engineering works considerations of this type were also habitual in terms of likely bodily harm (serious and light injuries and deaths) to be suffered by workers during these huge construction works.

After the Industrial Revolution, in the nineteenth and first half of the twentieth centuries, maximum loss analyses in terms of human and money losses were also the norm in high-risk sectors such as maritime navigation, railways, aviation, mining or the chemical industry, then taking in the nuclear and aerospace industries in later years.

By the mid nineteenth century the insurance sector had begun to use maximum loss calculations on an ad hoc basis for the insurance policies of large industrial firms, especially reinsurance assignment. Since the final decade of last century, with rather a patchy distribution among countries and markets, their use has spread to risk management and risk transfer in medium-sized and large firms.

The first attempts to harmonise use of maximum loss estimates within the insurance world came in think tanks convened by CEA (*Comité Européen des Assurances*, now renamed Insurance Europe) in 1963 and 1970 and the IMIA (International Machinery Insurers Association) in 1971. Notable inputs from Spain were made by the

THESE ESTIMATES EVALUATE ONLY THE LOSS IMPACT IN ADVERSE CIRCUMSTANCES REGARDLESS OF THE PROBABILITY OF OCCURRENCE

working group set up by the Cooperative Insurance Company Institute (*Institución Cooperativa de Entidades Aseguradoras*: ICEA), which published a technical guide on this matter in 1996.

Listing all macro-accidents or «black swan events» occurring in recent years would go well beyond our remit here. But for the purposes of anticipating possible future events in specific firms, some of the most notable references are:

- Asbestosis. USA., 1978
- Rapeseed oil intoxication. Spain, 1980
- Bophal gas leak (India), 1986
- Chernobyl nuclear accident. Ukraine, 1986
- Tailings pond sludge outflow. Aznalcóllar (Spain), 1998
- Trade Center terrorist attack. New York, 2001
- Bird flu. South Asia, 2004
- BP Deepwater Horizon rig oilspill. Gulf of Mexico, 2010
- Wildfires. Australia, 2010
- Earthquake, tsunami and nuclear disaster. Fukushima (Japan), 2011
- Hurricane Sandy. USA, 2012

Most of them reached a level of maximum possible loss; others remained at a lower level of «forseeable»; they would be very unlikely to recur in the same circumstances and damage levels. The important point is for them to serve as pause for thought when considering comparative cases, albeit on different scales and in different circumstances. We should never lose sight here of the old saw: «Whatever has happened once can happen again».

Today's technique of risk assessment by maximum loss estimation is now becoming more widespread in the risk management procedures of major firms, especially in the design of insurance policies. It is hardly used, however, in defining overall risk management programmes and very rarely in control and reduction plans (safety); neither is there any reciprocal influence with risk retention and insurance plans.

Fundamental calculation/estimation principles

By a widely recognised principle the statistical measurement of risk (R) is based on two essential factors: the probability (P) and the impact (I) from a given risk or hazard on a given asset or property. As well as the statistical risk evaluation (R = P x I), it is also advisable to use other stochastic, random or forward-looking evaluation methods. These include evaluation of maximum losses per event, dealt with herein.

These estimates evaluate only the loss impact in adverse circumstances regardless of their probability of occurring.

Evaluation of maximum losses per event depends on the first risk analysis measure, i.e., identification of damage or hazard sources and of assets exposed thereto, grouping both as shown in

the risk analysis matrix of figure 1. This scheme ushers in the next risk assessment measure, represented by the interaction of each hazard source with the various assets exposed, in due accordance with the methods to be used.

Application of maximum loss methods depends on a selection of hazard sources and an identification of the assets supposedly involved, as well as an identification of the contexts or circumstances that are liable to trigger extreme loss events.

The information needed for these evaluations is very wide and varied, taking in corporate, financial, research, capital, productive, labour and commercial aspects. Detailed and painstaking field research is essential to cross check document-based information with the real situation on the ground. It is likewise crucial to establish the special circumstances and contexts that have occurred in the past or might occur in the future and might determine the scope of maximum losses.

The next step is then to estimate the potential maximum loss for each selected asset and hazard source under the adverse circumstances considered. It should be made clear here that the term «estimate» means an approximate valuation of no great precision in money terms. The crucial factor here is the size of the maximum losses in relation to the firm's total value. As we will see later, these maximum losses are expressed in money terms and also as a percentage of the total value. For decision-making purposes it suffices to know the range this falls in.

The maximum loss may be estimated in relation to the firm as a whole or against singular or critical elements, such as certain bottleneck processes, centralised stores, data processing centres, R&D units or key executive posts.

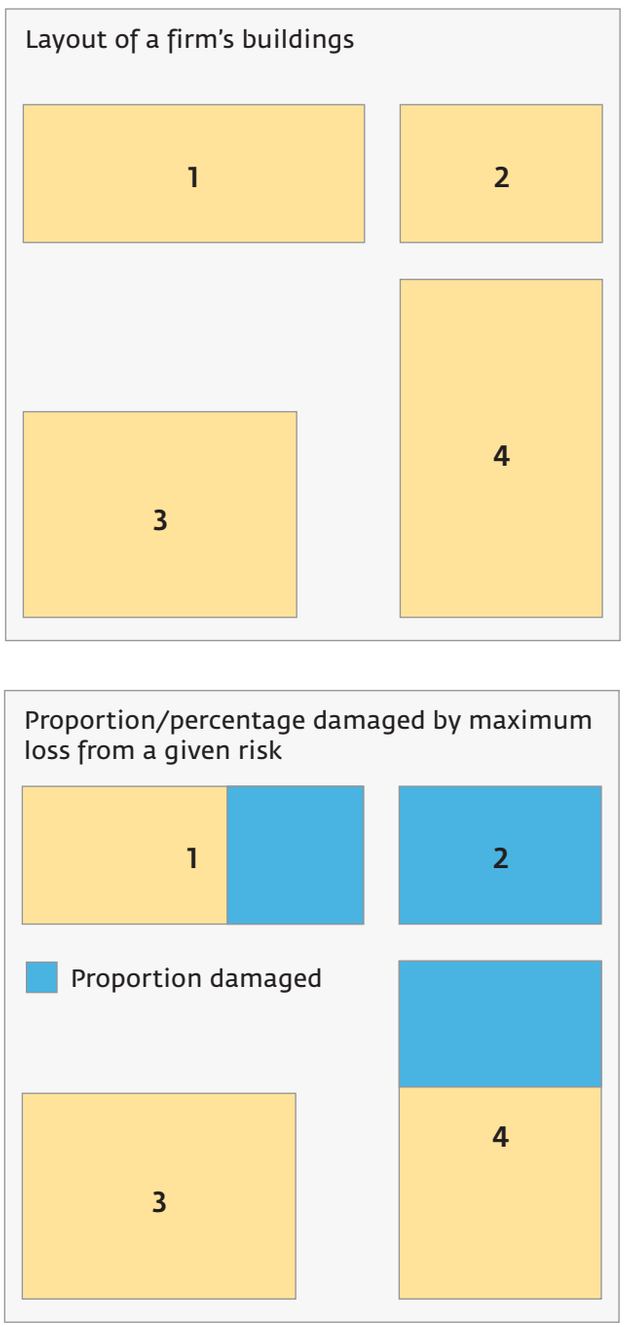
Once the abovementioned basic elements of maximum loss estimation have been defined, a valuation is then made of the damage in the established level cases: possible, foreseeable, probable or other selected values.

This involves a representation of the situations that would ensue in each chosen case and the maximum loss by groups of personal, tangible, intangible and third party assets and other singular items impinging heavily on the company's operations. As for capital assets the best procedure is to assess them as a whole and also broken down into damage of buildings, facilities, machinery and goods.

Figure 1. Risk Analysis Matrix

RISKS HAZARDS (IDENTIFICATION)	ASSETS (IDENTIFICATION) Personal Party	Tangible	Intangible	Third
Nature	DAMAGED ASSETS (EVALUATION)			
Human-antisocial				
Technological	Time	Context		Scenario

Figure 2.



Usual nomenclature

As already pointed out these risk assessment techniques have been used for some time in the insurance world. In that process a series of terms have been coined for use in the major groups of reinsurers, insurers and brokers of major industrial risks. These habitual terms and the corresponding abbreviations are listed in the table below:

Terms	Abbreviation
Maximum Possible Loss or Maximum Foreseeable Loss	MPL or MFL
Probable Maximum Loss	PML
Estimated Maximum Loss	EML
Normal Loss Expectancy	NLE
Large Loss Probability	LLP
Absolute Maximum Loss	AML
Total Probable Loss	TPL

As this table shows the words loss and maximum recur in most of the terms with alternation of possible, probable, expected and absolute as the third word, several with the letter P standing for them. The abbreviations, therefore, both in English and Spanish often raise doubts about what the «P» stands for; two of the most commonly used terms are PML standing for Probable Maximum Loss and MPL, the first two letters switching position, standing for Maximum Possible Loss.

For the purposes of this study, to facilitate understanding in the business world and favour its liaison with the insurance market, the following

APPLICATION OF MAXIMUM LOSS METHODS DEPENDS ON A SELECTION OF THE HAZARD SOURCES AND AN IDENTIFICATION OF THE ASSETS SUPPOSEDLY INVOLVED, AS WELL AS AN IDENTIFICATION OF THE CONTEXTS OR CIRCUMSTANCES THAT ARE LIABLE TO TRIGGER EXTREME LOSS EVENTS

terms have been used in the original Spanish text, expressed here in English with the Spanish translation and Spanish abbreviation:

- Maximum Possible Loss (*Pérdida Máxima Posible*: PMPos)
- Maximum Foreseeable Loss (*Pérdida Máxima Previsible*: PMPre)
- Probable Maximum Loss (*Pérdida Máxima Probable*: PMPro)

Models of Maximum Loss Evaluation per Events

In everyday insurance practice this nomenclature is usually reduced to the abbreviations. Often only one term is used, namely Probable Maximum Loss (PML), or at most two with the addition of Maximum Possible Loss (MPL). This study suggests a three-scale system giving more precise information on the gravity of maximum losses and thereby facilitating decision taking in terms of technical safety measures and financial protection measures adopted by the firm.

The three selected maximum loss terms for this article are the following, with a conceptual explanation in each case.

- **Maximum Possible Loss**. Maximum value liable to destruction by a given hazard, under the most adverse conditions, especially worst-case conditions of inhouse and external safety, pertaining to a good or set of goods.
  It is expressed as the percentage damage in relation to the total value of the good or set of goods. It is also best to express it in money terms under the denomination Maximum Exposed Value (*Valor Máximo Expuesto*) to give due account of the economic scale being dealt with.
  The expression «under the most adverse conditions», playing such a decisive role in the definition, refers to the concurrence of negative factors in the surrounding environment (natural catastrophes, supply cuts, social demonstrations, etc…) and the consequent inoperativeness of inhouse and external security and safety measures (public and private).
  The events of terrorism, sabotage, aircraft crashes and major accidents in neighbouring plant and equipment are not taken into account as initiators of loss events of another type (fires, explosions, mechanical collapses, toxic leaks or

pollutants, etc.…). They do have to be taken into account as independent direct causes where concurrence is possible.

- **Maximum Foreseeable Loss**. Maximum value liable to destruction by a given hazard or risk under conditions of productive shutdown (working shifts) with inoperativeness of inhouse protection measures, except for automatic measures and the intervention of external resources, albeit with some delay, in relation to a good or set of goods.
It is expressed as the percentage damage in relation to the total value of the good or set of goods. The expression «under conditions of productive shutdown (working shifts)» used in the definition refers to the moments in which there is no labour activity: annual holidays, public holidays, nighttime, evenings, when the intervention of any emergency team depends on the efficacy of the surveillance service. There is therefore likely to be some timelag in discovering the emergency and in giving out the distress call and the arrival of the external rescue services. Due account is given here to the functioning of automatic protection systems, if any.

- **Probable Maximum Loss**. Maximum value liable to destruction by a given hazard under normal conditions of operation, especially conditions of inhouse and external safety and security, in relation to a good or set of goods.
It is expressed as the percentage damage in relation to the total value of the good or set of goods. The expression «under normal conditions of operation» used in the above definition, refers to working-day operation with inefficient intervention of inhouse protection resources – unless a very high efficacy is guaranteed – calling for the intervention of external rescue resources, whose participation manages to check the advance of the event. The very optimistic, best-case scenario of an always successful intervention by inhouse resources – unless this is fully guaranteed – would lead to low-profile cases of «minimum losses», which would involve no significant setback for the firm. This valuation seeks the level of maximum losses that could reasonably be regarded as exceptional and which provide a reference range of probable economic impact.

The risk of fire with knock-on material damage is the most widespread in firms of all types and usually has the greatest destruction potential. For this very reason the technical criteria for maximum loss estimation due to fire with material damage are given in an annex as a guideline for the procedure to follow with this particular risk. These guidelines are then translatable to other risks, with the logical particular considerations in each case.

Usefulness for industrial insureds

The information furnished by maximum loss evaluation of the main risks of any firm, together with other evaluation methods, is essential for analysing this risk, taking the corresponding decisions and defining the risk management programme.

The first step along the way is to establish the comparative hierarchy of maximum loss values, pooled into three ranges of possible, foreseeable and probable, as reflected in a risk profile graph of the type shown in Figure 3.

The normal state of affairs is for the order of importance of the maximum losses of the various risks (see Figure 4) to fall within the three classification ranges, but straying beyond them cannot be ruled out; this would call for special one-off explanations and considerations. The main conclusion to be drawn from this joint analysis would be to work from a general principle of proportionality, whereby the greater the risk the more measures of technical and financial protection measures are assigned thereto.

Figure 3. Scheme showing maximum loss levels per event of a given risk

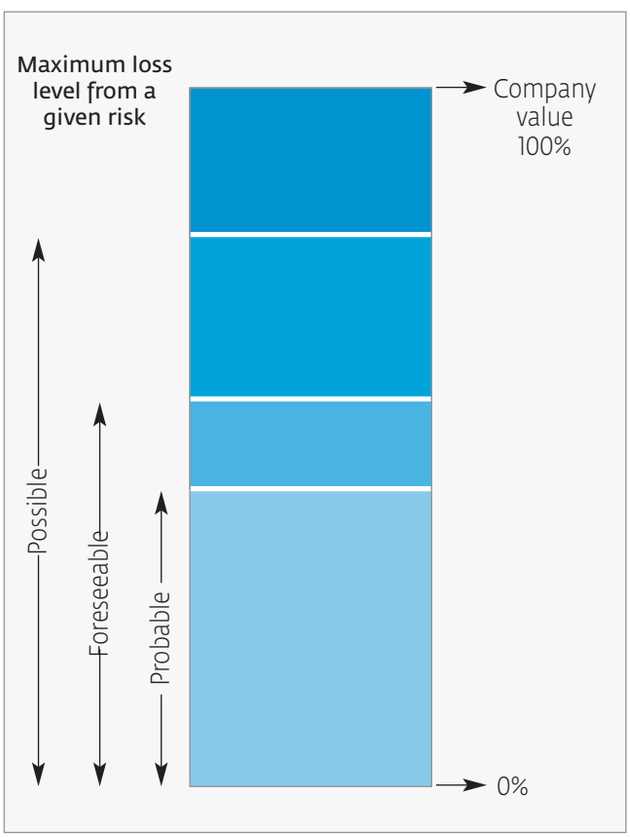
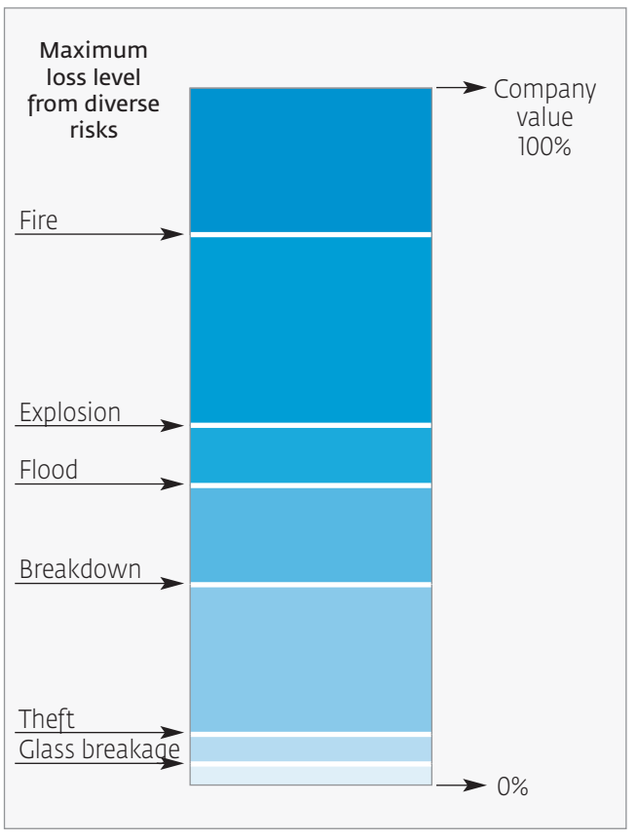


Figure 4. Scheme showing the breakdown of possible maximum loss per event of diverse risks



The interpretation and use of this information for decision taking in companies' various risk management stages should be steered in the following directions:

■ Reduction and control. Safety and security

Legal safety and security regulations lay down the minimum requisites to be met by companies.

THE FIRST STEP ALONG THIS PATH IS TO ESTABLISH THE COMPARATIVE HIERARCHY OF MAXIMUM LOSS VALUES, POOLED INTO THREE RANGES OF POSSIBLE, FORESEEABLE AND PROBABLE

THE FUNDAMENTAL RISK-REDUCTION OBJECTIVE IS TO REDUCE THE PROBABILITY OF LOSS EVENTS; ANOTHER IMPORTANT AIM IS TO REDUCE THE IMPACT OF CALCULATED MAXIMUM LOSSES BY MEANS OF SAFETY MEASURES FOR THIS PURPOSE

But the overriding factor here is the firm's will to overcome any safety problems, thereby achieving a higher level of protection. This decision and the grading thereof are adopted in due accordance with the obtained maximum loss values and other business factors.

The fundamental risk-reduction objective is to reduce the probability of loss events by means of appropriate safety measures; another important aim is to reduce the impact of calculated maximum losses by means of specific safety measures for this purpose.

Thus, in the case of a risk representing very low maximum loss levels in the three ranges (possible, foreseeable and probable), for example, below 5% of total asset values, then the recommendation would be not to increase safety measures unless it be a question of risks to people or critical intangible assets for the company.

In the case of low maximum loss levels in the three ranges (from 5 to 20%), the recommendation would be to bring in basic, low-cost safety measures. At middling levels (20 to 40%) in any of the three ranges, the recommendation would then be to bring in medium-cost safety measures also of a medium technical level.

In the case of high levels (over 40%) in any of the three ranges, high technical level safety measures should be brought in. If two or all three ranges (possible, foreseeable and probable) top 40%, the level of safety measures should then be doubled.

Risk retention / Self insurance

Very low maximum loss risks with no likelihood of frequent loss events of any appreciable size can be taken into account when deciding between total risk retention, i.e., self-insurance, or risk transfer to insurance, in view of the company's financial capacity and the comparative costs of both options.

On other occasions the maximum loss levels, especially within the range of probable, serve to establish the limits of excess waivers / deductibles in certain insurance policies.

Insurance-based risk transfer at first risk or partial value

Thoroughgoing maximum possible loss estimations establish the ceiling or limit that would never be exceeded in any loss event of a given risk. It is therefore a logical company stance to apply for insurance coverage up to this limit as first risk, first loss or partial value.

The application, backed up by the broker and if technically justified, will be accepted by the insurers with a premium reduction in comparison to total value coverage.

When drawing up company insurance policies under this arrangement, corresponding sublimits and limits are usually established for the various risks covered: fire, theft, explosions, physical and chemical risks, natural catastrophes, etc…

On some occasions coverage limits might be fixed in relation to probable maximum losses on a multi-layered basis, in which higher ranges (foreseeable risks) are covered by alternative risk transfer (ART) arrangements, as we will see later.

Multi-layered risk transfer

In the case of major, multinational corporations trading in several productive sectors the best option is often layered risk transfer arrangements on the basis of a master policy, providing the central coverage structure, around which the particular requirements of the various firms are integrated in due accordance with the legislation in the countries they trade in.

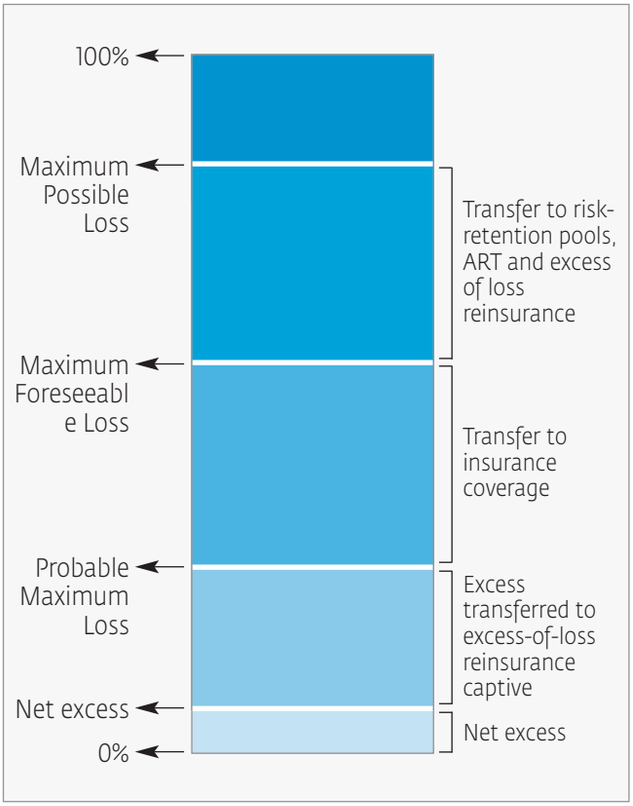
A multi-layered programme is also designed to include various financial protection arrangements: excess waivers or deductibles, copayments, risk retention groups, first risks, alternative risk transfer (ART), reinsurance captives and others layered in or included in segments of economic impact determined from maximum losses in previously evaluated loss events.

The arrangements and segments in each case are established in view of the particular business group's financial capacity, its risk management policies, its general policies and its economic-financial tolerance.

Figure 5 shows an example of multi-layered coverage arrangements in which maximum loss references serve to fix the following coverage limits:

WHEN DRAWING UP COMPANY INSURANCE POLICIES UNDER FIRST RISK ARRANGEMENT, CORRESPONDING SUBLIMITS AND LIMITS ARE USUALLY ESTABLISHED FOR THE VARIOUS RISKS COVERED: FIRE, THEFT, EXPLOSIONS, PHYSICAL AND CHEMICAL RISKS, NATURAL CATASTROPHES, ETC…

Figure 5. Multi-layered coverage model and mechanisms used



- 0 to net excess (net excess retained by the business group).
- Net excess to Probable Maximum Loss : excess transferred to the excess-of-loss reinsurance captive.
- First risk insurance coverage: Probable Maximum Loss to Maximum Foreseeable Loss. This can be taken out in a single segment or several segments with different conditions for certain companies of the group and countries and according to the risks covered, including possible partial assignment (excess of loss) to the reinsurance captive.
- Maximum Foreseeable Loss to Maximum Possible Loss . Under this arrangement the design of the various segments has to be adapted to the different firms, countries and risks covered and the shareout of segments within the arrangement of alternative risk transfer (ART) protection, risk-retention pools or groups and commercial reinsurance.

Other measures within the firm´s general management procedures

Maximum loss levels in events are explicit indicators of a company's strength in the face of fortuitous adverse circumstances. If most estimations of losses from main risks fall within very high values – as a general rule, over 40% of its equity value – then the company concerned would be very vulnerable and there would be a need for costly risk management improvement programmes. Conversely, if most of the main risks fall below this threshold figure, the company concerned would be well protected and there would be hardly any need for improvements; risk management costs would be correspondingly low.

Within a company's general operations there are some particular operations where, in addition to the specific information pertaining to that field of business, maximum loss information may be useful and revealing as supporting criteria. Examples might be the following:

- Company mergers and takeovers.
- Stress tests in financial, commercial or adverse social situations.
- Guarantee of the supply of products or services in the face of fortuitous events.
- Ability to service loans and pay shareholder remuneration.
- Degree of business continuity and resilience.
- Negotiations with public authorities, trade unions and other liaison groups.

Conclusions

Maximum loss evaluation provides crucial information for defining any company's risk management programme. The main objectives are to reduce said maximum levels by means of financial protection and safety measures, with periodic monitoring of the trend in these indicators.

These evaluations might help to ascertain a firm's vulnerability to extreme fortuitous risks; this qualification, together with business opportunity risks, would then reveal the company's strengths and weaknesses.

This methodology should ideally be applied during the predesign phase of any project. This would then make it possible to apply measures involving layout, industrial processes, construction, safety systems and others, as compatible with the planned operational processes, in the interests of reducing maximum loss values beforehand and facilitating risk management once the firm is up and running.

As already pointed out, maximum loss calculations cannot claim any great accuracy. Their remit is rather to establish, on reasonable grounds, the ballpark figure to be taken into account by the company in its daily activities and in due accordance with its particular financial capacities.

Even if there is no previous maximum loss experience to go on it is still recommendable to grasp the nettle and take the first steps on the basis of reasonable hypotheses. This system can then be honed in light of ongoing experience and expert advice to build up a reliable skill-set for the company's risk management procedures.

Technical criteria for estimating

The fundamental factors for establishing maximum losses in the three aforementioned ranges – possible, foreseeable and probable – from fire, considering only material damage, are the following:

- Separation by open space, free of any type of fuel, in buildings to prevent fire spread. If there is a predominance of liquid fuel with appreciable ground slope, specific distance calculations would have to be carried out.
- Separation by highly reliable constructed firewalls between buildings or parts of buildings to balk fire spread.
- Type of building structure (reinforced concrete, fire-protected steel frame, non-fire-protected steel frame) and material finish.
- Architectural development in horizontal and/or vertical, at great height, in basements or with difficult access for firefighters.
- Contents and layout of machinery, equipment, furnishings and merchandise that facilitate fire spread horizontally and /or vertically.
- Material means of fire protection: manual and automatic and human: first intervention teams, second intervention teams or brigades, emergency and contingency plans.
- Capacity of attacking the fire by public firefighting forces.

These general factors and other specific factors are dealt with below for each range of maximum loss:

Maximum Possible Loss

Special factors within this range are windspeeds of over 80 kph or other natural catastrophes that might occur in the zone and inoperativeness of the means of protection against fire (including inhouse automatic resources and external rescue services).

maximum losses from fire with material damage

- Minimum safety gaps with open space between buildings according to the fire risk rating: slight, normal and extra, as indicated at the end of this annex:
  - Between buildings of slight risk: minimum distance of 30 metres.
  - Between buildings of normal risk and between buildings of normal and slight risk: minimum distance of 40 metres.
  - Between buildings of extra risk and between buildings of extra risk opposite normal or slight: minimum distance of 50 metres.

- Firewall separation between buildings or parts of buildings with over 4 hours fire resistance or more if fires of longer duration are likely, such as warehouses of paper mill cores, bundles of scrap paper, cotton bales or the like.

Maximum Foreseeable Loss

Hypothesis of fire outbreak outside working hours with deficient or non-existent human surveillance; only automatic detection and extinguishing resources, if any, would act and firefighting service on call, and hence with delayed intervention.

- Minimum open-space safety gaps:
  - Between buildings of slight risk: minimum distance of 10 metres.
  - Between buildings of normal risk and between buildings of normal and slight risk: minimum distance of 15 metres.
  - Between buildings of extra risk and between buildings of extra risk opposite normal or slight: minimum distance of 25 metres.

- Firewall separation between buildings or parts of buildings with over 2 hours fire resistance or more if fires of longer duration are likely.

Probable Maximum Loss

Hypothesis of fire outbreak in working hours with failed intervention of inhouse fire protection resources, calling for intervention by the public firefighting service and a likely result of joint intervention by both.

- Minimum open-space safety gaps:
  - Between buildings of slight risk: minimum distance of 5 metres.
  - Between buildings of normal risk and between buildings of normal and slight risk: minimum distance of 10 metres.
  - Between buildings of extra risk and between buildings of extra risk opposite normal or slight: minimum distance of 20 metres.

- Firewall separation between buildings or parts of buildings with over 1 hour's fire resistance or more if fires of longer duration are likely.

Fire Risk Rating

Taken from the automatic sprinkler installation standards:

- Slight: offices, hospitals, schools, museums, residences and dwellings.
- Normal: foodstuff, beverages, cement, glass, vehicles, electrical and electronic appliances, paper, textiles, footwear, shopping and leisure centres, tobacco, wood, chemicals and non-foam plastic.
- Extra:
  - Processing plant, paint, varnish, resins, rubber, distilleries, refineries, fireworks and foam-based plastic.
  - Storage facilities: warehouses of all types with stacking heights of over 4 metres.

The Latin American INSURANCE market in 2011-2012

CENTRO DE ESTUDIOS
FUNDACIÓN MAPFRE

MACROECONOMIC PICTURE [1]

The Latin American economy remained upbeat in 2011, albeit with a certain slowdown in its growth rate, ending the year with a 4.3% GDP increase against the 6.1% rise of the year before. The growth slowdown commenced during the second half of the year, caused mainly by the international financial markets' growing qualms about the eurozone debt crisis and, to a lesser degree, the lacklustre growth of the US economy. Lower growth prospects in the region slowed capital inflows, reversing the currency appreciation trend of the first half of the year.

The biggest GDP growths were recorded by Panama (10.6%), Argentina (8.9%), Ecuador (7.8%) and Peru (6.9%). The slowdown in Brazil's growth rate accounts for much of the reduction in regional growth as a whole.

[1] The economic comments of this report are based on the ECLAC publications *Economic Survey of Latin America and the Caribbean 2011-2012* and *Preliminary overview of the economies of Latin America and the Caribbean*.

ILLUSTRATION STOCK

For yet another year domestic demand was the economy's main driving force, on the strength of the positive performance of the labour markets, high credit availability and, in some countries, increased remittances, above all from the United States. In some countries there was also an appreciable increase in the investment in construction and capital goods.

As regards foreign trade, the first half of 2011 saw a high demand for the region's export goods, this tailing off during the second half of the year as the main purchasing economies contracted. Nonetheless exports did benefit from the increase in the prices of basic export goods, enhancing once more the terms of trade.

Inflation increased during the year, driven up by the rise in international food- and oil-prices, albeit more moderately in the second half. In 11 of the 19 countries making up the study the Consumer Price Index was higher than in the previous year. Venezuela and Argentina once more recorded the highest rates, 27.6% and 9.5%, respectively, although Argentina's inflation rate fell 1.4 percentage points on the previous year. Puerto Rico (1.8%) and Colombia (3.7%) reported the lowest rates.

Economic growth continued to slow down in the first half of 2012 though most countries remained upbeat and in the black. Private demand is still the main driving force of the economy; exports were affected by the price fall in most of the region's main export goods and flagging demand, especially from Europe and Asia. In this context ECLAC forecasts a 2012 GDP growth rate of 3.2%.

INSURANCE MARKET

In 2011 Latin America's insurance market once more showed signs of strength[2], with mean nominal growth in local currency of 17.1% and a real growth rate of 9.6%, both up on 2010 (14.2% and 7.5%, respectively). Nonetheless the depreciation of local currencies against the euro in 2011 tended to check the growth in Latin American insurance premiums in euros, with premium revenue of 104,221 billion euros, representing a rise of 14.1% (19.3% in 2010).

All the countries recorded nominal growth in local currency, most with two-figure rates. The highest were recorded by Argentina (34.9%), Venezuela (25.9%), Paraguay (24.1%) and Guatemala (24.0%). In real terms there were also appreciable rises and only Venezuela recorded a fall, of 1.4%. In general, South America and Mexico showed a higher premium growth rate than the markets of Central America and the Caribbean (Puerto Rico and Dominican Republic).

Figure 1. Variation in premium volume in 2011 in Latin America.

Nominal growth in local currency

% VARIATION IN PREMIUM VOLUME 2011			
COUNTRY	**NON-LIFE**	**LIFE**	**TOTAL**
Argentina	35.0	34.2	34.9
Bolivia	16.0	18.4	16.5
Brazil	16.1	16.9	16.5
Chile	17.0	12.7	14.4
Colombia	14.8	15.0	14.8
Costa Rica	4.1	28.1	6.2
Ecuador	20.4	27.5	21.5
El Salvador	4.1	7.7	5.4
Guatemala	24.0	23.9	24.0
Honduras	6.0	19.5	9.6
Mexico	17.1	12.7	14.2
Nicaragua	11.2	13.8	11.6
Panama	19.3	0.6	14.6
Paraguay	22.2	42.1	24.1
Peru	12.4	7.1	10.1
Puerto Rico	5.3	12.3	5.9
Dominican Rep.	7.4	13.0	8.2
Uruguay	20.4	22.7	21.0
Venezuela	26.4	4.0	25.9
TOTAL	**18.1**	**15.9**	**17.1**

Source: Own statistics from the information published by each country´s insurance oversight authority.

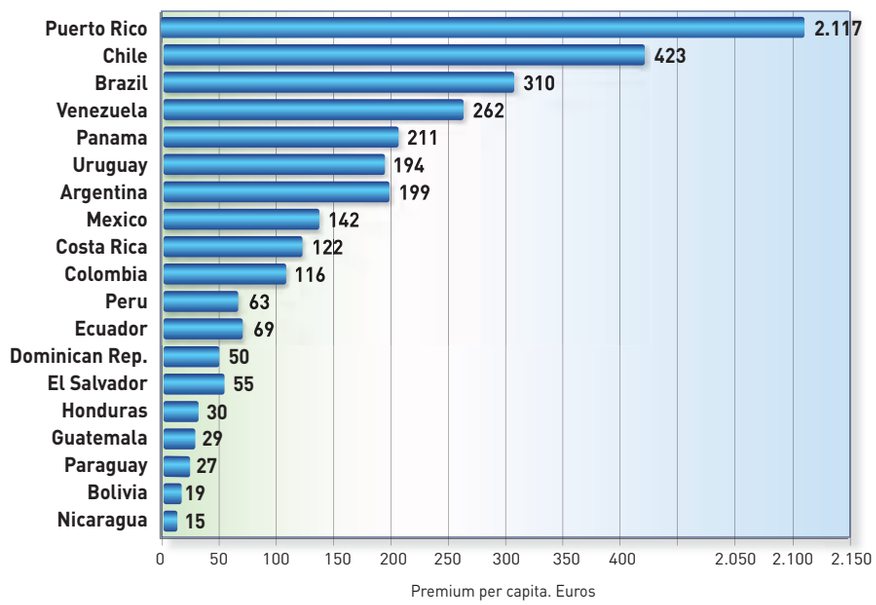
[2] According to Swiss Re figures published in its report on worldwide insurance, Latin America in 2011 held a 3.4% share of the world insurance market, a zero-point-four percentage point rise on 2010.

IN 2011, LATIN AMERICA'S INSURANCE MARKET ONCE MORE SHOWED SIGNS OF STRENGTH, WITH MEAN NOMINAL GROWTH IN LOCAL CURRENCY OF 17.1% AND A REAL GROWTH RATE OF 9.6%, BOTH UP ON 2010

Puerto Rico (2,117 €/inhabitant), Chile (423 €/inhabitant) and Brazil (310 €/inhabitant) are still the countries with the highest per capita expenditure, while the per capita premium in Nicaragua and Bolivia is lower than 20 euros. The per capita premium increased in practically all countries, whereby the region's mean insurance expenditure rose from 188 euros in 2010 to 213 euros in 2011.

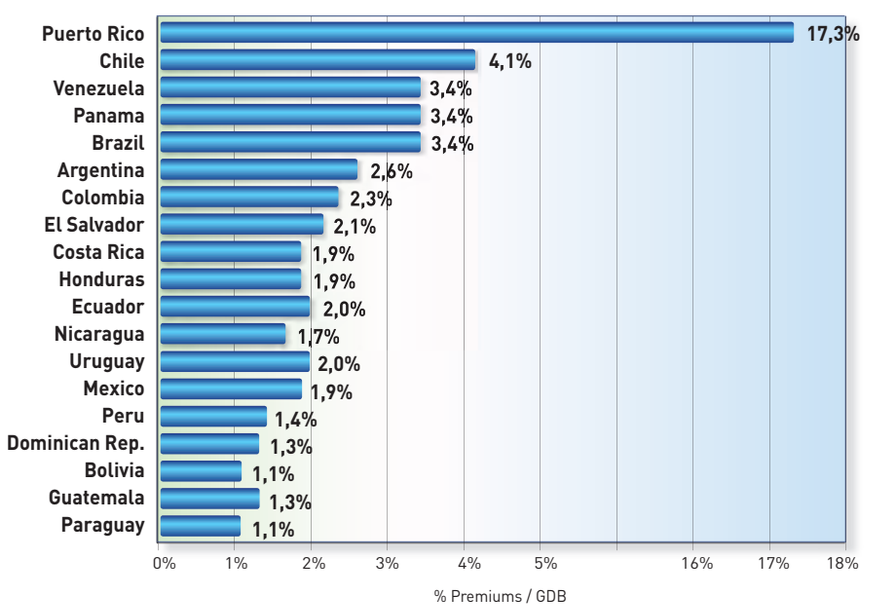
Insurance penetration, the percentage ratio of premiums to GDP, was 3% in 2011 (2.9% in 2010).

Figure 2. Latin America. Premiums per capita 2011.



Source: Own statistics from the information published by each country´s insurance oversight authority and by ECLAC.

Figure 3. Latin America. Insurance penetration 2011.



Source: Own statistics from the information published by each country´s insurance oversight authority and by ECLAC.

Puerto Rico and Chile still boast the highest ratios, 17.3% and 4.1%, respectively, followed by Brazil, Panama and Venezuela, with 3.4%.

The 104,221 billion euro premium volume for 2011 breaks down into 40% of Life insurance, 41.674 billion euros, 13.9% up on the previous year (33.6% in 2010). Brazil accounts for 59% of the premiums, so the behaviour of this market is a telltale sign of the region's life insurance trend.

Mexico and Chile are the two biggest markets after Brazil, with respective shares of 17% and 10%. If we add in the premiums of Colombia and Argentina, Latin America's five biggest Life markets have a share of 94%.

The insurance product VGBL (*Vida Gerador de Beneficio Livre*), a private Brazilian pension scheme with tax breaks, was again the main driving force behind growth, representing 45% of Latin America's

Figure 4. Latin America. Premium volume 2011 by country.

Data in millions of euros. Nominal growth expressed in euros

PREMIUM VOLUME 2011						
COUNTRY	**NON-LIFE**	**%Δ**	**LIFE**	**%Δ**	**TOTAL**	**%Δ**
Brazil	20,368	15.2	24,578	16.1	44,947	15.7
Mexico	8,678	12.4	7,202	6.3	15,880	9.6
Argentina	6,846	30.5	1,322	29.7	8,168	30.4
Puerto Rico	7,265	-0.7	666	5.9	7,931	-0.1
Venezuela	7,591	19.4	152	-1.8	7,743	18.9
Chile	2,956	20.7	4,363	16.3	7,319	18.0
Colombia	3,836	11.7	1,611	11.9	5,447	11.7
Peru	1,073	9.2	803	3.9	1,876	6.9
Ecuador	791	13.5	165	20.2	956	14.6
Panama	586	12.5	167	-5.1	753	8.1
Uruguay	498	18.6	159	20.9	657	19.1
Costa Rica	511	1.9	61	25.3	572	4.0
Dominican Rep.	430	-2.5	75	2.6	505	-1.8
Guatemala	349	21.5	85	21.3	434	21.4
El Salvador	219	-1.8	122	1.5	342	-0.6
Honduras	168	0.1	68	12.9	236	3.5
Bolivia	148	9.3	41	11.7	189	9.8
Paraguay	160	31.4	20	52.8	180	33.4
Nicaragua	75	0.2	13	2.6	88	0.6
TOTAL	**62,547**	**14.2**	**41,674**	**13.9**	**104,221**	**14.1**

Source: Own statistics from the information published by each country´s insurance oversight authority and by ECLAC.

Life premiums with an 18.2% growth rate in 2011. Mexico recorded a more moderate growth rate of 6.3% due to the fall in group Life insurance and pension insurance. Among the main markets the biggest rise occurred in Argentina, 29.7%, thanks to across-the-board growth in individual, group and retirement Life policies.

Non-Life business still accounts for 60% of total premiums, posting a 14.2% 2011 growth rate (11.4% in 2010), slightly higher than Life insurance. This favourable performance was due mainly to the region's healthy economic situation at the moment, with increases in jobs, sale of goods and cars, and also tariff hikes in the main markets. Brazil received a huge boost from the increase in infrastructure investment due to the upcoming world events there (2014 World Cup, 2016 Olympic Games) and the beginning of drilling into its subsalt oil reserves, among other major projects.

Brazil is still the biggest market, with a share of 33%, way ahead of second-placed Mexico with 14% of premiums. Next comes Venezuela, which, after losing market share in 2010 due to the devaluation of the bolívar, jumped back ahead of Puerto Rico in revenue terms. Each one has a 12% share. Argentina holds onto fifth place in this segment with 11% of premiums. These five markets between them add up to 81% of Latin America's Non-Life premiums.

Another notable feature besides the growth of Brazil's market (15.2%) was the Non-Life trend in

Argentina, with a 30.5% rise. This growth was largely fuelled by work injury compensation insurance, the second biggest line after vehicle insurance; the former put in a fine performance in 2011 (50.3%) thanks to job stability and wage rises (employers' contributions represent a remuneration percentage). Agricultural insurance also perked up, with an increase of 40.9%.

Mexico recorded two-figure growth, 12.4%, heavily influenced by the June 2011 renewal of the property insurance policy of Petróleos Mexicanos, with a two-year term. The Non-Life lines in Puerto Rico, barring health insurance, are still sluggish, recording a slight increase of 2.4% in USD but

NON-LIFE BUSINESS STILL ACCOUNTS FOR 60% OF TOTAL PREMIUMS, POSTING A 14.2% GROWTH RATE IN 2011 (11.4% IN 2010), SLIGHTLY HIGHER THAN LIFE INSURANCE

Figure 5. Latin America. Premium volume by branch 2011.

Premiums in millions of euros

LATIN AMERICAN INSURANCE MARKET 2010-2011 PREMIUMS BY BRANCH				
LINE OF BUSINESS	**2010**	**2011**	**%Δ**	**% Share**
Life	**36,597**	**41,674**	**13.9**	**40.0**
Individual and group life	32,090	36,772	14.6	35.3
Private pensions plans	4,506	4,902	8.8	4.7
Non-Life	**54,774**	**62,547**	**14.2**	**60.0**
Automobile	20,643	22,682	9.9	21.8
Health	11,796	12,851	8.9	12,3
Fire and allied lines	5,054	5,944	17.6	5.7
Other lines of business	7,321	8,938	22.1	8.6
Transport	2,312	2,668	15.4	2.6
Third-party liability	1,417	1,599	12.8	1.5
Personal accident	2,813	3,448	22.6	3.3
Credit and/or Surety	1,122	1,361	21.3	1.3
Worker compensation	2,297	3,057	33.1	2.9
TOTAL	**91,371**	**104,221**	**14.1**	**100.0**

Source: Own statistics from the information published by each country´s insurance oversight authority and by ECLAC.

translating into a 0.7% fall due to the dollar's depreciation against the euro. This is largely explained by the country's difficult economic juncture, aggravated by fierce competition. The increase in health insurance premiums was due to the Medicare products.

As for the behaviour of the respective business lines, it was work-accident and personal-accident insurance that chalked up the biggest growth rates in 2011, 33.1% and 22.6%, respectively. The former rise was fuelled by significant increases in this business line in Argentina and Colombia, the main markets. The increase in personal accident insurance was driven by Brazil, a market cornering 49% of premiums and recording a 35.3% growth rate.

Another line that grew considerably in 2011 was fire and allied lines. In this case the main market is Mexico, which recorded a notable increase of 40.1% in this line.

MARKETS OF BRAZIL, MÉXICO, VENEZUELA, PUERTO RICO AND ARGENTINA ADDED UP TO 81% OF LATIN AMERICA'S NON-LIFE PREMIUMS

The most important business transactions in 2011 were the following:

- In July 2011 Banco Santander signed an agreement with Zurich Financial Services Group whereby the latter acquired 51% of the holding company pooling the insurance subsidiaries in Latin America (Argentina, Brazil, Chile, Mexico and Uruguay). Under this agreement Zurich will take on management of the companies and the bank will distribute the insurance products in each one of the abovementioned markets through its network of offices for the next 25 years.
- Grupo de Inversiones Suramericana (Grupo Sura) took over ING's pensions and Life insurance business in Latin America. The sale excludes the Dutch group's 36% stake in the Brazilian insurance company SulAmérica. In 2011 the Colombian group also took over the Dominican insurance company Proseguros and one of El Salvador's main insurance companies, Aseguradora Suiza Salvadoreña (Asesuisa).

- In April the German group Talanx announced the takeover of the Argentine and Uruguayan units of L'Union de Paris, and then in July the purchase of the Mexican company Metropolitana.
- To continue growing in Medicare Advantage, the health product that has put in the best performance over recent years in the Puerto Rican market, Triple-S announced in January the purchase of American Health's operations in Puerto Rico.
- The Brazilian company Marítima Seguros reached an agreement for selling 50% of its capital to Yasuda Seguros, belonging to the Japanese group Sompo.
- In October 2011 the Spanish group BBVA reached an agreement for the sale of its Argentine occupational-risks subsidiary, Consolidar ART, to the Argentine medical services group Galeno.
- In December 2011 ACE Group announced the purchase of the Ecuadorian company Río Guayas, the country's fourth biggest insurance company owned by Banco de Guayaquil

Latin American insurance companies, moreover, posted net 2011 results of 8,476 billion euros[3], 4.5% up on the previous year, with particularly important growth rates in Argentina (69%) and Peru (46.5%). In these countries the profit stemmed mainly from the financial result since the technical result was negative, with combined ratios of over 100%. Excellent results were also posted by lesser markets such as Paraguay (70.4%), Guatemala (56.9%) and Dominican Republic (52.9%). This result was favoured by the improvement in the combined ratio (lower than 90% in Paraguay) together with a good financial result.

[3] Excluding Puerto Rico

The countries recording a negative growth rate (Bolivia, Chile, Colombia, Honduras and Uruguay) suffered mainly from the lower financial result since the technical result was more favourable. In the case of El Salvador, Nicaragua, Panama and Venezuela, the net result rose in local currency so the decline has to be put down to the depreciation of their various currencies against the euro.

Natural disasters, for their part, had no significant impact on results. The main events affecting the region in 2011 were floods but insured damage was negligible. In 2012 earthquake-related insured losses affected Costa Rica and Guatemala in September and November, respectively; they are expected to be minimal.

The ongoing economic buoyancy of these countries is still driving the insurance activity, which recorded a mean nominal growth in local currency of 19.3% for the total market in the first half-year of 2012, with figures of 24.1% and 16.6% for Life and Non-Life lines, respectively. The biggest push, therefore, came from Life insurance, mainly from Brazil, which increased its production by 31.8%. Mexico, the second biggest market, also performed well, with a 13.9% rise in local currency.

Growth rates were very similar for premium volumes in euros, at 19.1% for the total market, with revenue of 60,054 billion euros, 41% of this figure corresponding to Life and 59% to Non-Life. During this period the currencies of Chile, Colombia,

Figure 6. Latin America. Net Result 2011 by countries.

NET RESULT (millions of €)			
COUNTRY	**2010**	**2011**	**%**
Brazil	4,745	5,392	13.6
Mexico	904	991	9.7
Argentina	352	595	69.0
Venezuela	422	402	-4.8
Chile	692	259	-62.5
Colombia	481	239	-50.4
Peru	160	234	46.5
Costa Rica	61	78	27.1
Panama	54	48	-11.5
Ecuador	38	48	25.4
El Salvador	40	39	-2.7
Guatemala	24	37	56.9
Dominicana Rep.	23	35	52.9
Honduras	30	28	-6.2
Uruguay	51	17	-66.9
Paraguay	8	14	70.4
Bolivia	14	11	-17.9
Nicaragua	10	9	-5.1
TOTAL	**8,108**	**8,476**	**4.5**

Source: Own statistics from the information published by each country´s insurance oversight authority.

Mexico and Peru appreciated strongly against the euro, while the European currency gained ground against the other Latin American currencies.

Work injury compensation insurance is still doing the briskest business, with local currency growth rates of 35.5% in Argentina and 19.7% in

LATIN AMERICAN INSURANCE COMPANIES POSTED NET 2011 RESULTS OF 8,476 BILLION EUROS, 4.5% UP ON THE PREVIOUS YEAR

Figure 7. Latin America. Premium volume by countries, first half 2012.

Data in millions of euros. Nominal growth in euros

PREMIUM VOLUME. First half 2012						
COUNTRY	NON-LIFE	%Δ	LIFE	%Δ	TOTAL	%Δ
Brazil	10,552	6.2	14,804	24.9	25,356	16.4
Mexico	5,011	13.4	4,007	11.9	9,018	12.7
Argentina	4,497	38.7	890	25.8	5,387	36.4
Venezuela	4,764	44.8	85	19.9	4,849	44.3
Chile	1,620	19.4	2,531	16.5	4,151	17.6
Puerto Rico	3,698	2.1	379	18.4	4,077	3.5
Colombia	2,346	29.3	965	25.1	3,310	28.1
Peru	603	21.5	459	17.1	1,062	19.6
Ecuador	472	17.1	103	36.5	574	20.2
Panama	323	15.4	93	15.6	416	15.4
Costa Rica	310	26.6	54	41.1	364	28.6
Uruguay	258	23.5	101	42.0	359	28.2
Dominican Rep.	245	18.7	41	19.5	286	18.8
Guatemala	197	0.5	47	6.5	244	1.6
El Salvador	108	12.4	69	22.7	177	16.2
Honduras	99	20.3	39	26.8	138	22.1
Paraguay	104	21.0	14	34.6	118	22.5
Bolivia	92	37.0	25	25.3	117	34.3
Nicaragua	43	18.1	8	40.8	51	21.1
TOTAL	**35,339**	**17.5**	**24,714**	**21.5**	**60,054**	**19.1**

Source: Own statistics from the information published by each country´s insurance oversight authority.

Colombia. Vehicle insurance, holding the biggest Non-Life share[4], also fared very well throughout this period, with eye-catching rises in Argentina (31.3%) and Mexico (13.1%).

The most notable business transactions were the following:

- In March 2012 the Australian QBE Insurance Group announced an agreement for purchasing HSBC La Buenos Aires. The transaction includes a 10-year agreement for offering QBE's general insurance products to HSBC clients. HSBC Seguros will continue trading in life and retirement insurance in Argentina.

[4] There are no broken-down figures for all lines in Ecuador, Puerto Rico and Venezuela.

- On this same date HSBC announced the sale of its general insurance business in Mexico to the French group AXA. The transaction includes an exclusive 10-year distribution agreement under which HSBC will distribute these products through its network of branches.
- In July 2012 the British group RSA completed the takeover of the Argentine companies El Comercio and Aseguradora de Créditos y Garantías, previously owned by Newbridge Latin America, a private US capital fund. The company thereby ups its profile in Argentina and increases its commercial network in the country.
- Zurich sold to Grupo La Boliviana Ciacruz 51% of its shares in both La Boliviana Ciacruz and Zurich Boliviana Seguros Personales.
- In September 2012 the US group Liberty Mutual announced the expansion of its operations to Ecuador through the acquisition of two companies, Panamericana and Cervantes. The company is already trading in Argentina, Brazil, Chile, Colombia and Venezuela.
- In October 2012 MAPFRE and Galeno reached an agreement for transferring MAPFRE's Argentine occupational-risks and health activity to the Argentine company. The transaction also allows for commercial collaboration between both companies.
- In November 2012 Grupo Sura received authorisation from the Peruvian authorities for acquiring 63% of the local insurance company Invita, from Grupo Wiese.

Finally, a brief outline is given of the main legislation changes in the two years under study:

- Decree (*decreto*) 2038/2012, published on 26 October 2012, passed the Occupational Accident and Professional Diseases Compensation Act (*Ley 26.773 de Régimen de ordenamiento de la reparación de los daños derivados de los accidentes de trabajo y enfermedades profesionales*), which amended Argentina's Occupational Risks act (*Ley de Riesgos del Trabajo*). The main change under the new legislation is that injured workers or their kin will have to opt exclusively between the compensation arrangements under this system or those they might be entitled to under another liability system. The different liability systems cannot be combined.
- As for Chile's insurance legislation, in 2011 the Insurance and Securities Watchdog body (*Superintendencia de Valores y Seguros*) published a significant part of the risk-based supervision legislation, such as the General Law 309 on Corporate Governments (*Norma de Carácter General nº 309 sobre Gobiernos Corporativos*) and, at the end of the year, General Law 325 on Risk Management Systems (*NCG nº325 sobre Sistema de Gestión de Riesgos*).

Another attention-grabbing development in 2011 was modification of the Commercial Code (*Código de Comercio*) in terms of the insurance contract. This code regulates Chile's basic and fundamental insurance legislation and

THE *LEY DE INSTITUCIONES DE SEGUROS Y FIANZAS*, PRESENTED IN THE SENATE , BRINGS IN A NEW REGULATORY FRAMEWORK, SIMILAR TO THE SOLVENCY II SCHEME, TO GUARANTEE THAT INSURERS AND GUARANTORS HAVE SUFFICIENT RESOURCES TO COVER THEIR LIABILITIES AND RISKS

substantial amendments have been brought in to modernise the current legislation. The Bill has already been approved by the lower and upper houses (*Cámara de Diputados* and *Senado de la República*), so the new law will soon be passed. Under the deadlines laid down in the Bill, the amendments are due to come into force during the first half of 2013.

- In October 2012 the president of Mexico, Felipe Calderón, presented an initiative in the Senate to create the Insurance and Finance Institutions Act (*Ley de Instituciones de Seguros y Fianzas*) to replace the General Mutual Insurance Societies and Institutions Act (*Ley General de Instituciones y Sociedades Mutualistas de Seguros*) and the Federal Finance Institutions Act (*Ley Federal de Instituciones de Fianzas*). The new legislation brings in a new regulatory framework, similar to the Solvency II scheme, to guarantee that insurers and guarantors have sufficient resources to cover their liabilities and risks and to meet their obligations. The *Ley* also moots reforms to the Insurance Contract Act (*Ley Sobre el Contrato de Seguro*).
- In March 2012 the plenum of Panama's National Assembly approved in third debate the insurance activities Bill (*Proyecto de ley 360*). The most notable reforms are the following: recognition of the Insurance and Reinsurance Supervisor (*Superintendencia de Seguros y Reaseguros*) as an autonomous state organisation, bringing it out from under the aegis of the Ministry of Trade and Industry (*Ministerio de Comercio e Industrias*); it lays down the requisites and guarantees for setting up insurance companies; it adopts the International Financial Reporting Standards (IFRS) as its accounting system and determines the requisites for marketing insurance policies through alternative outlets, etc.
- In November 2012 Peru passed its Insurance Contract Act (*Ley del Contrato de Seguro*). This new law seeks to set up a legal framework for the insurance contract, currently regulated by the 1902 Commercial Code (*Código de Comercio*). The law also takes in the current legislation of the Consumer Code (*Código de Consumo*), with the aim of developing clear protection of the insured. Among other provisions the law forbids the use of abusive practices and clauses by insurance companies and lays down conditions on contract renewal and validity while also regulating premium default conditions, etc.

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Gerencia de Riesgos y Seguros

ENGLISH APPENDIX

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