

## Coverage for catastrophic risks concerning natural disasters and political risks

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## Coverage for catastrophic risks concerning natural disasters and political risks <sup>1</sup>

by

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The International Assembly of Insurance Technicians in Spain in 1947 defined a catastrophe as: « A risk which is produced, generally, by an extraordinary cause, arising from natural causes and affecting persons and/or property risks which in their immediate effect are of unusual extent and volume, and which are not foreseeable, and consequently do not conform to regular statistical laws (according to contemporary scientific conception) ».

The catastrophe in question can result, therefore, from events outside man's control (natural disaster) or from actions taken by man; to be more precise, man can deliberately do something to cause the catastrophe (as is case with so-called political risks) or his action can simply be at the root of the catastrophe (negligence or ignorance of the effects that a certain decision could have).

From the insurance point of view, the evaluation of these risks — resulting from natural disasters or from deliberate human actions — is largely impossible, as is human intervention, and they can, therefore, be defined as damages of a catastrophic nature — which we understand to be the accumulation of serious occurrences of a similar nature — and which

<sup>1</sup>C'est avec plaisir que nous reproduisons ce travail communiqué au Rendez-Vous de Septembre de 1979 par M. Coppola Di Canzano. Il indique de façon fort intéressante l'attitude des assureurs devant le risque catastrophique et le risque politique. Comme on sait, les assureurs sont extrêmement réticents à garantir ce dernier. Aussi, l'étude de M. Canzano arrive à point pour préciser certains aspects du sujet.

make it very difficult to compile a normal statistical analysis in order to reach a precise definition of the risks and, consequently, to determine the premiums involved.

Even if these problems could be resolved, the insurer would still be faced with the insurmountable problem of the dimensions that the damages may reach.

In this connection, the estimate of the possible damage resulting from the recurrence of certain natural events is very enlightening. According to the reports issued by UNESCO's Working Group for Earthquake Risks — reports considered as the most accurate by other research groups — an earthquake similar to the one in San Francisco in 1906 could cause damage to the value of 50 billion dollars.

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A repetition of the Tokyo earthquake of 1923 would cause damages exceeding 100 billion dollars.

With reference to more recent records, we know that the violent earthquake that struck Friuli in 1976 — magnitude 6.5 — will incur costs for re-construction equivalent to 3.000 billion lire, a figure which is just under the amount of the total premium income of the whole Italian insurance market for the same year, although the epicentre of the quake was in neither a densely populated nor a particularly rich area. This last figure would be doubled in the case of a cyclone of similar force to « Tracy » hitting a fairly large city instead of a small town like Darwin.

In the face of these figures, it seems pointless to have recourse to the insurance principles which fix the insurability conditions with respect to different risks: here, one can only say that it is impossible for private insurance to provide complete coverage for certain risks.

This does not mean that the insurer should brush the problem aside. As an operator in the safety sector, having

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taken into account the primary need for solvency, he must keep looking for the solution that could reduce the importance of these risks for the community in the case of great disasters, or he may risk damaging his own good name, the reputation of his profession and the insured's community.

148 It is my opinion that solutions orientated towards co-operation between insurers, the government and the population must be sought. With the help of the government, it is always easier to spread out the weight of insurance coverage (without making it impossible to cope with) by making the people exposed to the disaster bear the brunt of it. The government has to act as a back-up reinsurer in case of a particularly serious disaster. The insured, however, ought to take on the role of co-insurer: in this respect, insurance policies must include deductibles for minor and medium damage and give coverage up to a certain predetermined level, in such a way as to fulfil the threefold purpose of allowing the injured party to resume activity, to avoid, as far as possible, the enormous difficulties that arise in dealing with a large number of losses and simultaneously, enable him to help in the safeguarding of the damaged area, particularly with regard to fires that frequently occur along with natural disasters.

Joint intervention by the insured, the insurer and the government — as regards risks which are as much natural risks as political risks — will undoubtedly be an important step towards formulating our future policy. To date, decisions made by insurers and reinsurers have too often been guided by limits imposed on an occasional basis or by situations connected with insurance demand, or by experience gathered over a limited period of time, (having, consequently, little significance) or by momentary imbalance between the great capacity of certain companies and the chance offered by the market. Neither does these exist, in my opinion, sufficient collabora-

tion between insurers and re-insurers, either at a national or an international level, in spite of the fact that efforts have been made to improve this situation, as this very meeting demonstrates.

A far stricter control on the limits of coverage by the ceding companies is one of the most important requirements for such co-operation, as it would avoid miscalculation on the part of the ceding company of its own risks and, consequently, its failure to pay, and as it would increase the feeling of mutual trust; inciting, therefore, professional reinsurers to enlarge their capacity.

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### **I — Attitude of the insurer toward natural disasters**

We accept the fact that natural disasters are to some extent partially controllable, but there is always the possibility that some action can be taken to control them.

A typical example is that of earthquakes, for which many countries have at their disposal seismographic charts, and the effects of which can be controlled by paying particular attention to the areas in which buildings are to be constructed. This is also true of floods whose effects can be minimised by avoiding construction in the danger area and by providing canal systems to carry away the water. The use of satellites has also proved essential for the cyclone warning system.

Moreover, there are now certain types of technical instruments that make possible some sort of evaluation of the likely economic consequences of the damage. For example, by using seismographic charts and with the co-operation between state agencies, local agencies and various other types of organization, it is possible to pinpoint the epicentre of an earthquake, its probable magnitude, the type of damage caused in the past and the frequency of the quakes, all of which are important

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factors when subdividing a region or an entire country into homogenous geographical risk areas.

For this, the insurer has useful data at his disposal to assist him in his attempt to define the technical rate (linked to the size and frequency of the earthquake) and to calculate the MPL (linked to the size of the earthquake and the type of risk assumed).

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Without beating around the bush, it seems right at this point to underline the fact that while all these reports are indispensable when it comes to drawing up a picture of the exposure to risk where natural disasters are concerned, the worst catastrophes are, in spite of everything, uncontrollable: the epicentre of the 1976 Friuli earthquake was in a totally unpredictable area; and the MPL survey has often proved to be somewhat unreliable, even in sectors where evaluation is so much easier, such as in Fire Risks. Even with the general use of high deductibles, and in spite of the fact that more and more sophisticated instruments are available, it is quite clear the insurers cannot, beyond a certain point, cope, alone, with the coverage of disaster risks.

As was foreseen by the « Association Internationale de Droit des Assurances », at the last conference in Madrid, governmental intervention is essential in dealing with natural disasters, whether this intervention be at an operational level (as 2nd line reinsurers) or at the statutory level. In this respect there are a number of different examples.

The National Flood Insurance Act, introduced in the USA in 1968, provided for collaboration between governmental organizations and private insurers entrusted with the management of contracts through all stages. Insurance premiums were to be subsidised by the government by as much as 90%. But in spite of this, this plan appears, until now, to have

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been rarely used. Even in zones where there is a high risk of flooding, the inhabitants seem convinced, on the one hand, of the small likelihood of flooding, and, on the other hand, of the possibility of receiving public subsidies in the event of damage, including low interest reconstruction loans, quite apart from the 5,000 dollars loan initially provided by the Federal Disaster Relief for this very purpose.

In 1972, when hurricane Agnes hit the eastern states of the USA, the damage was estimated at more than 3 billion dollars, of which less than one billion was insured, even though the areas that were hit had been recognized as being highly exposed. However, after this catastrophe, the number of policies almost trebled and insured capital increased 5-fold, reaching almost 5 billion dollars. In order to encourage underwriting, the insurable amount has again been more than doubled to facilitate transactions (e.g. 35,000 dollars for private dwellings and 100,000 for other buildings) — this measure coinciding with a number of other steps taken for the same purpose.

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The Japanese insurance program for earthquakes, started in 1964 by local associations of property insurers, is perhaps one of the most complex programs and also the one most frequently quoted as an example. At present, the program provides insurance coverage — limited to private property — against earthquake, tidal wave and volcanic eruption risks, only in case of total loss. Through comprehensive household policies, it automatically grants a guarantee with a maximum of 2,400,000 yen per building and 1,500,000 yen for the contents, as long as this does not exceed 30% of insured value of the policy. The entire underwritten risk is then ceded to an ad hoc reinsurance company which retrocedes part of the risk to the initial insurer and part to the government on a quotation share basis, in such a way that if the loss caused by a single

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earthquake is estimated at between 20 and 100 billion yen, half of the amount in excess of 20 billion yen is subsidised by the government, whose intervention is fully secured in the case of a loss exceeding 100 billion yen.

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The plan was put to the test by an earthquake in June 1978; out of a total of 1,177 houses that were completely destroyed, only 171 were insured for a total capital paid, amounting to 242 million yen. The limit — which was set extremely low for the sum insured — and the restrictive nature with respect to total loss have come under severe criticism from the public and from the press; the whole idea is now under revision which should, in particular, involve an increase in the limits of coverage and the methods for handling partial loss.

Less well known, but nonetheless worthy of mention is the Columbian plan, completed at the end of 1976.

The country was divided into a number of areas: the aggregate of risks assumed by the same insurer within each single area constituted a single risk; the MPL was fixed at a level equal to 30% of this « single risk ». The maximum exposure to risk allowed (in terms of the MPL) was fixed at 20% of the free assets: if after the usual reinsurance cession, the exposure to risk exceeds 20%, any excess thereof must be reinsured abroad by way of stop loss reinsurance.

The reserves for catastrophes must be equal to 80% of the retained premiums (this is binding for both the direct insurer and the national reinsurer), they can never be disinvested, they cannot be taxed (except in the case of termination of activity in the sector) and — something which is very interesting — there is a provision for their investment exclusively in State securities issued in foreign currency (dollars in this particular case).



The Columbian decision to invest reserves in foreign currency and to have a sound reinsurance programme of earthquake risks abroad has brought some extremely important factors into play. It seems obvious that it is of little significance for a developing country to set aside reserves, even a significant amount, in national currency. When the event occurs, investments (in securities or otherwise) are, out of necessity, sold and the country finds itself deprived of a part of its own funds: the impoverishment which was to be avoided by way of insurance will in any case be transferred to the whole country by the damaged area.

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The danger has little significance where the loss resulting from a single event is unimportant in relation to the national wealth, but it is, of course, quite serious in developing countries and also in some rich countries, such as Japan, where a disaster can take on colossal proportions. One still wonders, in spite of all the above whether the world market has the capacity to cover disaster risks. The answer obviously lies with the major reinsurers, but it is my opinion that the problem can be solved through international co-operation with a view to overriding fiscal restrictions (equalization reserves) and other restrictions such as those in connection with exchange control, which jeopardize this co-operation.

An example of necessary intervention on a legislative level by a public body is the recent provision introduced by the Insurance Commissioner of California relating to the earthquakes that occur in that state. Between 1929 and 1968, the companies in California that offered policies against earthquakes collected premiums to the value of about 150 million dollars, while paying out less than 5 million. In view of these results — obtained from the areas where there is a greater risk of earthquakes — and of the fact that, in this particular sector, insurance is virtually non-existent, many companies

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started to encourage business by offering insurance at an extremely low rate, sometimes even disregarding the balance between their own means and the actual risks. The steps taken by the Commissioner have remedied the situation to a certain extent as all insurers must now record every single earthquake policy subscribed and are required to provide any information (area of underwriting — California has been divided into seismic areas — MPL and the reinsurance policy followed) that would be useful in evaluating the accumulation of risks in each seismic area; whether all this be done directly by the insurer or by the reinsurer.

In my opinion, this is the kind of intervention that should to the fullest extent be applied as a general rule. As I have said before, the fact that it is required of the insurer to keep strict control of his records for possible disaster risks, not only secures the insurer's own solvency, but also encourages the reinsurer to underwrite to his full capacity, without any hesitation he may otherwise have if the accumulation was not well known or up-to-date.

The structures of partnership between the private insurer and the government are relatively new and can be improved; there is no doubt, however, that in their professional capacity, private insurers, collaborating, when necessary, with the government, can solve many important problems. Examples of this are the natural disaster relief schemes in relation to agriculture (hail and crop insurance in particular), for which many countries have found solutions that could provide useful information for plans regarding the natural disasters that concern us.

Finally, it must be remembered that there is a growing interest with regard to these risks on the part of specialized public and private organizations, particularly on an inter-

national level, which should also benefit from the contribution of the insurers.

### **II — Attitude of the insurer vis-à-vis political risks**

Political risks constitute a heterogeneous group that ranges from constitutional strikes to offences against public order and even civil war. First of all, they represent a social problem: any distortion of cultural and economic growth can generate a feeling of rejection which may often develop into a destructive attitude having no economic purpose per se for those who commit such acts.

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Confronted with criminal acts perpetrated with the intention of causing the greatest possible damage, the insurer has always adopted — at least in theory — restrictive solutions. However, in many countries they are not in fact excluded from the general conditions of the policy and thus they are tacitly included in the insurance coverage.

As has already been shown above with regard to natural disaster risks, there is, in practice, no basic philosophy governing the underwriting of political risks, although a philosophy does seem to be evolving. Reasoning is still based on immediate previous experience: as long as the acts of violence continue to be sporadic, there is no serious difficulty; the insurers content themselves with a relatively low additional premium in return for the coverage provided. If, on the other hand, these crimes multiply, more restrictive conditions will be imposed until cover is refused, and so on.

However, this approach is open to criticism and in the case of political risks it becomes increasingly difficult to put into practice:

- the act of destruction engenders, through mass media, what could be defined in military jargon as « an act of

sympathy »: assassination, arson and strikes produce a chain reaction, even beyond national boundaries, before there is time to take adequate measures;

- 156 — political risks are covered jointly with other risks (generally with « property »). This creates problems of evaluation as regards the accumulation of value of the insured risks, makes it more difficult to define underwriting limits (in value and in time) and to cancel political risk coverage. It would therefore be preferable if they were written in separate contracts as is already the case, for example, with Aviation Insurance.

Furthermore, these coverages call for a different approach in contrast to traditional policies, with respect to the contents and also to the reinsurers:

- the transfer of experience from one country to another is almost impossible; if the effects are the same, the causes and the operational methods are different and every country has its own solution to the problem. From an insurance point of view, it is not only the definition of risks and rates which must be changed, but also the conditions of insurance, and the latter have to be changed radically;
- of course, the notion of MPL loses its meaning when the intention of the offenders is to cause as much damage as possible: this must be taken into account in the relationship between insurer and reinsurer.

Taking for granted that there can never be an exposure to risk greater than the values that can be accepted by a single company and that, therefore, limits of liability must be fixed, we know that, even for political risks, effective preventive measures can be taken to reduce considerably the probability of the crime or the extent of damage. There are various

agencies and organizations that have begun analytical studies of the phenomenon of crime in relation to political risks and of the causes and effects of this phenomenon. The roots of the crime, its development, its climax and the aftermath are all being studied and at every stage appropriate measures are suggested to prevent the crime or to reduce its effects.

Everyone who is concerned with the protection of domestic, industrial and commercial units must be made aware of this sort of problem.

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To conclude, I would like to suggest that control and prevention in this and in other sectors, together with a close co-operation between the insured, the insurers and the public authorities, could enable us to cope with the huge problems of providing coverage for catastrophic risks.

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**Investir dans les oeuvres d'art**, par Louis Bruens. Chez François L. de Martigny, à Montréal.

Nous signalons à nos lecteurs cet ouvrage paru récemment, dans lequel Monsieur Bruens étudie l'oeuvre d'art sous l'angle du placement. Ceux qui achètent une peinture ou une oeuvre d'art pour le plaisir qu'elle leur apporte liront malgré tout avec intérêt cet essai de Monsieur Bruens, dans lequel il indique à la fois une méthode d'évaluation et des exemples d'extraordinaires hausses de valeur, aussi bien au Canada qu'à l'étranger. Le livre intéressera assurément ceux qui s'effraient de la dépréciation de la monnaie et, d'autre part, constatent l'appréciation assez extraordinaire de l'oeuvre d'art dans notre pays, comme à l'étranger.