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Reinsurance: how insurers protect themselves

(part 1)

Some basic concepts and a few numbers

It is often said that the insurance industry possesses a rather peculiar feature: the true cost of its product, the insurance policy, becomes known only at the end of the deal (in certain cases only after some years after that). In fact, it is only following the expiry of the policy that insurers realise if they have made a profit or a loss. This means that today they have to sell policies at a price that is believed to be sufficient to cover the losses that, based on a number of assumptions, are estimated to be likely to affect a specific policy or – better – a given group of homogeneous policies, commonly defined as a **line or class of business** (motor liability, property, marine, personal accident etc.). Only time, and actual claims experience, will reveal how close to (or how far from) the reality such assumptions were. This situation may be described as a **reversal of the production cycle.** In fact, what happens in the insurance industry is exactly the opposite of what happens in other economic sectors, where the cost of the product is known before it goes on the market.

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A line of insurance policies covering the same risks or similar risks constitutes a book of business or a **portfolio**. Thus we have a property book, a marine book, an engineering book etc. Each portfolio is exposed to losses whose **severity** and **frequency** vary from territory to territory and from time to time depending on a number of factors which are in essence either very difficult to predict or unpredictable altogether. Some of these events may cause large individual losses (for example the disaster of *Costa Concordia*, the luxury cruise ship that struck a rock off the Italian western coast on 13 January 2012, where the value of insured losses is in the region of EUR 400 million) or affect a large number of risks at the same time (a storm or a tsunami, like the one that affected Japan on 11 March 2011 causing material damage and business interruption losses, covered by insurance, in the region of USD 35 billion (*Swiss Re,* Sigma 2/2012)) so generating a significant number of insurance claims.

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Insurance is a **risk transfer** transaction by which the insureds, the policyholders, move some of the risks that they have to face daily (e.g.: causing bodily injury to other people, having their home burned by fire, suffering an accident whilst practicing a

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sport etc.) to an insurance company in exchange for a price that is commonly known as **premium.** Likewise, reinsurance is a risk transfer transaction by which an insurance company, after taking on risks from its customers, transfers part of such risks to reinsurers, so mitigating its own exposure to losses, reducing the volatility of the results of its business and achieving a more predictable claims cost. Unlike insurance, where the deal is entered into between a consumer and a company, where, in the vast majority of the cases, the bargaining power of the parties cannot be regarded as equal, reinsurance is a **business-to-business arrangement**, that is to say a transaction concluded between professionals of comparable competence and expertise.

Insurance and reinsurance seem to be very popular businesses: the overall **2011 worldwide direct premium volume** (all classes of insurance) is estimated to be in the region of USD 4,600 billion - 57% generated by life and 43% by non-life insurance (*Swiss Re,* Sigma 3/2012), out of which the amount of USD 180 billion, circa 4%, is estimated to represent the payout for reinsurance arrangements (*International Association of Insurance Supervisors,* Global Insurance Market Report 2012). From a **geographical point of view** reinsurance is transacted virtually in all continents, but the largest professional reinsurers are in fact located in Europe, where 60% of the total reinsurance premium is estimated to be generated, and in the

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United States, which account for 30% (*International Association of Insurance Supervisors,* Global Insurance Market Report*, 2012*). As reinsurance also plays a significant role in the economic life of the countries, it is not surprising that in certain developing areas it is still a business run by state companies rather than private enterprises.

To get an idea of the importance of reinsurance nowadays it is useful to recall that, in 2011, 325 natural catastrophes and man-made disasters caused economic losses estimated at USD 370 billion - the earthquake in Japan accounting for at least USD 210 billion - out of which approximately

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USD 116 billion, roughly one third of the total, were covered by insurance (*Swiss Re,* Sigma 2/2012). A significant part of this amount was or will be paid by the reinsurance market. It is fair to say that, without reinsurance, insurers would be unable to provide coverage for catastrophe losses, such as earthquakes or hurricanes, or unusually exposed risks – or that such covers could be arranged only at unsustainable premium levels.

Insurance companies which do not wish or cannot afford to bear the entire burden of the losses stemming from the risks they have written may therefore mitigate their ultimate exposure by means of reinsurance. This is

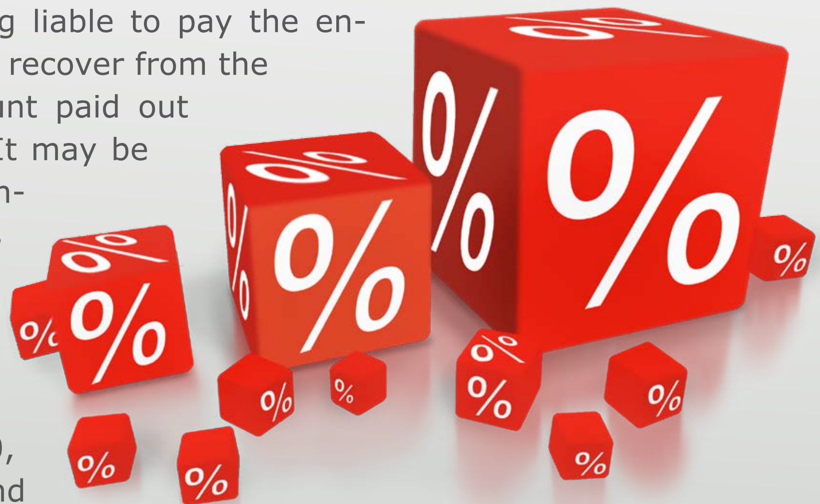
a contract made between an insurance company - the **cedant** or the **reinsured -** and one or more reinsurers whereby the cedant and the reinsurers agree to

- share one or more risks (proportional reinsurance), or
- have the cedant reimbursed for the portion of the reinsured's losses which exceeds a given amount in exchange for a premium (non-proportional reinsurance).

In general, reinsurance may be viewed as an alternative means of obtaining capital to finance the underwriting activity as it can make an insurance company's results more predictable by absorbing large losses and reducing the amount of capital needed to provide coverage, especially for extreme events. By choosing a particular type of reinsurance method, the insurance company may be able to create a more balanced and homogeneous portfolio of insured risks. This would lend greater predictability to the portfolio results on net basis, i.e. after reinsurance.

Proportional reinsurance

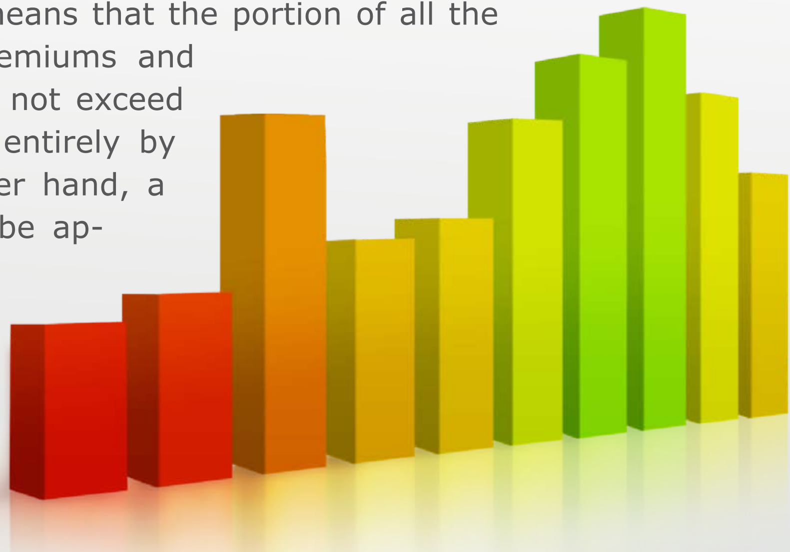
In the form known as **proportional reinsurance,** risks, premiums and losses are ceded and accepted in the same proportion. This means that the transfer of 30% of the risk is effected in exchange for 30% of the premium associated with that risk. In case of loss, the cedant, whilst remaining liable to pay the entire loss to the claimant, will recover from the reinsurer 30% of the amount paid out in settlement of the claim. It may be said that under a proportional arrangement reinsurers participate in the business written by the cedant as if they were in a partnership. In our simplified example, if the sum insured is 100,000, the premium is 10,000 and the loss is 30,000, the reinsurer will take on a risk worth 30,000 for a premium of 3,000 – and will end up paying a loss of 9,000. The balance will be retained by the cedant for its own



net account. In addition, the reinsurer will allow a ceding commission to the insurer to cover distribution, underwriting, administration and claims handling charges.

There are two main forms of proportional reinsurance: quota share and surplus. Under a **quota share reinsurance,** reinsurers accept to be liable for their proportionate share of all losses affecting the ceded book of business. Such reinsurance, whilst not changing the reinsured portfolio claims' pattern, has the effect of reducing the amount of each single loss and, consequently, the reinsured's overall loss cost. It creates a sort of partnership between the cedant and the reinsurer which may be seen as very similar to a true joint venture.

Under a **surplus reinsurance** arrangement, the reinsurer agrees to take on risks whose sum insured exceeds a certain limit or line, which constitutes the **retention** of the insurer. If, for example, the value of the line is fixed at 5 million, this means that the portion of all the risks - and associated premiums and losses - whose value does not exceed 5 million will be retained entirely by the reinsured. On the other hand, a risk worth 20 million will be apportioned as follows: 5 million (1 line or 25% of the risk) will be retained by the cedant and 15 million (3 lines or 75%) will be transferred to reinsurers. Premiums and losses will be distributed between the cedant and its reinsurers in the same proportion (cedant: 25%; reinsurers: 75%). This form of reinsurance allows the reinsured to retain entirely the premium generated by smaller risks and, at the same time, reduces the retained loss cost on larger risks. A cedant may wish to seek surplus reinsurance to limit the losses it might incur from a small number of large claims as a result of fluctuations in its loss experience.



Antonio Azzano
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