Non-life insurance and economic development

(part 1)

*This article is the first in a series from the Generali R&D Department, where the **diffusion of insurance activity** across space and time will be explored in relation with the general degree of **development** of regions and countries and with some particular **features** of the **economic system:***

- *financial development and **credit conditions***
- *property rights protection and the efficiency of the **legal system***
- *social interactions, social cohesion and all those factors that go by the wider definition of **"social capital"**.*

Our final goal is to provide a better understanding of the purpose of the insurance sector and of the factors underlying its growth in the economy, and to provide an indication of those elements that allow it the best interplay with other economic forces as well as to best perform its economic and social function.

What's in a policy

In the mind of general public, "insurance" is mostly associated with cars, if not – on a more pessimistic note – with death and accidents.

Motor third-party liability (MTPL), a form of insurance covering the monetary liabilities that might arise out of road accidents for which the insured is held responsible, is in fact the best known form of non-life insurance, and perhaps of insurance *tout court*.

MTPL is mandatory in most developed countries. Highly standardized, it is often marketed as a commodity and on a cost basis, with advertising stressing

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features like being relatively inexpensive and convenient to purchase. Although there are of course quality issues, the mandatory nature, together with the perception that its ultimate goal is to protect "others" from the possible damage caused by the insured – while actually it is the "insured" who is protected against the monetary consequences of his deeds – make people **perceive it** as an **obligatory contribution** rather than as purchasing a service, and ultimately as something very akin to taxation.

Yet the non-life sector produces covers for a **wide variety of other risks**, some familiar to the general public, others less known outside the specialists' circle.

It can be roughly categorized into:

- **property** (fire, theft, household damages and so on, including "non-TPL motor," which basically means fire, theft of, and other damages to cars)
- **liability** (comprising both personal and corporate third-party damages)
- **accident and health**
- **other classes**, minor from the point of view of revenue – like legal protection which covers legal expenses – but extremely interesting from a professional point of view, like marine aviation and transit – insuring both the transported goods and the hulls of the carriers – credit, suretyship, bonds and political risks. Residual classes contain a number of heterogeneous covers, from nuclear risks to unemployment benefits, from Space risks (a development of "Aviation" risks) to travel insurance.

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Policies written on an ad-hoc basis can also cover absolutely exotic risks, from financial liabilities resulting from the capture of the famous Loch Ness Monster or from winning the European Championships to no less than alien abduction. Basically, where there is a **risk** that can be statistically assessed, there you may find an insurer.

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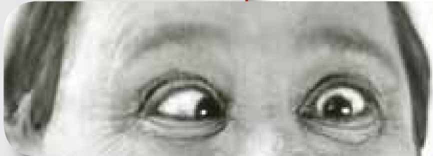
No two legs are born equal

Body parts can be major working instruments. No wonder then if successful professionals choose to insure them for amounts commensurate to the prospective loss of income should they be damaged, as was famously the case for the taste buds of the late food critic Egon Ronay. Celebrities are the insureds most likely to make the first pages of magazines, dating back to 1928 when silent film clown **Ben Turpin** (on the right), known for his crossed eyes, was reported by Time Magazine to have taken an insurance policy out if his eyes were to ever become uncrossed. Depending on their physical prowess and appearance to earn their livelihoods, movie stars as well as top-class athletes have ever since insured limbs, smiles etc. The risk assessment often involves a fair share of guessing on the underwriters' part, usually leading to insured sums rounding up to the typical million dollar, as is the case for the breasts of starlette and reality show celebrity Holly Madison, or Pittsburgh Steelers safety Troy Polamalu, whose famous long hair has made him a big selling point of shampoo advertising campaigns. On her part, **America Ferrera** (on the left), starring as the main character in TV-show Ugly Betty, scaled up by an order of magnitude by insuring her (actually) beautiful smile for ten million dollar. Football-and-gossip star **David Beckham** (on the right), earning his income from his playing ability as well as from his good looks, allegedly took out a comprehensive policy for almost 200 million dollar, rumoured to have been the largest in sports history. Not even all pairs of limbs are equal: oddly enough, while Heidi Klum's left leg commands one million dollar if damaged, her right leg is worth 200.000 more: as the top model explains in a Vogue interview, the reason for this difference is an old scar on the left one from falling on broken glass.



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Unlike mandatory motor cover, most of these latter kinds of insurance are to be undertaken on a **voluntary basis**. Let us recap the reasons why one should want to.

Why do people buy insurance

People are generally **risk-averse** in the sense that most of us prefer to count on a given amount of wealth with certainty, rather than on an "equivalent" random amount: using a famous example, most of us would choose to be given 1000 euros now and here, rather than a lottery ticket with one chance in one thousand of winning a million euros, although the expected value of both gifts is exactly the same. This is because the two amounts have the same expected

value, but a much different **variance** – i.e. the random variability, the "riskiness" of the result both for the good and the bad – and most people consider variance an evil.

There are of course different human types, "risk neutral" ones (indifferent to variance) and even "gamblers", who would rather have the lottery ticket: but the vast majority of people prefers **certainty**, at least when the important belongings are at stake. They are often ready to invest a few euros in buying a lottery ticket which might, – but with overwhelming probability will not – change their life; but they would rather not swap the home they live in with the chance of having maybe a bigger house – maybe none tomorrow.

This is why many people prefer to own a certain amount of goods, and of wealth in general – minus the price for an insurance policy – with certainty, rather than to spare the cost of insurance but carry the risk of losing the wealth itself. In economic parlance, the rationale for purchasing non-life insurance is to get an indemnity for future losses against paying a fixed price, the premium, today, thus transferring **future wealth from an uncertain to a certain state.** Basically insurance transfers uncertainty from risk-averse individuals (the customers) to risk-neutral ones, the insurers, who professionally pool many similar risks (or classes of risks) together and manage them efficiently.

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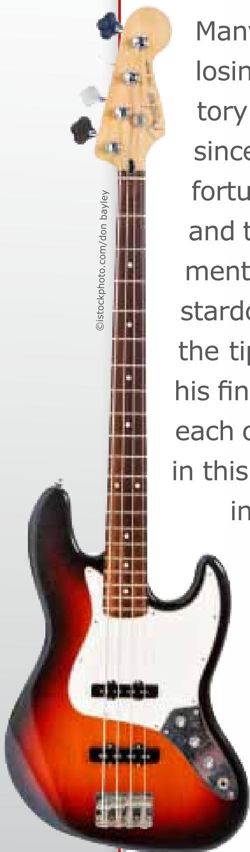
Similarly, from a **time-span viewpoint**, insurance helps **stabilizing consumption paths**. Most people prefer to benefit from a steady, albeit possibly modest, level of consumption throughout their lives, for which goal they need an equally stable and predictable level of income. If we consider one's lifetime income as a succession of random draws, year after year, "normality" (not in the probabilistic sense!) is represented by tranquil years when one lives out of his income, earning his average salary, using it to finance his average level of consumption and hopefully sparing part of it for retirement and exceptional purchases and expenses, like changing the car or moving to a bigger house.

Positive **deviations from normality** case can take the form of, say, receiving a legacy or winning a huge sum: this is why people place bets and play games such as bingo, lotto and the ever more popular slot machines and online poker. On the other hand, a huge negative outlier in this lifelong succession of draws can take the form of a disgraceful event leading to a huge pecuniary loss – the theft of one's car, the burning of his house - or an event that sub-

Rock solid



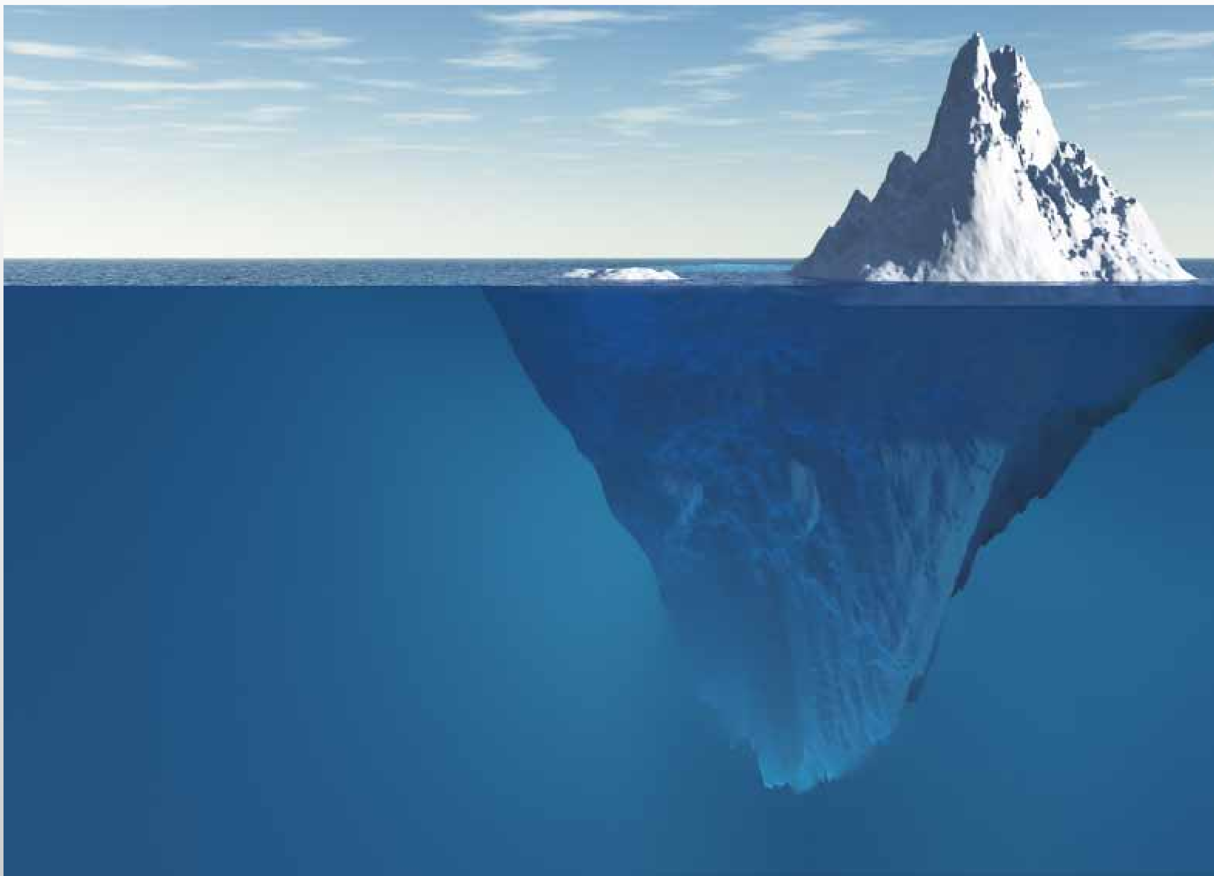
Many rock fans know the story about legendary Black Sabbath guitarist **Tony Iommi** losing the tips of two fingers in an industrial accident at 17, on his very last day of factory work before going professional, and having to make do with plastic protheses ever since: which ended up creating his particular sound and ultimately, if partly, made his fortune. Young Tony still didn't probably have a clue about his future success back then and therefore had no special insurance on his fingers, but another master of the instrument, former Yardbirds lead guitarist **Jeff Beck**, had already endured four decades of stardom and been the inspiration of generations of young guitarists before chopping off the tip of his left index while cutting carrots for a stew. Hurrying to the hospital saved his finger and career, and probably inspired him in taking out one million dollar policy on each one of his fingers. He was closely followed by Rolling Stones' **Keith Richards**, who in this respect commented: "These are the business" as he showed his hands during an interview with Fortune magazine.

He may be forgettable as a guitarist, but **Bruce Springsteen**'s voice has made a mark through four decades of rock too, to the point of **Barack Obama** being famously quoted saying that he chose to be president of the USA because he could not be him. No wonder, then, that rumours about "the Boss" insuring his vocal chords for six million dollars are dating back to the Eighties and the "Born in the USA" album, although both artist and Lloyds of London refuse disclosing any details. Nevertheless, one thing is for sure: his reckless live performances must have pushed the premium rather high.

stantially hampers his future income – like a disability or the loss of one's job. In both cases, positive and negative, such outliers are **highly unlikely**: that's why both lottery tickets and insurance policies are far less costly than the prizes they allow to win or the goods they insure. They are kind of opposite sides of the same coin – but of course the function of insurance (protecting your welfare from the effects of an unlikely negative event) is much different from that of gambling (betting your money on an unlikely positive event)! Moreover, insurance is not addictive.

Why do firms buy insurance

From an industrial perspective, small family firms would reason more or less like individual households. As for the bigger players, in principle any risk could be hedged by building up “just-in-case” reserves (so called risk funds) with enough capacity to cope with any foreseeable loss by setting aside money in good years when nothing happens: a behaviour which is called “**self-insurance**” and can be successful only if the magnitude of prospective losses is moderate with respect to the overall size of the firm.



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Moreover – according to **financial theory** – the **operational risk** a firm incurs can be transferred to the financial markets. This can either be done individually – risk by risk – by means of contingent contracts like, for example, weather derivatives, or on an aggregate basis, thanks to the inherent diversification associated with share ownership. The idea behind this latter case is that if one firm goes bust but the investor’s portfolios are diversified because they hold many small shares in many firms, then their wealth is ultimately safe.

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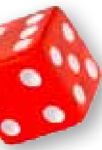

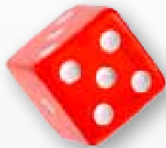

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The reality, as usual, is less clear-cut.

In fact while on a frictionless capital market – according to the Modigliani-Miller theorem – insurers would have no comparative advantage in diversifying risks, **in the real world** insurance companies can efficiently manage many low-probability risks for which contingent claim contracts would be unavailable or excessively costly. As **risk-management professionals**, they also have a competitive advantage in **loss prevention**, given their huge expertise in managing claims and real loss scenarios. Moreover, a number of bankruptcy costs arise if one firm goes bust because of a huge accidental loss, even if it is a public company: fixed assets have to be sold and production lines have to be relocated, possibly in suboptimal conditions; what's worst, both the company's board and the workers lose their jobs, which are often not as easy to replace as in frictionless markets' theory; lastly, a larger number of stakeholders usually suffers, both along the rest of the supply chain and in the local community around the production plants.

Therefore, as economists say, the purchase of insurance by the big firms is justified by **financial markets' incompleteness** and by transaction and bankruptcy **costs reduction.**

Regarding **self-insurance**, one may gather that for the sake of specialization insurers, holding a lead in risk-management, can supply this service more efficiently so that firms facing the choice to "make or buy", will go with the latter even if they would be big enough to "make". Or one might also infer, to many an economist's horror, that big firms' boards are, after all, just as risk-averse decision-makers as the average household head when their jobs are at stake.

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In the second part of the article, to be published within a few weeks, we will focus on the role of Insurers in the economy.