

## The Geneva Association Multi-year contracts to improve risk management culture?

There are several ways in which insurance can help bring about improved individual and societal risk management. In this extract taken from The Geneva Papers on Risk and Insurance, **Mr Trevor Maynard** and **Dr Nicola Ranger** examine one proposed insurance tool, the introduction of multi-year insurance contracts alongside risk-based insurance pricing.



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**I**t has been suggested that multi-year contracts, otherwise known as “long-term insurance”, which provide a guaranteed price (or guaranteed ceiling and floor price) over a term from three to as much as 25 years, could encourage risk reduction by providing greater incentives for the insured to invest in cost-effective property-level resistance and resilience measures. This is seen as increasingly important in a world where the risks from weather-related perils continues to rise.

Currently, multi-year contracts are not unheard of in the insurance market today, particularly in commercial insurance lines and for high net-wealth individuals. However, they are rare in the majority of general retail insurance markets. In addition, where they do exist in the commercial and high net-wealth markets, the policy term is typically no more than three years.

We review some arguments made with respect to multi-year contracts and provide new analyses on their pricing implications.

### The case for multi-year contracts

Insured losses from weather-related perils are rising. Over the next decade, we expect to see a growing role of climate change in driving losses to even higher levels. In this envi-

ronment, there is an even greater rationale for individuals, and societies as a whole, to take action to reduce the vulnerability of their property to weather hazards. This can also be beneficial for the insurance industry, through maintaining the insurability of property and reducing tail risk.

However, there are a number of important barriers to individual action to reduce risk at the property level. These include financial constraints (upfront costs); lack of information or poor use of information in decision making; a perception that the government will provide support in the event of a disaster; unawareness or misperception of the true risk they face; and other behavioural issues, in particular short-termism.

Risk-based insurance premiums can be an important tool to help overcome these barriers (Kunreuther *et al.*, 2009). However, in the real world, the price of a contract rarely reflects the true level of risk, particularly in the case of homeowner (or general retail) insurance. In practice, even with risk-based premiums in place, this economic incentive is not sufficient to overcome all the observed barriers to action.

Several recommendations that aim to help overcome these barriers have been proposed. For example, loans should be provided to property-owners (from public

schemes or other initiatives) to help spread the upfront investment costs over time (overcoming the financial barrier); if the annual rate of repayment were smaller than the annual insurance premium discount gained, the property owner would see an immediate financial benefit from the investment and so a strong incentive to take action. Further, if loans were tied to the property, rather than the individual, this would overcome the disincentive created by the prospect of moving house.

Kunreuther *et al.* (2009) argued that this strategy works only if the property owner could be assured that the insurer would continue to provide the premium discount. Hence, they recommend the use of a multi-year insurance contract with a guaranteed price and discount. They argue that the multi-year contract, with transparent pricing, could also strengthen the economic incentive by making the benefits of the investment in risk reduction more visible upfront.

Multi-year contracts could also increase the incentive for the insurer to invest in improving the resistance and resilience of its insured properties. Today, insurers have little incentive to reinstate a property in a more resilient and resistant manner as this tends to be more expensive and the investing insurer is not guaranteed to benefit as the policyholder may switch to another insurer. A longer-term relationship between the insurer and the policyholder would help to alleviate this barrier by allowing the insurer to offset the investment costs against future reductions in losses to the property.

### Disadvantages of multi-year contracts

#### Higher premiums and lower flexibility for policyholders

But multi-year contracts also have disadvantages, both for the insurer and the insured. A multi-year contract usually has a higher price which means that for the policyholder, there is an advantage in a shorter-term policy.

Indeed, in the survey carried out by the Association of British Insurers (ABI) in 2009, of the 43% of respondents that were interested in multi-year contracts, 97% felt that the price of a multi-year contract should be less than or equal to that of an annual contract.

The ABI survey found that many respondents were concerned about the possible disadvantages of multi-year contracts. The advantage of an annual contract for the policyholder is that it provides flexibility and choice; the option to renew or renegotiate a contract, or switch to an alternative insurer, to ensure that the policyholders get the best price and conditions for insurance. This must be weighed against the disadvantage that prices may fluctuate over time, as well as the potential higher search costs if a policy is cancelled by the insurer.

#### Lower flexibility for the insurer and less efficient use of capital

For the insurer, a multi-year contract has the advantage of limiting turnover in policyholders, but also limits the ability of the insurer to renegotiate the contract or cancel in response to changing conditions or new information; this could mean greater liability, but also an increased moral hazard.

The additional moral hazard arises because the insured no longer need to keep his/her property in an insurable condition on an annual basis because he/she has secured



insurance over a multi-year timeframe – this further increases the risk to the insurer.

In addition, the flexibility to raise premiums if necessary after a disaster is an important “pressure valve” for the insurance markets. Recent examples of this occurred after the World Trade Center attacks and after hurricanes Katrina, Rita and Wilma. For the insurer, it is an important way to rebuild their balance sheet. Without this pressure valve, more capital would need to be held in the first instance and premiums would need to be set higher. This not only implies a higher premium but also a less efficient use of capital and associated opportunity costs to the insurer.

In reality, the inability to rebuild the balance sheet in the event of a significant loss is likely to be seen by private insurers as a severe impediment to offering multi-year contracts. Also, the European Commission would be concerned that multi-year contracts have historically hindered competition and created a barrier to new entrants into the market, increasing premium costs.

#### Long-term guarantees and the risk of insolvency

Earlier we assume that the insurer is able to adequately foresee changing risks and conditions and price this into the premium at the start of the contract. However, as history has shown, our ability to predict the future is limited.

For the insurer, the likelihood and impact associated with mispricing a policy are larger than for an annual contract, where premiums can be adjusted each year in response to new information. New information almost always arises after each major catastrophe with the addition of another data point to a very sparse data set. Engineering expectations are tested, hazard behaviour is observed; all catastrophes are unique. In extreme cases, large-scale mispricing could lead to insolvency and, on a smaller-scale, to a less efficient use of capital.

A multi-year policy with a guaranteed premium has no opportunity to adapt to the changing nature of risk. Difficulties in anticipating the future means it will be probable that policies are under or over-priced as a consequence. A more likely outcome is that, in a competitive market and under uncertainty, insurers would tend to restrict policies to shorter durations.



Given these risks associated with fixed premiums, a multi-year contract with variable premium might be a more desirable prospect for the insurance industry. This would also help to reduce the price differential between annual and multi-year contracts and so make them more competitive on the market.

Kunreuther *et al.* (2009) propose that prices be renegotiated over time based on new information, for example, based on a regularly monitored risk index arbitrated by a third party.

However, such a system would bring considerable technical challenges. Aerts and Botzen (2011) highlight the difficulties in developing such a risk index for natural hazards, given gaps in data availability (eg up-to-date risk maps, reflecting changes in protective infrastructure) and the challenges in disentangling trends in risk from statistical noise (eg due to chaotic weather) and short-term risk variations (eg climate cycles, such as the El Niño Southern Oscillation).

We argue that allowing premiums to adjust each year, even within a defined range, removes some of the benefits of a multi-year contract, in particular, the financial stability created for the policyholder and the benefit of reduced administrative costs for the insurer. The option of varying the premium would likely need to be accompanied by a right to cancel, removing the security of the long-term relationship between the insurer and the policyholder.

### Practical challenges for adaptation

Without risk-based premiums and associated premium discounts for risk reduction, multi-year contracts will not provide an appropriate incentive to reduce risk.

However, risk-based premiums are rare in the general retail insurance market and this reflects a number of operational challenges. Firstly, in some markets, such as in a number of the US Gulf States, premiums are artificially suppressed by price regulation or subsidy programmes. Hence, the success of insurance pricing as an economic tool for adaptation relies on removing any regulation that places upper limits on the price of insurance.

However although in aggregate insurers must cover their risks, even in markets with competitive pricing (eg most of Europe), premiums rarely reflect individual risk in all cases. There is a history of cross-subsidisation of premiums across regions and lines of business, as a result of a culture of solidarity, the nature of traditional bundling of different hazards in a contract, or as a commercial strategy to extend the market by increasing affordability. Where natural catastrophe risk is underpriced, insurers are understandably reluctant to offer discounts to those undertaking cost-effective risk reduction measures.

There are also technical barriers to risk-based pricing and premium discounts for risk reduction. The level of risk faced by a property is site and building-specific, particularly for hazards such as flooding.

In insurance pricing today, typically generalisations are made to local areas and types of buildings to approximate the level of risk. This is sufficient given that the risks (and therefore uncertainties) are well diversified. However, to provide appropriate economic incentives, premiums would need to more accurately reflect risk and, in particular, the reduction in risk associated with investments in property-level resistance and resilience. For this, the underwriting



process would require a higher degree of information and the administrative costs of the policy would rise accordingly.

In a competitive market, such products could look unattractive compared to cheaper annual contracts. From an insurer's perspective, offering such policies would increase uncertainty in a portfolio, particularly in the early years until experience is gained.

### Conclusion

Multi-year contracts have a number of advantages for policyholders and insurers, but also several disadvantages, in particular for the private insurer. In a competitive market, these disadvantages are likely to provide an impediment to insurers offering multi-year contracts. The absence of multi-year contracts in the general retail insurance market today suggests that these disadvantages are seen as greater than the benefits of a longer-term relationship between the insurer and the insured.

The immediate challenge for the insurance industry then, with the greatest value for adaptation, is to provide transparent, risk-based premiums. The lack of risk-based premiums today is a disincentive for risk reduction. This is no easy task. In particular, there are considerable administrative and technical challenges for insurers in providing risk-appropriate premium discounts for property owners that invest in risk reduction. These challenges would be lessened in the commercial insurance business and insurance for high-net worth individuals, where administrative costs are typically a much smaller fraction of the total premium and so more significant investments can be made in accurate risk estimation.

We suggest that to promote autonomous adaptation, a priority for the insurance industry would be to explore methods and tools that would facilitate more accurate property-level estimation of risk at lower cost per policy.

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