No 2 / 2013

PERILS

Jackson Pollock: Convergence, 1952 © Albright-Knox Art Gallery

Dear Reader,

At this year's Monte Carlo "Rendez-Vous de Septembre", one topic appeared to overshadow all others: the growth of capital markets investing in insurance risk. Everyone agreed that this influx of capital was certainly contributing to the abundant capacity currently available in the re/insurance markets. However, there was a difference of opinion on whether the growth of the Alternative Market was a positive development for the industry and whether it was here to stay.

In the special section of this newsletter, we have sought to contribute to the debate by providing an objective view on the Convergence Market to help readers form their opinions on the pros and cons of this development.

In this issue, we also report on the floods in Central Europe and in Alberta, Canada – both of which were events that PERILS provided satellite-based flood footprints as part of a trial phase sponsored by the European Space Agency. In addition, we examine the earthquake loss potential for Italy using the QIS 5 scenario. And finally, we provide an update on the use of our industry data in industry-loss based risk transfer.

We hope you enjoy reading this issue and are always grateful for your feedback.

Best regards,

Luzi Hitz
CEO PERILS AG

Figures & Facts

per 30 September 2013

12	number of countries covered: B, CH, D, DK, F, I, IRL, L, N, NL, S, UK
3	number of perils covered: wind, flood and earthquake
11	number of captured events
EUR 10'500m	QIS 5 capital charge for Earthquake Italy
EUR 1'234m	Combined market loss of the earthquakes in Italy from 20/29 May 2012
4	minimum number of PERILS loss reports for qualifying events
>100	number of data providing national insurance companies
>100	number of PERILS-based transactions placed since 1 Jan 2010
USD 8.0bn	total of PERILS-based capacity placed 1 Jan 2010 to 30 Sep 2013
USD 4.3bn	PERILS-based capacity at risk at 30 Sep 2013
73%	percentage of PERILS-based capacity based on a structured trigger

Cat Events

PERILS provided satellite imagery for the flood events in Central Europe and Alberta, Canada. Study of QIS 5 capital charge for the peril of earthquake in Italy reveals significant loss potential.

Satellite Flood Footprints

The month of June saw heavy rainfall both in Central Europe and Alberta, Canada. The resulting catastrophic flooding caused insured losses in the billions of USD. The market loss for the Central European flood is still being calculated, which is one of the reasons why PERILS is currently exploring the possibility of expanding its market coverage to include the peril of flood in Central and Eastern Europe. For the floods in Alberta, where in particular the city of Calgary was affected, the market loss is estimated at CAD 1.7bn. This makes it the costliest natural disaster ever for the Canadian insurance industry.

Figure 1: Satellite Flood Footprint for Calgary, Alberta, in June 2013. *The map shows the areas potentially flooded in Calgary (Elbow River) derived from Pleidas satellite data (0.5m) and SPOT 6 image (1.5m) acquired on 22, 26 and 27 June 2013.*
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The Satellite Flood Footprints (SFF) provided by PERILS for these events (Figure 1) are in geo-coded format and can be easily imported into map viewers and geographical information systems. They come in addition to a SFF map provided for Superstorm Sandy which occurred in October 2012.

The SFF products are part of a trial phase sponsored by the European Space Agency with PERILS acting as the distribution platform. PERILS will decide in the coming months if and how the offering of SFF can be continued after the trial phase.

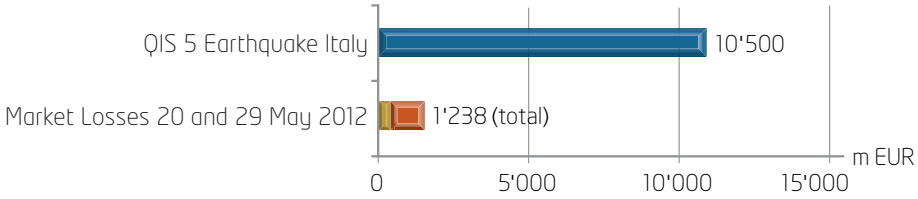

***Figure 2:** Earthquake loss potential using the QIS 5 standard scenario for Italy and the two earthquakes from May 2012.*

Earthquake Loss Potential in Italy

The PERILS team carried out a study on the earthquake loss potential for the Italian market. We applied the standard scenario of QIS 5 (Solvency II Quantitative Impact Study #5) to the property sums insured of the PERILS Database. The resulting total capital charge was EUR 10.5bn. This amount can be considered as the 1/200yrs PML for the Italian property insurance market. It is more than eight times the combined market loss of EUR 1.2bn calculated by PERILS for the two earthquake events in Emilia Romagna from 20 and 29 May 2012 (Figure 2). Insured earthquake risk in Italy is influenced by comparatively low insurance penetration. PERILS estimates that around 12%-13% of insurable property values are insured against earthquake, with a higher overall level of insurance penetration in Northern Italy than in Southern Italy.

Business Update

Insurers and reinsurers placed more than 100 transactions using the PERILS Industry Loss Index. 73% of the transacted Cat capacity was based on a weighted index trigger.

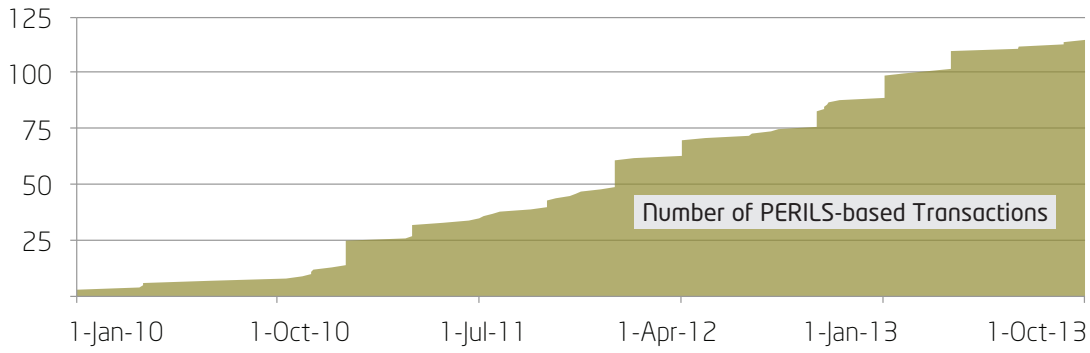

Figure 3: PERILS-based transactions. *Of the 115 transactions placed since 1 January 2010, 95 were private deals, 20 were Cat Bonds. As at 30 September 2013 a total of USD 4.3bn of PERILS-based limits was at risk.*

Between 1 January 2010 and 30 September 2013, there were 115 transactions which used the PERILS industry loss data as the underlying index (see Figure 3). Ninety five of these transactions were private deals such as ILWs and Risk Swaps, while twenty were in the form of 144A Insurance-Linked Securities (Cat Bonds). In total, they represent aggregated limits of USD 8.0bn.

Further increase of weighted PERILS industry loss triggers to minimize basis risk

A simple but nonetheless very effective way to increase the matching of a protection buyer's insured loss with an industry loss is to use a weighted trigger. Weighting factors can minimize basis risk per geographical units and per Line-of-Business. The share of such structured triggers has increased over the last three years from 23% to 73% of the total limits at risk.

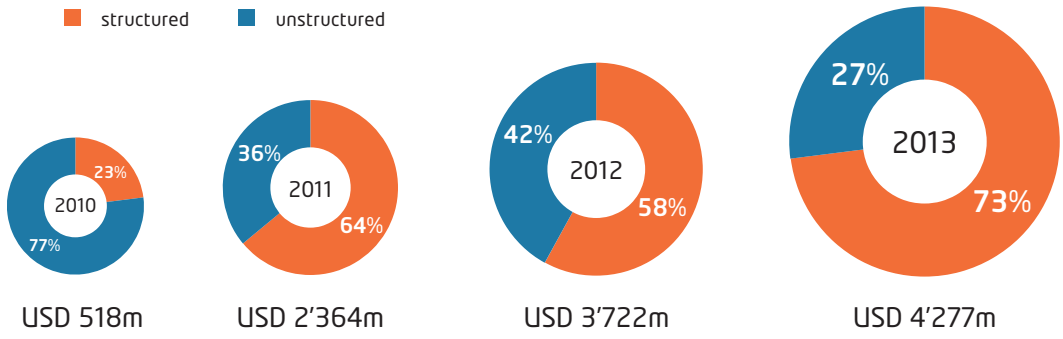

Figure 4: Usage of structured triggers. *As at 30 September 2013, a total of USD 4.3bn of PERILS-based limits was at risk with 73% using a weighted PERILS trigger. This is up from 23% in September 2010.*

The Convergence Market

Investors have discovered insurance risk as an attractive non-correlating asset class. Are they here to stay?

In recent months, there has hardly been a day when the insurance press has not written about the increase in capital market investment in insurance risk (rather than in shares and debt of insurance and reinsurance companies). This expanding market has been given various names, including: the Convergence Market; the Non-Traditional Market and the Alternative Market.

Today it is estimated that approximately USD 45bn are invested by the Convergence Market into insurance risk. Investments are broadly made in three types of products: insurance-linked securities (ILS, Cat bonds), collateralized re/insurance, and sidecars (Figure 5).

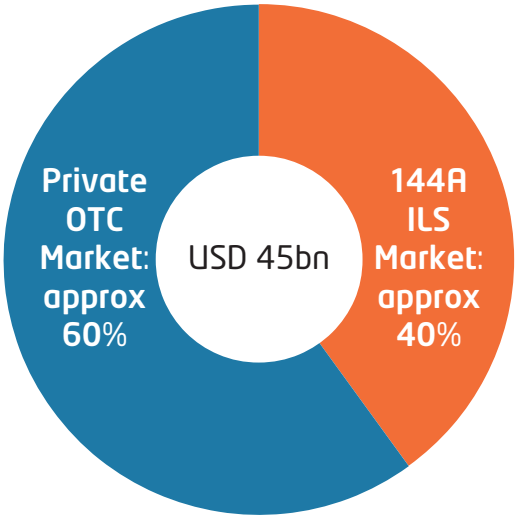

Figure 5: Estimate of currently invested capital in insurance risk via non-traditional instruments. *The market has grown roughly 50% over the last three years. Investments are made via the 144A regulated ILS market (approximately 40% of the entire capital) and via private, over-the-counter sidecars and collateralized re/insurance products (approximately 60% of the entire capital). Sources: Aon Benfield, Guy Carpenter.*

The fundamental difference of these risk transfer products compared to traditional insurance is that the money to be paid in case of a qualifying loss event is specifically set aside for each insurance risk investment. Hence the protection buyer can be sure that the money is there when it is needed. In traditional insurance, there is no such certainty. Rather, the protection buyer must use his own judgement on whether the re/insurance company will be able to pay out following a loss event. Rating agencies thereby play a crucial role in facilitating this judgement by assigning financial strength ratings to insurance and reinsurance companies.

The fundamental difference between traditional and non-traditional re/insurance from the perspective of the protection buyer therefore boils down to a judgement on credit risk: will I be compensated according to the contractual promise or not?

Knowing that the promised money is reserved and "locked in a box" is of course helpful for making this decision. But the decision is not so straightforward, because it comes at a price. Historically, buying protection via the capital markets has been more expensive than traditional reinsurance. However, for U.S. peak risks (hurricane, earthquake), this price gap has, at least temporarily, all but vanished in recent times, while non-traditional prices for other loss scenarios such as Windstorm Europe, Earthquake Turkey, or Earthquake Japan have come down as well.

This price movement is driven by supply and demand. At the moment, there is clearly more risk capital supply than demand – hence prices move downwards. The abundant supply is mostly driven by investors who appreciate the attractive yields and the non-correlating characteristics of insurance risk.

In particular, Cat risk, which is driven by the moods of Mother Nature and not financial market forces, is seen as attractive because it is a diversifying asset class. Add the fact that other fixed-income asset classes offer record-low interest rates and it becomes clear why insurance risk has been broadly acknowledged as an attractive alternative investment.

Total direct investment in insurance risk via alternative instruments has grown from an estimated USD 30bn to USD 45bn over the last three years. At the same time, the investor base has significantly broadened. Nowadays, virtually all forms of money managers have an interest or are actively involved in insurance risk investment, either via investments in dedicated insurance risk investment funds or by investing directly into insurance risk. Comparing the size of this source of risk capital with the current needs of protection buyers of course reveals to a significant mismatch. Global pension funds alone manage some USD 30'000bn of assets while, for example, the total amount of Cat Excess of Loss (CXL) limits is estimated at some USD 330bn. Hence there is ample room for speculation on how the involvement of capital markets will further evolve.

Reinsurance companies seem to acknowledge the new role of capital markets in taking insurance risk. Rather than viewing the alternative market as a competitor, they at least partly seem to join it by setting-up dedicated investment funds and leveraging their existing underwriting expertise. Fee income is thereby a welcome diversification of revenue. The well-established insurance-linked investment funds on the other hand are increasingly moving towards traditional re/insurance by having full-blown underwriting teams and investing in a broadening range of insurance risk via collateralized re/insurance. This development gave rise to the expression "Convergence Market", i.e. third-party asset managers becoming more like re/insurers and re/insurers becoming more like third-party asset managers.

Perhaps even more significant is the fact that reinsurers are not just investing in alternative risk transfer products, but they are also using them to manage their own balance sheet by ceding capital-intensive peak risks to the capital markets. This source of low-credit risk retrocession capacity is highly appreciated as evidenced by the fact that approximately a quarter of all 144A ILS risk capital and many sidecars are bought for retrocession purposes. A well-functioning retrocession market is ultimately also of interest to reinsurance buyers which usually feel the direct impact of a liquid or frozen retrocession market in their dealing with reinsurers.

At present, alternative capacity is mostly used for peak Cat risks in the U.S., in Europe and in Japan. For other territories, perils or lines of business, alternative capacity is much less employed. This makes economic sense because by definition peak risks in a re/insurance portfolio absorb most of the risk-bearing capital and hence attract the highest capital costs.

Due to the immense size of the capital markets, however, Cat risk can never evolve into a peak investment risk. As a consequence, capital costs are lower for the capital markets for assuming Cat peak risk than they are for traditional re/insurers. Capital market capacity for peak insurance risk therefore makes economic sense. In the end, it is identical to the economic value proposition that globally diversified reinsurers are making to insurers and as insurers are making to their insureds. Considering that traditional re/insurance has existed for several hundred years based on this economic principle, one could argue that it will be no different with the alternative market now that it has become familiar with insurance risk and the corresponding investment products.

Whether the alternative capacity will be as long-standing as traditional capacity is, however, a matter for debate. Conservative voices tend to view alternative capacity as fickle and believe it will exit as soon as a big event occurs which causes heavy losses, or interest rates rise. Progressive voices, on the contrary, believe even more alternative capacity will flow into the market after a major event, and further that interest rates rises are implicitly included in the collateral's investment. In short, they say that the involvement of the capital markets in insurance risk is for the long term.

Time will tell is probably the view of the more patient observer. What is clear at this stage, though, is that if underwriting standards and risk management practices should slip in certain markets, this could have a significant negative impact on those markets sooner or later. This has been seen on numerous occasions in the past and notably both in the traditional re/insurance as well as in the capital markets. However, as long as the traditional and the alternative markets continue to underwrite insurance risk in a professional manner, the Convergence Market will likely continue to contribute to a broad selection of risk transfer options for protection buyers.

Outlook

The PERILS team is fully primed and ready for the upcoming European windstorm season. Any event which causes more than EUR 200m market loss will be captured by us.

In addition, we are working on further extending our market coverage to other territories, notably for the peril of flood in Central Europe.

Last but not least, we will be continuing our work with our partners from the space and insurance industry to establish suitable ways to provide satellite-based flood maps to the industry in a cost-efficient and sustainable way.

We look forward to the work ahead and are confident that there is still much more that we can achieve.

With our very best regards,

Your PERILS Team

Zurich, October 2013