Assessing the potential of insurance linked securities (ILS) and overcoming the barriers to convergence within the ILS market

Unlocking the potential of ILS

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14%

Global catastrophe reinsurance capacity is provided through ILS

Source: PwC Analysis

Foreword

Welcome to *Unlocking the full potential of ILS*, a report examining the prospects for insurance-linked securities (ILS) as the reinsurance and capital markets continue to converge, and how sponsors and investors can take advantage of the developments ahead.

In the less than 20 years since the launch of the first insurance-linked securitisation the ILS market has grown to the point where it now provides 14% of global catastrophe reinsurance capacity and in particular a far more substantial percentage of property catastrophe reinsurers. As reinsurance has had around 700 years to develop and mature, ILS' ability to capture such a significant share of the risk transfer market in such a short space of time is all the more remarkable.

But while ILS has cemented its place as a complementary alternative to reinsurance, it still has a long way to go before it can realise its full potential. The interplay between global economic development and mounting catastrophe risk provides a telling indicator of just how valuable ILS could become.

Natural catastrophes are becoming more frequent and severe. Few believe that this threat will recede. In turn, the value of the assets at risk from this climatic instability is soaring as growth in the emerging markets accelerates. The estimated $15 billion claims from the floods in Thailand in 2011 provided a sharp wake-up call on just how much the global risk landscape has and will continue to change.

ILS could play a crucial role in helping to manage these risks, simplifying risk transfer, bringing in much needed loss absorbing capacity and providing an efficient way to match risk, capital and reward in different parts of the world. Yet as we explore in this report, ILS will need to remove a number of barriers before it can reach its potential. In particular, sponsors have to overcome the wariness of an asset class that is seen by many investors as opaque and uncertain, much in the same way as they view traditional reinsurance. The key to this is being able to cut through the complexity of ILS and forge a better understanding of how the structures work, the nature of the risk profile and how this matches up against the potential rewards.

Once market participants are able to tackle these challenges, we could begin to see the critical mass of trading that would move ILS out from its niche and into the mainstream.

These innovators and fast-followers include investment banks, specialist ILS vehicles and new capital providers from the emerging markets.

We hope that you find this report interesting and useful. If you would like to discuss any of the issues raised please feel free to get in touch with us (our contact details can be found on page 12).

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1 In 1994, Hannover Re launched KOVER, which is commonly referred to as the first securitisation of natural catastrophe risks

2 The social, technological, environmental, economic, and political dynamics that are transforming the risk landscape and insurance and reinsurance sectors are explored in *Insurance 2020: Turning change into opportunity*, published by PwC, January 2012

3 AM Best briefing, 09.02.12

'ILS is the new normal – it's now inconceivable for reinsurance executives and sponsors to not be evaluating the merits of capacity provided from alternative capital sources.' – Reinsurance CEO

ILS comes into its own

The drivers that are reshaping the reinsurance sector and wider global economy open up huge potential for ILS

Figure 1 ILS advantages

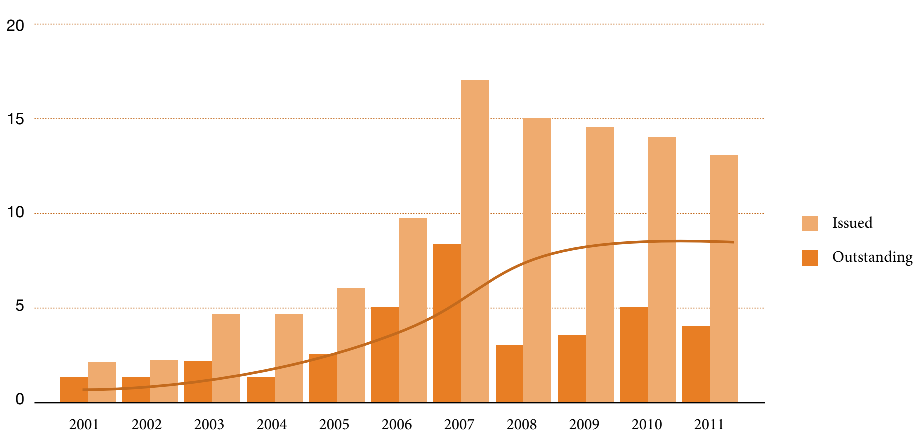
Sponsor	Investor
'Uninsurable' risks managed	Direct investment into insurance
Multi-year solutions address seasonal or cyclical issues	Uncorrelated assets
Counterpoint to cost and capacity limitations	Risk diversification
Counterparty diversification	High yields
New capital sources and improved capital management	
Improved optimisation of regulatory reserves	

The development of ILS from its beginnings in the 1990s is a striking story of growth and innovation. Each year has seen the launch of new and adapted products as sponsors (risk transferors) seek to refine ILS structures and meet changing market demands.

As Figure 1 highlights, ILS has increased risk transfer capacity for insurers and their clients. A particular advantage is that ILS capacity tends to be less pro-cyclical than traditional reinsurance, which often contracts in the aftermath of a major loss event and can be difficult to secure at the right price when insurers need it most.

In turn, ILS offers acquirers an opportunity to invest in instruments that are largely uncorrelated with other assets and macroeconomic movements, an attribute that is especially valued in the wake of the financial crisis. A particular attraction is being able to invest in pure insurance risk. This cuts out the surrounding risks of investing in a reinsurance company, notably the market risk in its share value. By investing in pure insurance risk, ILS investors are spared the challenge of valuing what are often complex and highly diversified reinsurance businesses – the difficulties are reflected in the fact that many traditional reinsurers trade at a discount to book value despite their strong performance in recent years.

Figure 2 Catastrophe Bond Market - 2001 to 2011



Source: PwC Analysis

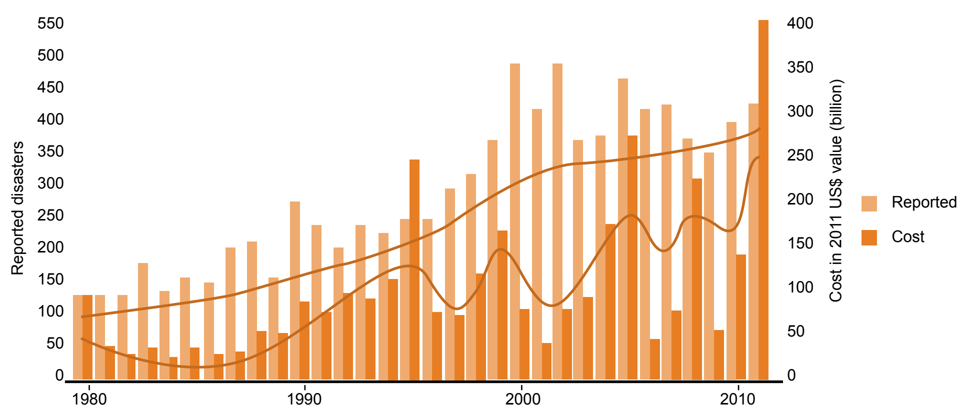
Figure 2 charts the development of what is now a reasonably liquid catastrophe bond market. ILS has expanded to cover risks that had previously been deemed 'uninsurable'. Life securitisation may have been largely put on hold for now because of the difficulties of securing the necessary guarantors, but the underlying need to release funds for new business remains and renewed activity is expected in the future. The arrival of the Bermuda 'Class of 2011' (this time in the form of specialist investment managers) highlights the continued interest and investment in targeted areas of the ILS market. Yet, despite its growth, ILS is still a niche market primarily attracting niche investors, with the $15 billion in traded assets being dwarfed by the value of traditional reinsurance.

So where does ILS go from here? Over the past 18 months, we have been developing our Insurance 2020 analysis,[1] which explores the mega trends that are transforming the global insurance and reinsurance markets. Insurance 2020 groups the main drivers of change into a series of social, technological, environmental,

1 Insurance 2020, PwC, January 2012 (for a copy go to www.pwc.com/insurance)

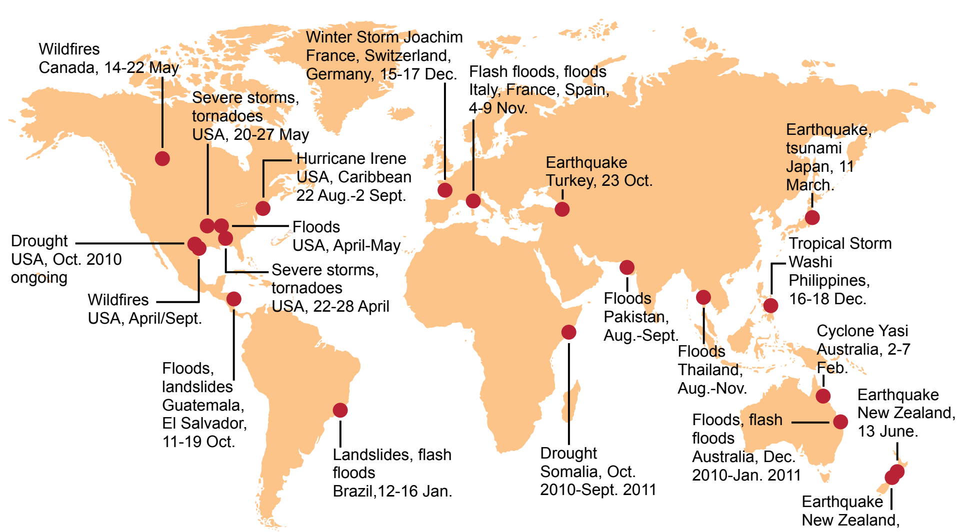
Simply put, it all comes down to basic economics—the bottom line is that an effective equilibrium is needed to balance the requirements of both ILS sponsors and investors.

Figure 3 Number of reported disasters versus cost in 2011 US$ value (billion) - 1980 to 2011



Source: PwC Analysis

Figure 4 Selected world natural catastrophe losses, 2011



Source: PwC Analysis

economic, and political dynamics (together making up the acronym 'STEEP'). The analysis is designed to help companies judge whether the different scenarios for the future are threats or opportunities for their particular business. They can then plan for change, and ideally turn it to their advantage, rather than simply reacting to events.

Changing risk landscape

All of the STEEP dynamics will influence the development of ILS. The starting point is the impact of mounting environmental instability, which has already led to an increase in insurance losses (see Figure 3), which resulted from a spate of recent catastrophes around the world (see Figure 4).

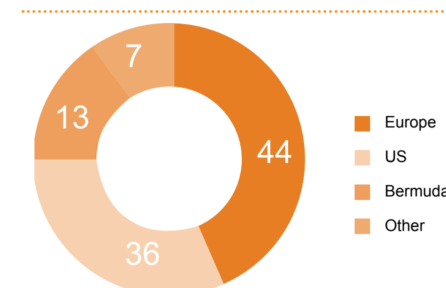
The insurance sector has a reasonable track record of developing catastrophe models in areas where there is plenty of historical data such as US or European wind storm damage. However, even in these areas there is still much to learn and understand as was highlighted by the Risk Management Solutions (RMS) US hurricane model release in 2011, which has led to significant changes in technical pricing.

The even greater challenge is that as economic development in Latin America, the Middle East and Far East accelerates the scope and value of the liabilities at risk are expanding. These are regions where climatic instability is often especially marked, but the corresponding risk data and modelling are limited. The $15 billion losses from the Thai floods of 2011 are not only telling in their overall scale, but also the significant impact of supply chain and business interruption claims coming from other countries, which highlights the increasing interdependence of the global economy. Transpose the Thai losses to a catastrophe affecting one of the coastal

hubs in China and the huge implications of the transformation in the global risk landscape are clear.

Managing this changing global risk landscape will require more sophisticated risk modelling and more innovative structured risk-sharing and risk transfer deals. Catastrophe modelling will become more sophisticated using advanced early warning technologies to underwrite in specific, catastrophe-prone areas. Insurers who fail to keep pace with this increasing sophistication might be forced to exit markets in certain areas, such as those prone to flooding or forest fire. This provides the ILS sector with significant opportunity on a global scale. ILS can not only help expand loss absorbing capacity, but also help to attract new capital. We're already seeing capital investment in ILS from the Middle East. As Sao Paolo, Singapore and other emerging market reinsurance centres continue to develop, they could provide valuable regional risk expertise and channels for attracting further capital into ILS. This would help to extend ILS beyond its predominant investor base in the US, EU and Bermuda (see Figure 5).

Figure 5 Investors in Cat Bonds by location (2011)



Source: PwC Analysis

79%

C-suite executives are most concerned about uncertain or volatile growth

Source: 15th Annual CEO Survey

The ways and means

If the environmental and economic dynamics of the new global insurance market could spur growing demand for ILS, the other STEEP developments can provide the means to make this expansion possible and will shape the ILS structures and strategies that emerge.

Technological advances are spurring significant improvements in risk analytics and enabling companies to develop more innovative and cost-effective risk mitigation and transfer solutions. The insights gained would help ILS sponsors to enhance technical pricing, develop more finely tuned ILS structures and align them more closely with investors' different risk and reward appetites. It would also pave the way for greater product transparency and standardisation within the ILS market, which would help to attract a broader base of institutional investors and promote greater liquidity.

Being able to adjust hedging as new information comes to light would be especially beneficial within the catastrophe market. At present, contracts are underwritten annually; unless the company takes out expensive additional insurance during the year, cover can't be extended or adjusted. As geophysical, hydrological, meteorological and climatological prediction techniques improve and active sensors provide real-time data, companies will be able to move away from this potentially inflexible cover and transfer risk more proactively, possibly through ILS.

As risk evaluation and management become more sophisticated, companies will be able to develop a more detailed understanding of their risk profile and net risk position and will look for more targeted ways to hedge and mitigate particular risks. Smart ILS sponsors could step in to develop simple, transparent and responsive solutions to meet changing customer expectations. These might be specifically customised structures on the one side. On the other, they would include liquid capital market risk transfer products, which companies could buy 'off-the-shelf' to meet specific needs within their bespoke hedging strategies.

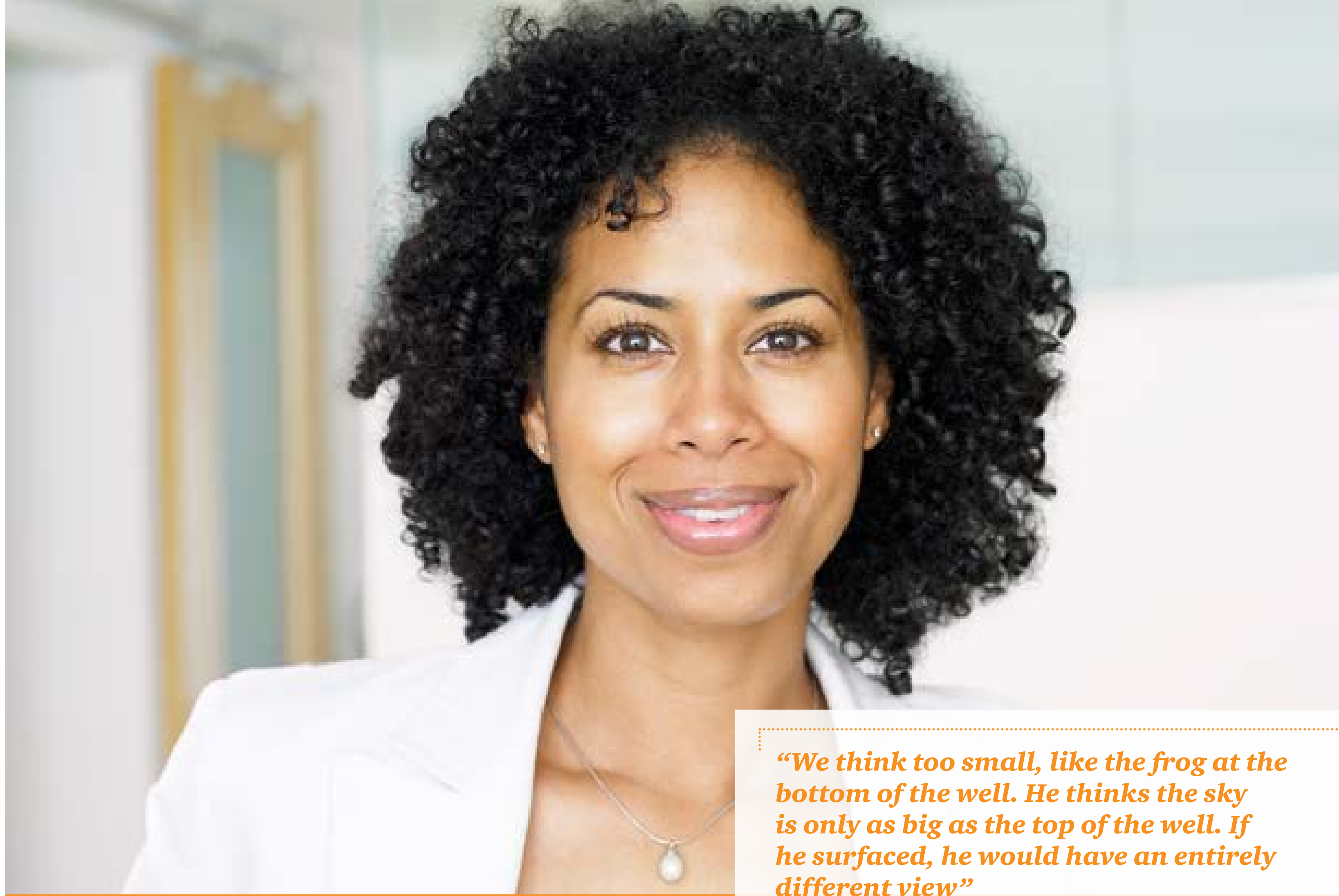
The final piece in the STEEP jigsaw, the political dimension, will have an important say in how quickly and successfully ILS develops. Greater regulatory harmonisation would pave the way for increased standardisation of ILS products and promote a more globalised value chain of risk takers, risk transferors and risk acquirers. The less favourable scenarios would be disjointed international regulation and restrictions on foreign investment and participation in key emerging markets.

Under Solvency II, most reinsurance sponsors are unlikely to gain a significant capital benefit from ILS transactions. However, if primary insurers are able to directly sponsor ILS deals, the capital benefits could be more effective than holding traditional reinsurance.

Key questions for market participants

While the STEEP dynamics offer significant potential for growth and innovation in ILS, market participants will need to be nimble in anticipating and adapting to change if they're to make the most of these openings:

- Where are the growth opportunities in ILS (e.g. location and risk type)?
- Do your risk evaluations take account of the rapid changes in the risk landscape and how can you bring your analytics up to speed?
- How will your products need to develop to meet changing customer expectations?
- What new sources of capital could you reach into (e.g. emerging market investors) and how can you align your products with the differing risk appetites and investment strategies?



"We think too small, like the frog at the bottom of the well. He thinks the sky is only as big as the top of the well. If he surfaced, he would have an entirely different view"
– Mao Tse-Tung

A broader convergence story

Our analysis so far has focused on catastrophe bonds and similar ILS securitisations. However, it's also important to highlight other ILS products, which have seen strong growth over the past year.

Collateralised reinsurance sidecars

Collateralised reinsurance and sidecars proved popular in 2011, following a hiatus over the last few years. These temporary injections of capital can help to shore-up a disrupted market before it can stabilise once again. In 2011, around $750 billion was deployed through sidecars sponsored by Bermuda reinsurance groups. This type of convergence is now well understood by sponsors and investors alike, and is quick and efficient to mobilise.

More recently we have witnessed a major deal between a hedge fund and a reinsurance company —PaCRe.

Industry Loss Warranties

Industry Loss Warranties (ILW) are comparable to cat bonds. They offer a broader 'catch-all' hedging option than traditional reinsurance and usually sit at the upper levels of such programmes.

During the early part of 2011, many risk transferors suffered heavy losses to traditional programmes and some even ran up against risk-appetite ceilings. ILW's provided market participants with the opportunity to lock down additional protection against annual loss exposure thresholds prior to the wind season. This in turn provided capital market investors with access to good pricing and returns in the second-half of the year.

The ILW market is increasing in popularity with sponsors and investors alike and doesn't appear to be suffering from some of the difficulties in matching sponsor and investor understanding seen in the cat bond market.

45%

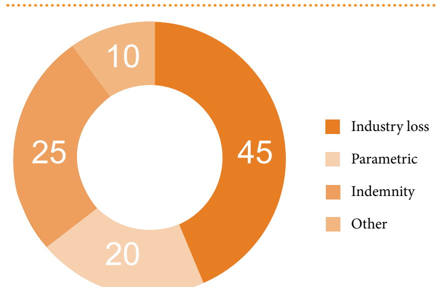
of C-suite executives say 'distribution destruction' is inevitable

Source: 15th Annual CEO Survey

Overcoming the barriers to further growth

The potential of ILS is clear, but barriers to growth still need to be overcome before it can break out of its niche and move firmly into the mainstream. The following are the top six barriers holding back the development and growth of ILS, and questions for market participants to consider that could lead to potential solutions.

Figure 6 Triggers on outstanding Cat Bonds (2011)



Source: PwC Analysis

1. Better risk insights

Lack of information has always been the greatest challenge to effective underwriting. Honing technical pricing has been a key focus in the development of ILS. But unless risks can be better understood, ILS may not provide any better hedge than reinsurance, assuming the risk can realistically be hedged in the first place. This is further exacerbated when sponsors are attempting to transfer 'uninsurable' risks to the capital markets. Making the most of advances in risk analytics is therefore going to be crucial in allowing sponsors to gain sharper insight into the risks they're transferring and providing investors with the comfort needed to take on the risks.

Key question: What analysis and information would improve the quality and reliability of your risk evaluation and technical pricing?

2. Simpler and more understandable products

One of the challenges of seeking to bring together two sophisticated marketplaces is how well each side understands the other. The reinsurance sector is often perceived as difficult to understand. In relation to ILS, the challenges of pricing insurance risk are made more difficult by the need to align technical pricing with the expected profitability of a securitised product. Apart from dedicated niche catastrophe and ILS funds, few investors have the necessary technical knowledge to fully understand ILS. The challenge for sponsors is how to articulate and communicate the risk and reward profile to investors in a sufficiently intelligible and convincing way.

Key question: What analysis and information would help to give potential investors greater insight and comfort over a particular ILS issue/product and how can this be best conveyed?

3. Managing down risk

ILS products are either linked to the indemnity triggers familiar to insurers or the index or parametric triggers familiar to capital market investors. Indemnity triggers are more closely linked to the peril than an index or parametric trigger and therefore reduce the basis risk (the gap between the insured loss and the pay-out). However, indemnity triggered products are generally harder to structure. They can also reduce the incentive for cedants to manage down their risks, which is reflected in higher ILS prices and less liquidity in comparison to products with indexed or parametric triggers (see Figure 6). Conversely, if a product is more closely linked to industry events, locations or intensities, it's less likely that a sponsor will be able to pass on the basis risk, but has more incentive to manage its catastrophe risk.

Key question: Is a preference for indemnity triggers preventing you from managing the underlying risks more effectively? If so, could better risk management help you to take advantage of generally more liquid and cost-effective indexed and parametric triggered products?

4. Reducing cost and complexity through standardisation

The current lack of standardisation increases origination costs for ILS. In turn, investor concerns over the complexity and uncertainty of the profitability and security of ILS investment means that they often place considerable reliance on an external rating. They may also insist on benefits such as higher yields as a compensation for the uncertainty. A concerted effort to create greater standardisation and transparency would help to reduce origination costs and increase investor familiarity, appetite and liquidity. This would be aided by new standardised loss indices, especially within Europe, and can be supplemented by the use of external modelling experts.

Key question: How could you work with investors and other sponsors to improve product standardisation?

5. Factoring in capital market risk

The financial crisis highlighted the importance of taking full account of the capital market risks and vulnerabilities associated with ILS. In the non-life sector, counterparty exposure for collateral (e.g. Lehman) hit pricing hard in the secondary markets. In the life sector, the impact on financial guarantors stalled available ILS capacity. ILS market participants have learned from these experiences, though the risks will need further consideration as ILS becomes more liquid.

Key question: Are capital market risks sufficiently factored into the overall ILS risk profile?

6. More consistent rating

Rating agencies have yet to develop a clear enough understanding of ILS. This is reflected in rating caps and 'discounts to ratings' benefits to sponsors using ILS. The lack of understanding and inconsistencies in ratings evaluation appear to be impeding ILS growth at present. If market participants could work with rating agencies to improve the quality and appropriateness of their ILS ratings, there would be more incentive to use these capital efficient solutions.

Key question: How can you work with your rating agency to help them develop a better understanding of your ILS and their capital benefits?

The insurance and reinsurance industry is at a watershed. The environment in which industry executives have spent most, if not all, of their careers is changing.

49%

of C-suite executives expect new sources and techniques in the use of data analytics to be the key competitive differentiator

Source: 15th Annual CEO Survey

The way forward

Market forces are set to provide a strong spur for balancing the requirements of sponsors and investors in the coming years and hastening ILS towards the ultimate goal of full liquidity and convergence. The key consideration for market participants is how to make sure they're at the forefront of these developments and ready to take full commercial advantage.

Significant improvements in the sophistication of institutional risk management and seismic shocks to financial markets over the last decade have built the foundations for far greater convergence between the two in the years to come. The financial system clearly benefits from alternative methods of risk transfer, especially in complementing reinsurers' finite loss-absorbing capacity. If effective, ILS can bring greater precision to risk management and efficiently align risk and capital without the need for substantial infrastructure.

Demystifying and improving understanding of ILS through better information and greater standardisation would help to attract more institutional investors and bring in investors from new markets. This would help the ILS market to move towards full convergence and the critical mass of liquidity that underpins this (Figure 7 sets out the key drivers and milestones on the road towards greater convergence).

Getting there is going to require a farsighted approach. If there is one thing that the financial crisis has shown it's that overly focusing on immediate issues at the expense of emerging challenges and opportunities can leave businesses competitively marginalised. Figure 8 sets out the fundamental questions that executives will need to answer to make sure they're leading the developments in the ILS market and able to reap the rewards.

Figure 7 The future of ILS? Key drivers provide the roadmap to convergence

Reinsurance

Precision risk management allows sponsors to offload risk at exacting and bespoke levels

Dawn of the market makers who select and analyse risk and build bespoke solutions for capital market transfer

Product innovation leads to more effective and multi-faceted risk management

B2B chain destruction eliminates the role of the intermediary and creates more equity between risk financing and risk transfer

Standardised securitisations support efficient transfer and improved rating

Big data and technical advancement eliminate 'gut driven' decision making and drive more effective pricing of risk through the capital markets

24/7 underwriting facilitated by a marketplace that provides sponsors an ability to transfer risk whenever it might be needed

Black swan modelling becomes a reality, no longer creating solvency and capacity issues in reinsurance

Emerging market development provides the catalyst for ILS to transfer risks through the global capital markets without the need to establish substantial infrastructure

Capital Markets

Convergence

Source: PwC Analysis

Figure 8 Fundamental questions for executives on ILS

How can the fundamental differentiators in risk management – intellectual capital, risk analytics, underwriting experience – be brought to the forefront again, developed further and leveraged strategically for ILS?

How do our strategies and business models that are constantly being adapted to profit from the current global instability, need to be recalibrated to position the business for success ten years from now?

How can we get more liquidity into today's market while addressing a sponsor's fundamental need to transfer basis risk?

What risks will be significant in the future? How will products be designed to provide efficient risk transfer solutions to address demand for 'uninsurable' risks?

What role do indices play? How can they be optimised to create more certainty and comfort? What role does innovation play in expanding ILS beyond catastrophe to longevity and mortality risks?

What have we learned from Western reinsurance companies approaching the emerging markets and how can ILS avoid some barriers to entry?

Source: PwC Analysis

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