

## This time is different

Six trends that will determine the future of global non-life reinsurance

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# Foreword

The global non-life reinsurance industry has consistently delivered high returns, weathered storms both natural and financial, and innovated the way in which risk is identified, analysed and controlled.

Yet, for an industry built on forecasting and preparing for the unexpected, we tend to overestimate the speed and scale at which we change. Parts of our industry can be slow to adapt. Major incumbents are powerful and barriers to entry high.

However, no one would disagree that some aspects of reinsurance are profoundly different from only ten years ago. Most obviously, since the financial crisis so-called alternative capital has grown from a niche risk transfer mechanism to comprise almost one-fifth of the industry's capital.

In addition, the forces of change are stronger than ever. Emerging applications of technology specific to reinsurance, an ever-expanding data universe, reinsurance-focused start-ups and capital markets are combining to drive change more strongly than in the past.

Furthermore, profitability is trending down, adding fresh impetus for change. Normalising for natural catastrophes and excluding the impact of reserve releases, the industry's return on equity has fallen in four of the last five years. Even in years without major catastrophes, return on equity is now little above cost of equity.

As a result there is a polarised debate on the future of global non-life reinsurance. Market participants have widely differing views. Some believe the traditional reinsurance model must change to survive. Others are cynical of disruption and believe the market will evolve along its current lines with the same players dominating for many years to come.

In this report Deloitte's leading reinsurance specialists have focussed on developing a deeper understanding of the trends that will most likely shape the industry over the next ten years.

To identify and examine the most important future trends, we interviewed leaders from reinsurers, brokers, capital markets players and start-ups. The interviews have been supported by market data and case studies. In summary, it is our view that:

- six key trends will be most important to the future of global non-life reinsurance
- these trends will affect the industry's structure and economics, the role of reinsurers and how business is transacted
- the industry will be two-speed, with innovators and followers side-by-side
- industry-level growth and profitability will remain low by historical standards
- at company level, the gap between top performers and the rest will widen
- pivoting current business models using new technologies will underpin success.

We would like to thank those who took part in our research. We look forward to your feedback on the report and welcome your thoughts on the future of reinsurance more broadly.



**Clive Buesnel**  
Insurance Leader – UK

# Executive summary

## Future trends

The future of the reinsurance industry will be shaped primarily by new technologies, alternative capital, capital markets structuring techniques and reinsurers bundling value-added services with reinsurance. These forces will lead to the six key trends below, adding to the perennial issues of new regulation, changing reinsurance buying patterns and emerging risks.



### 1. Pivoting to risk transfer plus service model

Reinsurers will strengthen their relevance by pivoting away from providing primary insurers with capacity, which they need less than in the past. Instead, reinsurers will focus on smoothing primary insurers' earnings, protecting them from the 'risk of ruin' and offering them value-added services. These services will include technology solutions that help primary insurers to optimise their business and operating models.



### 2. Hollowing out of the middle-market

Consolidation will continue among reinsurers and brokers. The epicentre of dealmaking will be in the middle market, leading to the emergence of fewer, larger global reinsurers. The strategic rationale for M&A will be a combination of greater efficiency to defend margins, more flexibility to allocate capital across a broad range of markets and a wider offering to retain key clients.



### 3. Ongoing influx of alternative capital

The market will witness the continuing influx of alternative capital. It will spread from being tightly focused on property catastrophe to a broader array of risks, lowering the cost of capital for the market in general and the reinsurers that embrace it, in particular. Reinsurers will continue to develop new business models focused on structuring and issuing risk, rather than retaining it on the balance sheet.



### 4. Blurring of the value chain's boundaries

Insurers, brokers and reinsurers have been repositioning themselves within the reinsurance value chain to defend, create or capture greater value. New technologies and InsurTechs are accelerating this blurring of the boundaries in the value chain. At the same time, due to pricing falling faster than costs, the economics of the value chain have become unsustainable. To address this, incumbents will reshape the value chain based on closer alignment between client needs and their competitive advantages. This will result in three main types of value chain: advice-led, efficiency-led and service-led.



### 5. Rise of automated placement

The reinsurance placement process has evolved slowly and acquisition cost ratios have been rising steadily. Now, however, the market is seeing the convergence of multiple powerful forces that suggest automated reinsurance placement will be increasingly adopted. These forces range from new technologies to InsurTechs launching in this space to market-modernisation initiatives. Nonetheless, adoption will be gradual, and focused on property catastrophe in the first instance. Automated placement will most benefit distribution platforms and alternative capital providers.



### 6. Rise of exchange-based secondary markets

Infrastructure providers are building electronic exchanges to facilitate faster and cheaper trading of insurance linked securities (ILS). However, these exchanges face a number of high barriers, such as slow and infrequent reporting on losses affecting traded securities and opaque processes for valuing them. Traders will overcome these barriers, allowing the reinsurers that fully exploit secondary markets to optimise their risk and capital more dynamically.

### **Future scenarios**

Our analysis suggests that the greatest threat of disruption revolves around the degree to which:

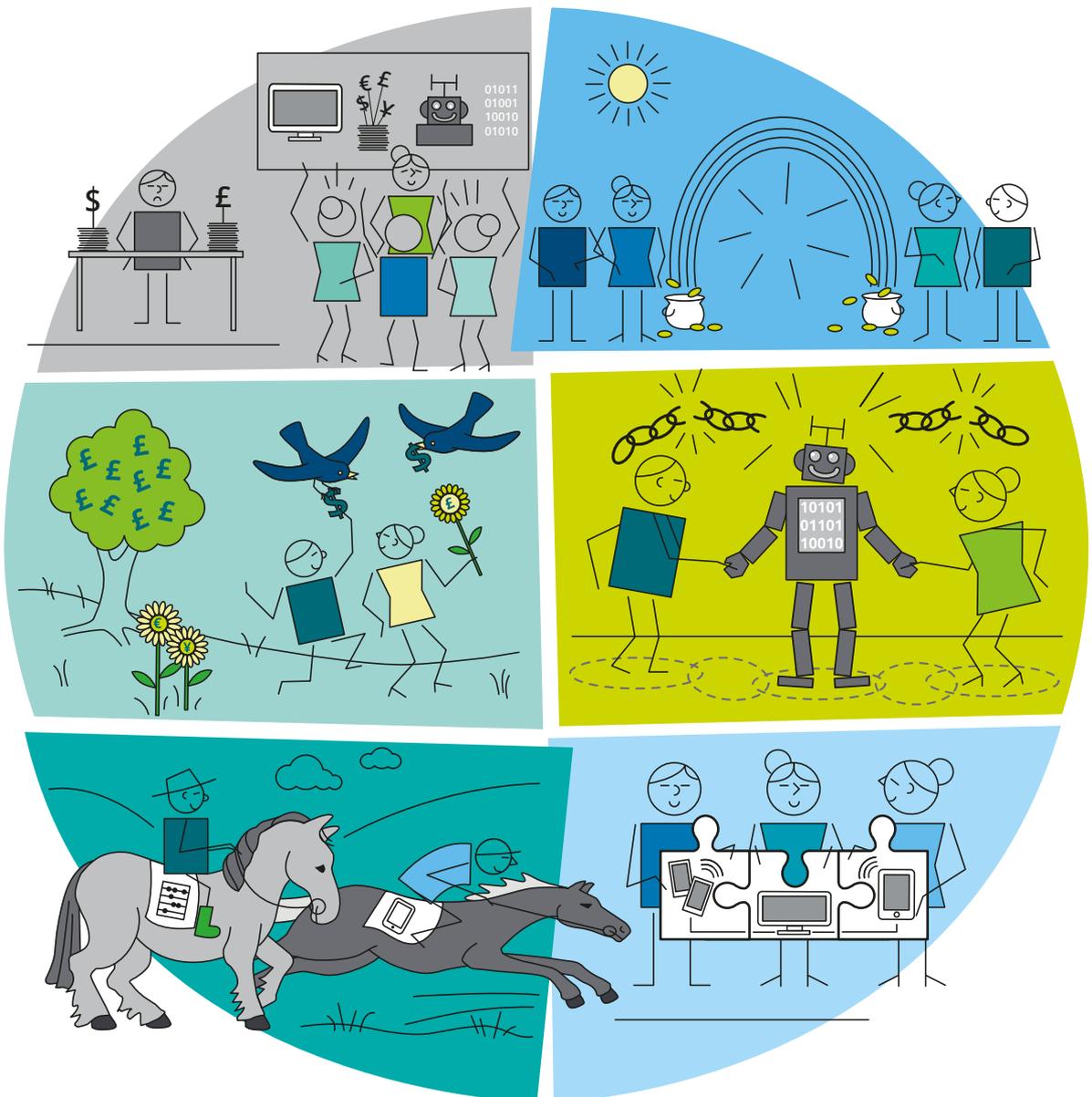
- alternative capital will back risk
- technology will enable risk placement and trading.

We analysed four future scenarios to understand the main opportunities and threats for reinsurers in more detail. The results indicate that these scenarios have widely differing implications. However, what will underpin the success of all the scenarios will be the use of new technologies to pivot current business models. For instance, an evolutionary scenario is where alternative capital remains at its current level and the industry shuns further use of technology for risk placement and trading. Even in this case, which sees the least change of the four scenarios, new technologies will be critical to growth because they will enable a service-based business model with new revenue streams.

### **Report structure**

This report is divided into two parts. Part one examines the future trends that will have greatest impact on the reinsurance industry over the next five to ten years. It analyses the implications of these trends for the market's size, profitability and dynamics, and the barriers that will impede the trends. Part two examines the opportunities and threats for reinsurers across four future scenarios, focusing on where disruption is most likely.

# Part one: Future trends



# Part one: Future trends

## Forces behind the future trends

Powerful forces are reshaping the reinsurance industry. The most significant over the next ten years will be:



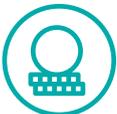
**New technology** – rapidly-advancing technologies, such as cloud storage, external data mining and analytics, will revolutionise the speed and power with which risk is identified and analysed.

Start-ups will accelerate the adoption of new technologies and ideas by bringing them to market far faster than incumbents. They will develop solutions for specific activities, with this so-called ‘modularisation’ making it easier for new players to enter the value chain and for incumbents to reposition within it.



**Capital markets structuring** – new structuring techniques will enable a wider variety of property catastrophe and other risks to be packaged into investable assets.

They will also help to overcome the issue of ‘trapped collateral’ (where investors are unable to recover their principal until losses have been quantified and these estimates have stopped ‘moving’). This will encourage a more varied group of investors to invest in insurance and reinsurance risks, accelerating the entry of alternative capital. New platform-based investment intermediaries, such as crowdfunding marketplaces, will provide an additional route for investors to enter the market.



**Alternative capital** – large pools of capital that are lower-cost than, and alternative to, reinsurers’ balance sheet capital will continue to enter the market in search of yield and returns uncorrelated with major asset classes. This will increase the stock of capital available to back risk and increase profitability for players that take advantage of alternative capital.

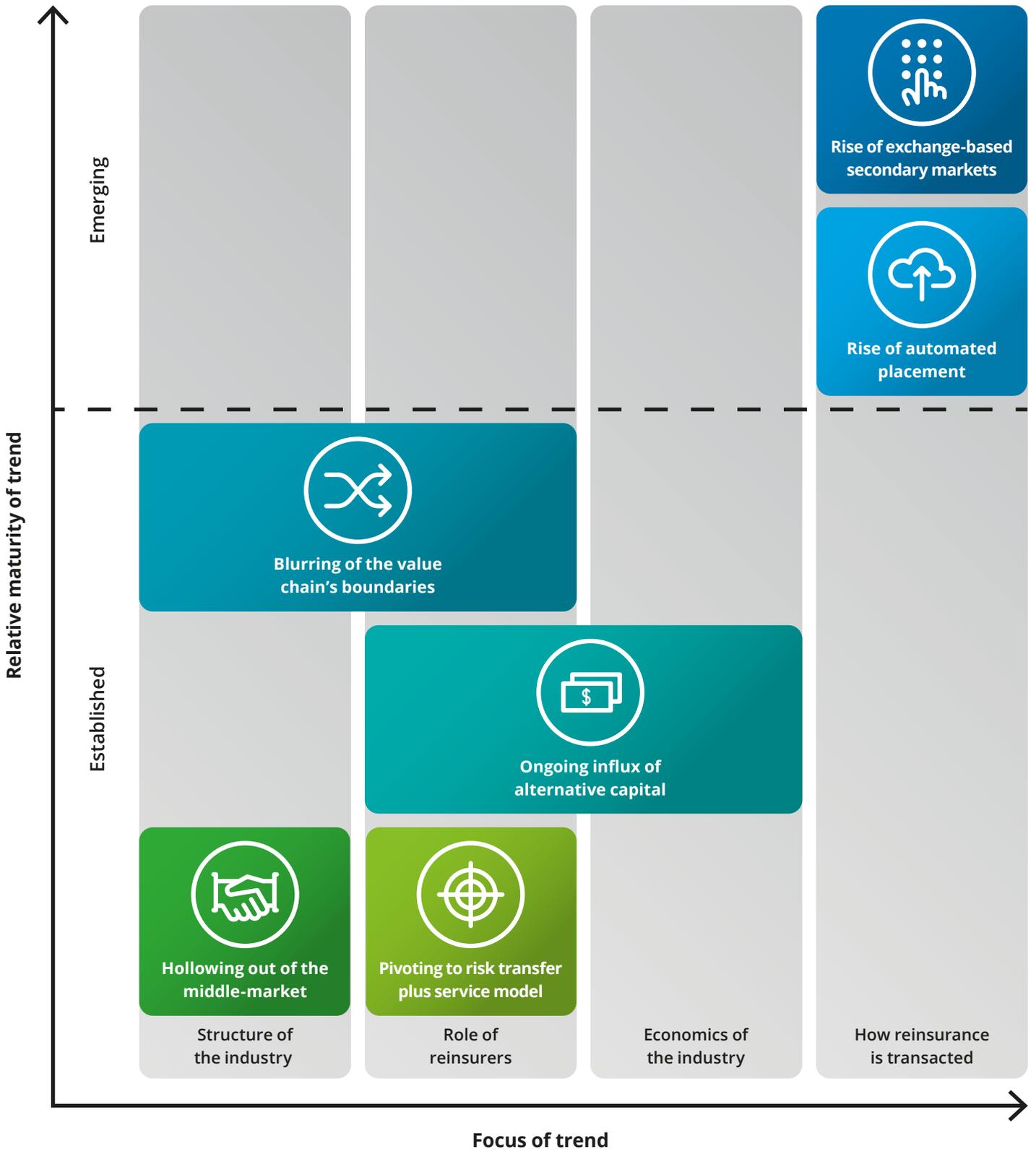
With the low-to-negative interest rate environment forecast to remain for longer than previously expected, the search for yield driving alternative capital will not abate soon.



**Bundling** – large reinsurers and brokers will bundle value-added services into their core offerings, which will help them to retain clients and put pressure on smaller, less-differentiated players. Infrastructure providers will bundle services into their platforms, making it easier to set up a reinsurance business and thereby increasing competition.

In combination, these forces will manifest in six key trends for the reinsurance industry (see Figure 1). The impact of these trends will be broad, affecting the structure of the industry, its economics, the role of reinsurers and how business is transacted.

Figure 1. Key future trends





# 1. Pivoting to risk transfer plus service model

Reinsurers will strengthen their relevance by pivoting away from providing primary insurers with capacity, which they need less than in the past. Instead, reinsurers will focus on smoothing primary insurers' earnings, protecting them from the 'risk of ruin' and offering them value-added services, such as technology solutions, to optimise their business and operating models. This will be driven by the changing needs of primary insurers as they become larger, better-capitalised and more sophisticated at managing risk. The resulting shift will particularly benefit large, diversified reinsurers that are best placed to act as full-service providers.

The proportion of primary insurance ceded to reinsurers has been steadily falling. Globally, in the past five years the non-life cession rate has fallen by 5 per cent per year, hitting 7.5 per cent in 2018 (see Figure 2). Historically cession rates were much higher. For instance, for the US Property and Casualty (P&C) industry, the cession rate fluctuated between 19 per cent and 21 per cent in the 2000s.<sup>1</sup>

One of the key reasons that primary insurers have been ceding less risk is their increasing size and capitalisation. This has provided them with the ability to retain more risk and, ultimately, to capture more

value. Moreover, due to regulations like Solvency II, which require insurers to have a more granular view of risk, enterprise risk management among primary insurers has evolved. This is enabling them to take a more selective approach to cessions. Put simply, primary insurers have less need to access capacity than in the past. This, in turn, has prompted some to question the relevance of reinsurers providing capacity via quota share arrangements.

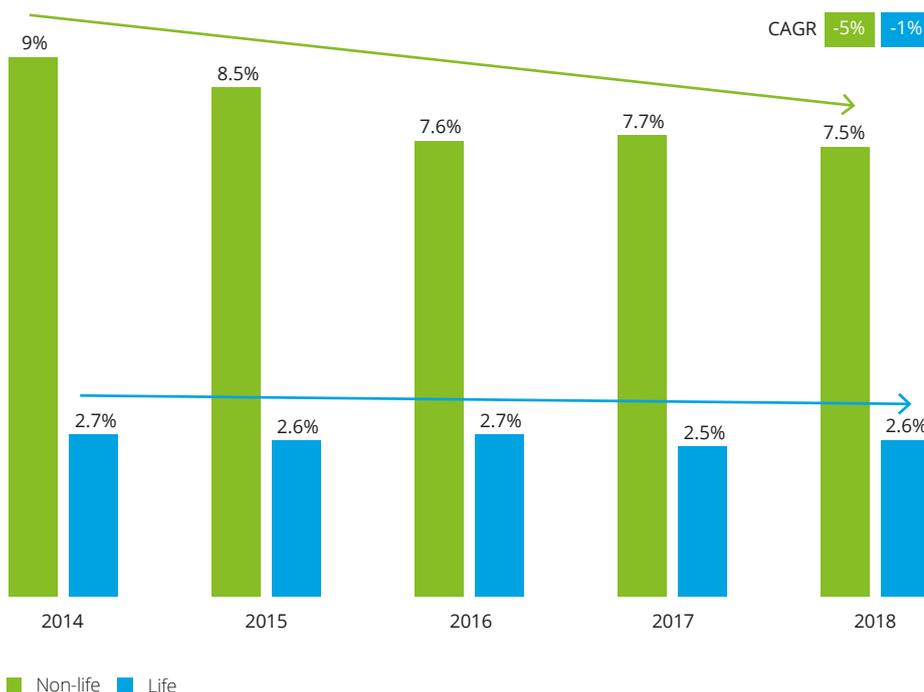
“The person who won't survive is the person providing capacity only, the last 3–5% on the slip.”

**CFO, Bermudian reinsurer**

Reinsurers will strengthen their relevance by focusing on three key roles:

- protecting primary insurers from earnings volatility and the 'risk of ruin'
- providing them with a combination of capacity, risk transfer and expertise to assist expansion in new business lines and territories
- offering them value-added services.

**Figure 2. Global cession rates**



“In the future the model is more likely to be service 90% and risk-taking or balance sheet provision only 10%.”

**Chairman, global reinsurer**

Reinsurers will focus even more on protecting primary companies from the ‘risk of ruin’ and earnings volatility, which is typically achieved through non-proportional reinsurance. Volatility in results and very large losses are increasing threats, assuming that natural catastrophes become more costly due to exposure growth (e.g. due to urbanisation and rising middle classes) and more frequent and more severe catastrophes (e.g. due to climate change). In 2017 the cost of natural catastrophes in the US broke records with the cumulative cost of billion-dollar-plus events reaching \$306.2 billion, 43 per cent above the previous record of \$214.8 billion in 2005, the year Hurricane Katrina wreaked havoc on Louisiana.<sup>2</sup> In addition, due to investor pressure, primary insurers are increasingly wary of missing earnings targets. As a result, many are moving (or have moved) reinsurance purchasing strategy to metrics such as return on equity and economic capital, which are optimal for managing volatility.<sup>3</sup>

Reinsurers will enable primary companies to expand in new lines of business and in high-growth regions. One example cited by our interviewees was cyber risk. In this line of business, there is a growing need for insurers to access a combination of reinsurers’ capacity and their expertise (e.g. in underwriting and claims). In addition,

cyber insurers need reinsurance to manage their exposure to very large and uncertain losses, such as attacks on the energy system or Cloud infrastructure. The future of capacity provision is, therefore, dependent on its context, with our interviewees arguing that it will continue to be required, but more within the context of a broader range of services than on a standalone basis.

Representing the biggest shift from today, reinsurers will continue reinventing themselves by providing value-adding services to primary insurers and end-customers. These services will include technology solutions that help primary companies to optimise their business and operating models. One of our interviewees highlighted machine learning to improve the accuracy and speed of underwriting and claims processes as a case in point. Reinsurers will also provide proactive risk management based on the Internet of Things (IoT) and insurance embedded within commercial and industrial processes.

**Barriers to change**

One of the main impediments to growing the market for reinsurance of emerging or new risks, such as those faced by fast growing, platform-based technology businesses, is that the penetration of primary insurance in these risk pools is often low. The challenge, in many cases, centres on how to persuade the holders of risk to buy more insurance. This is exacerbated by a product set that has not always kept pace with the evolution of risk and a focus among primary insurers on in-force, rather than new, business. To overcome this challenge, reinsurers have important roles to play in areas such as shifting mindsets towards innovation, new product development and supporting the insurance industry’s efforts to communicate its value proposition to a new generation of potential customers and clients.

When supporting primary insurers to expand into new lines, it may be challenging

for reinsurers to underwrite due to a lack of historical data on losses. Cyber-attacks, for example, have a short history relative to losses in more established lines. In addition, experience data can be patchy because losses are often opaque and unreported. Other major emerging risks with a dearth of experience data include nanotechnology, genetically modified crops and climate change.<sup>4</sup> That said, the IoT presents a clear opportunity to source more and better data on emerging (and traditional) risks. Machine learning can help with identifying patterns and correlations in data with which to underwrite.

Barriers to reinsurance in fast-growing emerging markets include political risk, protectionism and poor profitability in certain lines of business and countries. Our interviewees were circumspect on the potential for foreign reinsurers to achieve profitable growth in emerging markets.

Players from the technology sector have the potential to disrupt reinsurers’ value-added services. Some of them have both big data sets and deep expertise



**Case study:  
Reinsurer  
deploying the  
service model**

MHP, KUKA and

Munich Re have developed

SmartFactory as a Service for automotive manufacturers. KUKA develops the robot-based automated plant; MHP provides its digitalisation expertise, including consultancy on the closed-loop manufacturing approach throughout the project phase, and delivers systems integration. Munich Re provides integrated risk management and financing. Munich Re claims the service can shorten new products’ time to market by up to 30%.

in artificial intelligence. This combination gives them an advantageous position from which to provide services that predict and prevent risk to primary insurers and end-customers. Google is reportedly developing an AI system to predict the aftershocks of an earthquake.<sup>5</sup>

**Impact on market size**

Pivoting the role of reinsurers is unlikely to translate into strong growth in revenue. In many emerging markets, insurance penetration will likely remain low due to its perceived unaffordability. Total economic losses from disasters increased by 9 per cent per year between 2014 and 2018. In contrast, total non-life reinsurance premiums fell by 1.3 per cent per year.<sup>6</sup> Emerging risks are growing strongly but from a very low base. For example, cyber represents less than 3 per cent of total reinsurance premiums.<sup>7</sup> The market for value-added services is nascent and its future size is difficult to predict. Overall, the equity market’s perception of the reinsurance sector’s low growth prospects is summarised by its low price-to-book ratio relative to that of the insurance sector.

**Figure 3. Price-to-book ratios, January 2019**

<b>Reinsurers</b>	1.08
<b>Insurers</b>	1.80
<b>Brokers</b>	3.97

Source: Bloomberg

**Impact on market profitability**

The impact on profitability will be mixed. All other factors being equal, a shift away from capacity provision (i.e. proportional reinsurance) towards capping volatility (i.e. non-proportional reinsurance) should have a positive impact on profitability because the latter is higher risk and higher return. However, in practice, the market has experienced unattractive

non-proportional pricing in recent years.<sup>8</sup> It is unclear whether increasing volatility of loss events will lead to a sufficient uptick in demand for reinsurance and/or a reduction in capital to push up pricing and returns. The profitability of supporting primary insurers’ expansion into growth lines and regions is dependent on the business in question. Certain emerging risks are highly profitable, for example the estimated loss ratios for US cyber insurance in 2015, 2016 and 2017 were 41.5 per cent, 47.6 per cent and 32.4 per cent respectively.<sup>9</sup> The shift to providing more value-added services will be positive for profitability. New technology-based services will be asset-light and highly specialised, which implies a high return on capital.

“We reinsure a client on a big quota share and see this as a partnership – we are supporting this client as a partner, providing capital, knowledge, expertise etc.”

**Head of Casualty Underwriting, global reinsurer**

**Impact on market dynamics**

The changing role of reinsurers will be positive for large, diversified reinsurers capable of offering a full suite of products and services, from plain vanilla reinsurance through to highly bespoke capital solutions and value-added services. This view is supported by the increasing market share

captured by the largest reinsurers over the past decade. Our interviewees argued that primary insurers will increasingly seek broad partnerships with the select reinsurers capable of offering them. We observe a similar trend in other B2B financial services. For example, in institutional asset management, investors want partnerships to achieve economies of scope across multiple asset classes, bespoke solutions and a two-way exchange of IP across organisations.

That said, there will always be a role for small, deep specialists and nimble underwriters. Several of our interviewees commented that, analogous to the world of active asset management, some underwriters are capable of consistently beating the market. These people will always be in high demand and some may gravitate to new boutiques where pay and prospects are better than at more traditional players.

“Specialist reinsurers will survive because they have IP.”

**CFO, Bermudian reinsurer**

To build service offerings, we expect major reinsurers will increasingly collaborate with large technology firms that have relevant and hard to source expertise. Witness the Munich Re collaboration with IBM to provide cyber services and the Swiss Re-Tencent collaboration on AI.<sup>10</sup> This will further advantage large players over small reinsurers that are unable to provide the same level of access to clients and prospects.



## 2. Hollowing out of the middle-market

Consolidation will continue among reinsurers and brokers. This will hollow out the middle-market and lead to the emergence of fewer, larger global reinsurers. The strategic rationale for M&A will be a combination of greater efficiency to defend margins, more flexibility to allocate capital across a broad range of markets, and a wider product/service offering to cement key client relationships. Primary insurers will also accelerate consolidation by continuing to rationalise their reinsurer panels.

The market is witnessing ongoing consolidation among reinsurers and reinsurance brokers. Starting in 2015, both the number and value of M&A transactions increased sharply on the early 2010s. In each year in the period from 2015 to 2018, deals worth more than \$20 billion in aggregate closed.<sup>11</sup> Notable examples of this trend include AXA's purchase of XL (\$15 billion) in 2018, AIG's purchase of Validus (\$6 billion) in the same year and Fairfax's acquisition of Allied World in 2017 for \$5 billion. On the broking side, Marsh acquired JLT (\$6 billion) in 2018. More recently, SCOR-Covea, SCOR-Partner Re and Aon-Willis Towers Watson tie-ups have been mooted.

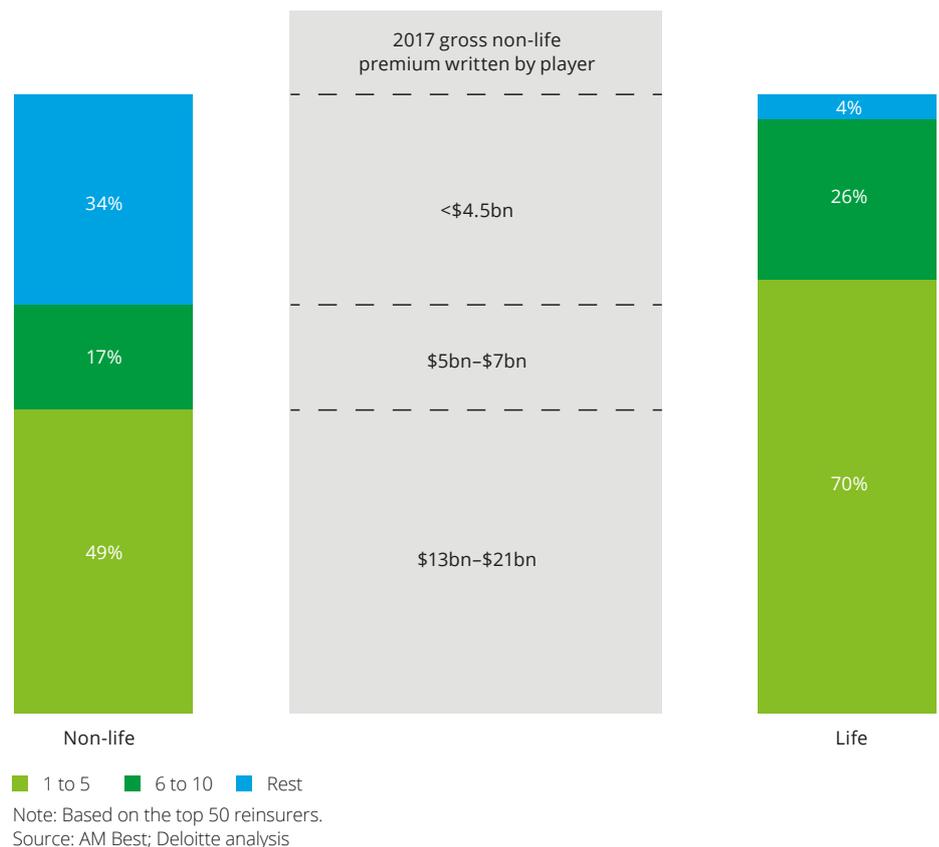
Reinsurers are engaging in M&A for a variety of reasons. Some of these apply across the sector as a whole, others are company-specific. At the sector level, the main drivers are building scale to increase efficiency and mitigate soft pricing, owning the entire value chain, acquiring specific pockets of expertise (e.g. Markel buying Nephilla to access alternative capital expertise), and diversifying by line of business and geography to build broader portfolios and increase capital efficiency. One aspect of increasing M&A is primary

insurers buying reinsurers. For some, this is a way to diversify into specialist lines of business that are less prone to commoditisation than personal lines (e.g. AXA-XL and AIG-Validus). On the broking side, Marsh's acquisition of JLT was, in part, motivated by the intention to build a full-service provider, extending the combined entity's reach in reinsurance by combining Guy Carpenter and JLT Re.

The consolidation trend will continue. Debt finance is projected to remain relatively cheap by historical standards over the next

ten years. Absent major events, downward pressure on reinsurance pricing will remain strong due to an ongoing abundance of capital. For example, following record catastrophe-hit insured losses in 2017, global reinsurance capital fell only two per cent.<sup>12</sup> In addition, the market is fragmented. In non-life reinsurance, there are five big reinsurers that each underwrite approximately \$13 billion or more in gross premiums. However, combined these players capture less than half of the market compared with 70 per cent for the five biggest players on the life side (see Figure 4).

Figure 4. 2017 global reinsurance market shares by size of reinsurer



Consolidation will be accelerated by so-called panel rationalisation. In other words, multinational primary insurers will continue aligning to a smaller set of reinsurers that have broad product suites, deep expertise and strong capitalisation. These primary insurers want access to reinsurers that can service their needs in all lines of business at both group and subsidiary levels. One of the key trends underlying panel rationalisation is ongoing M&A activity among insurers.

The middle-market will be the epicentre of dealmaking. Players in this segment (i.e. smaller than the top five but larger than small specialists focused on particular niches) will use M&A as a means of acquiring the scale, diversification and breadth of services that will be required to compete amid market conditions that are forecast to remain challenging over the long term. Analysis of returns on equity shows that for the market as a whole returns have been falling. However, the biggest reinsurers have defended their profitability more so than smaller rivals, outperforming them in four out of the five most recent years (see Figure 5).

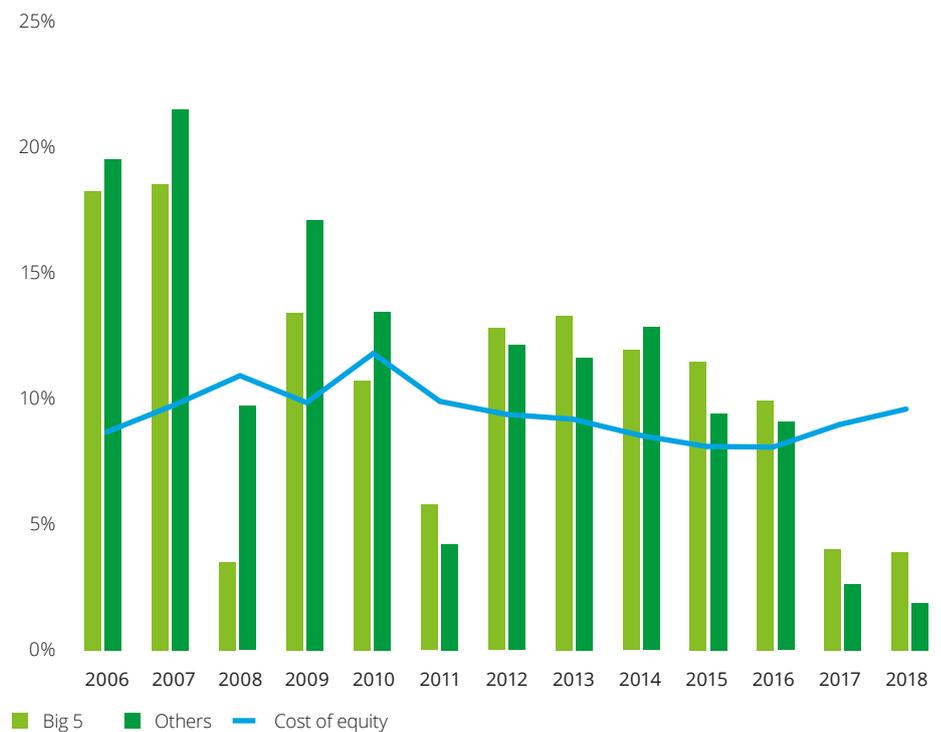
### Barriers to change

There are significant risks and costs attached to M&A and these will slow its progress by halting a number of proposed transactions. More fundamentally, reinsurers need to spread risk among multiple parties to reduce its concentration. Unlike in other markets where network effects are more powerful, such as online retail, a reinsurance market with a single, very large provider would not make sense. This is particularly true of non-life reinsurance because it is more volatile than life reinsurance.

### Impact on market size

Transactions will withdraw pockets of capital from the market and shrink headcounts. For instance, AIG's purchase of Validus and AXA's purchase of XL-Catlin withdrew capital of \$13.7 billion in 2018.<sup>13</sup> However, it is unlikely that transactions will

Figure 5. Reinsurers' return on equity



Note: The 'Big 5' (non-life) reinsurers include Hannover Re, Munich Re, Swiss Re, Berkshire Hathaway and Lloyd's. 'Others' include 18 major reinsurers.  
Source: Bloomberg; Deloitte analysis

have a material impact on the market's size as measured by premiums. One argument for M&A being supportive of growth is that large players can afford to spend more on innovation (in absolute terms) than smaller players. Swiss Re, for instance, points to the role that product innovation is playing in its growth and reportedly has a \$250 million annual budget for R&D in risk modelling.<sup>14</sup>

### Impact on market profitability

Consolidation will be positive for profitability. Large players are better able to defend margins than smaller players due to greater scale and diversification. However, whether this will be enough to arrest the downward trend in profitability experienced by the reinsurance industry as a whole, including the biggest reinsurers, is a bigger and unanswered question.

### Impact on market dynamics

Large players will tighten their grip on premiums as the middle-market consolidates. Brokers will look to deepen their relationships with clients to counteract the shifting balance of power in favour of larger reinsurers. Small players will have a role as specialists, but the successful among them will be bolt-on acquisition targets. Given the importance of diversification, the business model of pure-play reinsurers will come into question.



“The small focused reinsurers have done well in an evolving and fast-changing market. In the future, there will continue to be 4-5 big players, but I also think you’ll see a stronger position among reinsurers 5-15. It’s not just about scale, and I don’t think we’ll end up with just a few big players.”

**CFO, Bermudian reinsurer**



### 3. Ongoing influx of alternative capital

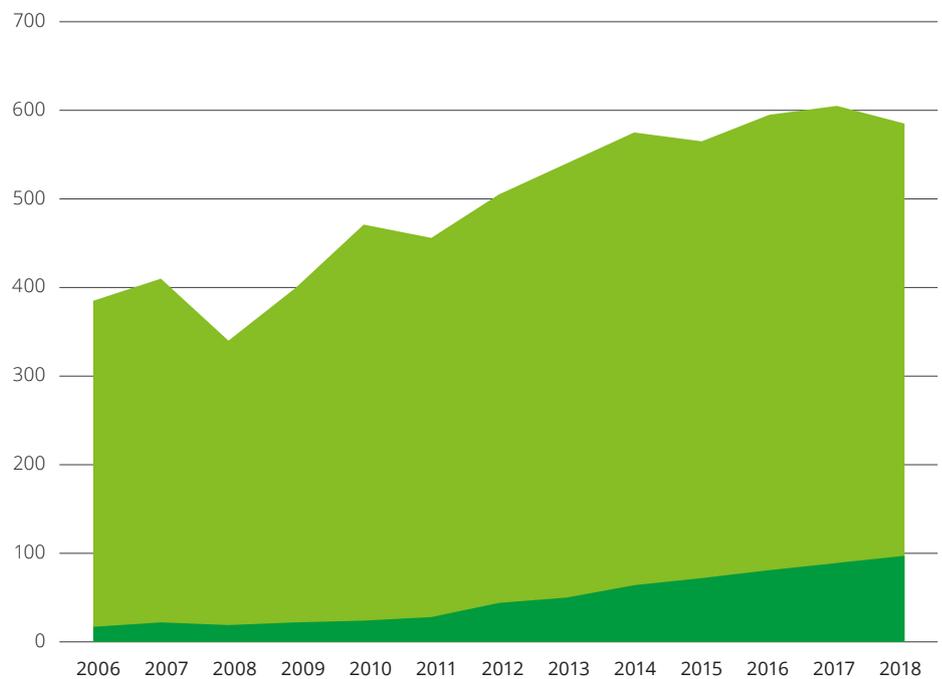
The market will witness the continuing influx of alternative capital. It will spread from being tightly-focused on property catastrophe to a broader array of risks, lowering the cost of capital for the market in general and for the reinsurers that embrace it, in particular. This will be driven by continued investor demand for the low-correlation returns that alternative capital offers, increasing transparency into risk and innovative new investment structures. Alternative capital will moderate growth in premiums. Reinsurers will continue developing new business models, focused on structuring and issuing risk, rather than retaining it on the balance sheet.

Alternative capital has been steadily increasing its share of overall reinsurance capital in recent years.<sup>15</sup> Having outpaced the growth of reinsurers’ balance sheet capital, alternative capital represented just under a fifth (17 per cent) of overall capital in 2018 (see Figure 6). Following record losses in 2017, in 2018 alternative capital grew at 9 per cent while traditional capital fell by 5 per cent, indicating commitment on the part of alternative capital investors.

The consensus view among market participants, which was echoed by our interviewees, is that alternative capital will remain a permanent feature of the reinsurance market, although its growth will likely moderate.

Future growth will be supported by three main factors. First, demand for returns largely uncorrelated with major asset classes among institutional investors will grow: more investors will recognise the benefits of reinsurance risk as a diversifying asset (only one per cent of European pension funds had exposure to insurance-

Figure 6. Reinsurance capital by source, US\$ billion



	2006-18 CAGR	2018 Share
Reinsurer balance sheet	2%	83%
Alternative	16%	17%

Source: Aon; Deloitte analysis

linked-securities or ILS as of 2018).<sup>16</sup> Second, the supply of risk to alternative capital structures will increase. More primary insurers and reinsurers will embrace a hybrid earnings model that combines underwriting returns (from retaining risk on the balance sheet) with fees (for sharing risk with alternative capital sources). Third, regulators will support innovation in the alternative capital space (e.g. the new collateralised reinsurer class proposed by the Bermuda Monetary Authority).

More important than continued growth, alternative capital will undergo the following key developments.

**New structures and deeper reinsurer-investor partnerships will proliferate.**

New structures will facilitate the entry of a broader range of institutional investors, who are looking for more bespoke ways to invest in reinsurance. This will not only increase the supply of alternative capital, but also offer opportunities for deep partnerships between reinsurers and investors.

“Alternative capital is definitely here to stay, despite some challenges from recent losses creating trapped capital and not being able to reload.”

**Head of Casualty Underwriting,  
global reinsurer**

**Investors will allocate more capital to non-catastrophe risks.** To date alternative capital has focused on catastrophe risk. This is largely because it offers an attractive risk-return profile, has a short duration and is relatively transparent (i.e. well-modelled and well understood). By one estimate, up to half of the capital backing catastrophes worldwide is provided by sources alternative to reinsurers’ balance sheets, compared with 17 per cent of reinsurance capital overall (see Figure 6).<sup>17</sup>

Transparency in pricing and valuation of non-catastrophe risk is increasing and this will likely lead to more securitisation. A number of market participants are seeking to increase the transparency of non-catastrophe risk by modelling it in more advanced ways than in the past (e.g. using machine learning on big data sets). This, argued one of the interviewees, is comparable to developments in credit markets: risk transparency was increased due to the introduction of FICO credit scores (which measure the creditworthiness of an individual) and advanced risk models. These developments increased risk transparency and ultimately helped to drive up securitisation, for example in mortgages.



**Case study:  
Innovation in ILS  
structuring**

In January 2019, in a move away from property catastrophe risk, Ledger Investing completed its first transaction, directly securitising a portfolio of non-standard passenger auto insurance between a Managing General Agent and the AIG-owned ILS fund manager AlphaCat. One of the innovative features was the funding model. The investor received variable rate principal-at-risk notes. The funding of these notes (i.e. the principal) is also variable. This allows for flexible capital contributions, which are designed to match closely any increase in risk as the underlying insurance portfolio grows. This was reliant on Ledger providing automated, daily updates of premium, exposure and loss metrics to allow investors to develop a view on performance and trade the securities.

**A new type of alternative capital manager will emerge.** At present, reinsurers that also manage alternative capital are primarily funded by their own balance sheets. Our interviewees argued that in future we will see the emergence of reinsurers that are primarily funded by alternative sources, more akin to an asset manager than a reinsurance company, ‘picking risks like stocks’. These players will be agnostic to the source of capital that backs the risk they underwrite. This will allow them to match risk with the most appropriate source of capital (based on its risk appetite and cost) more effectively.

**Growth in the share of alternative capital will help the industry to finance risk at a lower cost.** Alternative capital is typically lower cost than reinsurance balance sheet capital (see Figure 7). This is driven by the low correlation between alternative capital investments (e.g. catastrophe bonds) and the equity market. In addition, alternative capital managers have very low operational overheads. For instance, Leadenhall Capital, which is a standalone ILS fund manager, commands \$27 million in premiums per employee. For Munich Re, it is \$1.5 million in premiums per employee.<sup>18</sup>

“We’re focused on how to model risk better to make risk more transparent. This is what has happened on the credit side, where risk transparency was increased due to account-level credit scoring (like FICO) and portfolio-level stochastic models, and this accelerated securitisation.”

**CEO & Founder, ILS InsurTech**

**Growth in the share of alternative capital will help the industry to finance risk at a lower cost.** Alternative capital is typically lower cost than reinsurance balance sheet capital (see Figure 7). This is driven by the low correlation between alternative capital investments (e.g. catastrophe bonds) and the equity market. In addition, alternative capital managers have very low operational overheads. For instance, Leadenhall Capital, which is a standalone ILS fund manager, commands \$27 million in premiums per employee. For Munich Re, it is \$1.5 million in premiums per employee.<sup>18</sup>

Depending on the extent to which alternative capital grows, it will reduce the industry's overall cost of capital. For the industry as a whole, this is significant because returns have been falling (even after excluding the impact of natural catastrophes) and are now little above the cost of capital. For individual reinsurers, with greater freedom of manoeuvre than the market as a whole, alternative capital represents an even greater opportunity to boost returns.

**Figure 7. Illustrative cost of reinsurance balance sheet capital**

	Reinsurer	Alternative capital
<b>Risk-free return</b>	2%	2%
<b>Market return</b>	10%	10%
<b>Beta factor</b>	0.8	0.10
<b>Cost of equity</b>	8%	3%
<b>Cost of debt</b>	3%	N/A
<b>Share of equity</b>	80%	N/A
<b>Share of debt (leverage ratio)</b>	20%	N/A
<b>Cost of capital</b>	<b>7%</b>	<b>3%</b>

Source: Aon, Artemis, Bloomberg, Deloitte analysis

“You will still need someone to do the middle part of the value chain – the selection and pricing of risks, the guts of reinsurance – but third-party capital may pay you for that.”

**CFO, Bermudian reinsurer**

“The division of insurance and reinsurance will go away – instead the approach should be: I’m holding risk, where can I source the cheapest capital to back that risk and how can I access it directly.”

**CEO & Founder, ILS InsurTech**



**Case study: Strategic reinsurer-alternative capital investor partnership**

Vermeer Re, which launched for the January 2019 reinsurance renewals, is RenRe’s first managed rated reinsurance vehicle for a single pension fund investor, Dutch pension fund PGGM. Vermeer Re targets risk-remote layers of US property catastrophe reinsurance programmes. Vermeer Re is believed to have a low cost of capital relative to the cost of reinsurance balance sheet capital. RenRe claims that this, combined with PGGM’s focus on fees and costs, means that Vermeer Re can have a lower hurdle rate for underwriters than other forms of capital.

### Barriers to change

The future growth of alternative capital will not be linear. Large reinsurers, which command half of the market's premium (see Figure 4), may, as one of our interviewees suggested, face pressure from shareholders to service their balance sheets with risk to maintain steadily growing dividends.

Absent innovation in data, technology and structuring techniques, many types of risk outside property catastrophe will be too opaque and/or too long in duration for mainstream capital markets investors. Key innovations that would address these issues include ways to reduce the burden of so-called trapped collateral (i.e. capital trapped within investments that cannot be released until liabilities have been met once insured losses have been quantified) and standardisation of risk (e.g. the creation of widely recognised and understood units of risk). Investors also need to see faster and more frequent reporting of positions, which would help to engender greater faith in the valuation measures.

Many buyers will want access to more than capital. Most obviously, buyers expanding into new lines will seek the level of service, underwriting expertise and skill that is most readily available in addition to capital at global reinsurers. We see this in the trend for primary insurers to purchase cyber reinsurance bundled with risk management services. One of our interviewees bluntly stated that ILS are not so relevant to many buyers.

“After some setbacks in the past two years with some bonds getting pulled, I believe that alternative risk transfer and insurance linked securities will continue to grow but not dramatically. The market is still very small and not so relevant for most buyers.”

**Chairman, global reinsurer**

“Some big reinsurers will never go down the route of using other people's capital because they have such large equity balance sheets to service. Once you've got that many shareholders, you are beholden to them and it's really hard to downsize your balance sheet, no matter how much equity you buy back.”

### Alternative capital SME

#### Impact on market size

The ongoing entry of alternative capital will depress premium growth in the long term. To date alternative capital has focused on risks underwritten by reinsurers. However, in future the market will likely see a greater proportion of risks passed directly from primary insurers and even corporates to third-party investors. This offers the potential for fewer steps and, therefore, less cost in the process of matching risk to capital. Nonetheless, the extent to which this will grow is unclear, given its early stage of development and the costs of securitisation, even after stripping out a layer of intermediation, can be prohibitive.

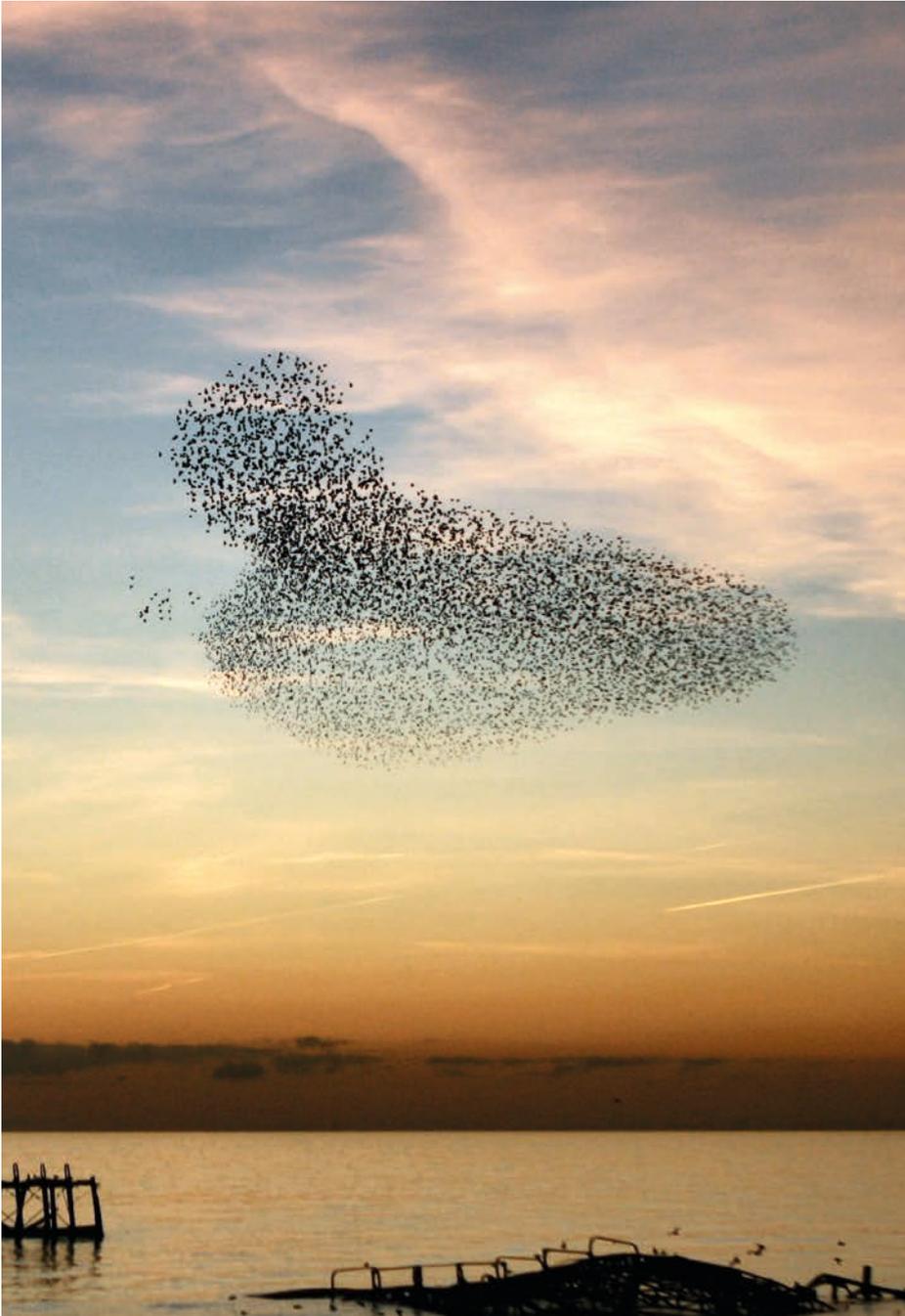
#### Impact on market profitability

Reinsurers that embrace alternative capital will see higher margins through a lower

cost of capital and additional fee income. On the other hand, for reinsurers that do not, more plentiful capital will hold down pricing. The impact of alternative capital's entry can be seen in the dampening of the market cycle. Not only has the cycle reduced in amplitude, but prices have also been trending downward over the long term. Since 1990, the property catastrophe reinsurance price index has fallen from a high of 386 in 1993 post 1992's Hurricane Andrew, to 188 in 2018.<sup>19</sup> In addition, some argue that the impact of the entry of alternative capital can be seen in the divergence between trends in insurance and reinsurance pricing, with the former displaying more obvious signs of hardening in recent years.

#### Impact on market dynamics

The most efficient reinsurers will benefit. Lower pricing from more alternative plus traditional capital will put pressure on profitability and, in turn, drive up the need for more efficiency (i.e. lower expense ratios). A flatter reinsurance cycle will ultimately be a positive force. Less volatility in prices will continue to create an environment where reinsurers innovate to improve performance rather than 'waiting for a big hurricane'. A small number of reinsurers will focus on matching risk with alternative capital sources, rather than reinsuring it, with this becoming their main business model.



“The frictional costs are still a major issue when it comes to encouraging someone like a corporate to issue a catastrophe bond.”

**Alternative capital SME**

“The cycle will not come back as we used to see it. Maybe it will in a much less volatile way than in the past, but the ongoing professionalisation of the industry will smooth any cycle.”

**Chairman, global reinsurer**





## 4. Blurring of the value chain's boundaries

Insurers, brokers and reinsurers have been repositioning themselves within the reinsurance value chain to defend, create or capture greater value. New technology and InsurTechs are accelerating this blurring of the boundaries in the value chain. At the same time, due to pricing falling faster than costs, the economics of the value chain have become unsustainable. To address this, incumbents will reshape the value chain based on closer alignment between client needs and their competitive advantages. This will result in three main types of value chain: advice-led, efficiency-led and service-led. These shifts will particularly benefit global brokers, full-service global reinsurers and composites that own and exploit the entire risk-to-capital chain.

In recent years the three main constituents of the reinsurance value chain – insurers, reinsurers and brokers – have been repositioning themselves to defend, create or capture greater value:

- **Insurers have moved into reinsurance largely through acquisitions** to build scale and diversify. For instance, AXA acquired XL-Catlin in 2018 citing, among other factors, enhanced capital diversification (30 per cent reduction to XL's Solvency Capital Requirement), access to alternative capital and the creation of the largest player in global P&C Commercial Lines.<sup>20</sup>
- **Reinsurers have been growing their primary companies** both organically and via M&A to gain more direct access to risk, build end-client relationships and ultimately unlock key sources of growth. Among the largest three reinsurance groups, Swiss Re has grown its insurance

business, Corporate Solutions, to 11 per cent of group premiums in 2018; Munich Re is approaching an even split between primary insurance and reinsurance and Berkshire Hathaway has propelled Geico to be a leading auto insurer.

- Meanwhile, **brokers have moved up the value chain** into underwriting through vehicles such as Managing General Agents, line-slips, binders and broker facilities, and down into client facing services such as data provision, data analytics and consultancy. A regulatory study found that 15 out of 73 brokers in the London-based commercial insurance market provided such services, accounting for 8% of their 2016 revenue.<sup>21</sup>

One manifestation of this trend is that few of the world's largest reinsurance groups underwrite solely reinsurance, the 'pure-play' model. Most are part of

groups that own sizable primary insurance companies. Of the top ten reinsurers by 2017 premiums, only Reinsurance Group of America, a life and health specialist, and state-backed General Insurance Corporation of India Re are pure-play reinsurers.

New technology is making it easier to enter the value chain and to reposition within it. The market is witnessing advances in technology, coupled with a proliferation of start-ups developing solutions for specific reinsurance activities. This so-called modularisation is making it easier for incumbents and new entrants to buy, rent or outsource activities within the reinsurance value chain. One example is underwriting. Analyze Re, a 2013 start-up, has developed a SaaS platform that provides real-time reinsurance analytics. It is designed to help optimise reinsurers' pricing and portfolio management.<sup>22</sup>

“If you can demonstrate the value you bring to the chain and capture it, then I think you've got a long and prestigious future in the industry. But if you can't nail down what it is you bring or can't monetise the IP in your organisation, then I think you could get disrupted at the moment.”

**Alternative capital SME**

**Figure 8. Reinsurance subset companies' underwriting profitability excluding the impact of natural catastrophes and reserve releases**

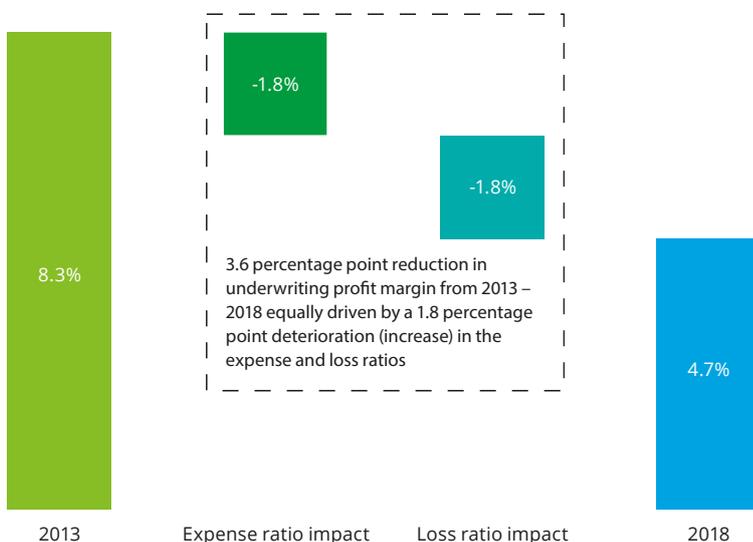


Note: subset companies include 19 major reinsurers.  
Source: Willis Re

Nonetheless, at the reinsurance industry level, the economics of the value chain are deteriorating. Due to pricing falling faster than costs, customers and suppliers are capturing an increasing share of value (see Figure 8). The industry's core underwriting profit margin (i.e. excluding the impact of natural catastrophes, which are highly volatile, and reserve releases, which smooth results from year to year) has fallen from 8.3 per cent to 4.7 per cent in the five years from 2013 to 2018. This was driven equally by a 1.8 percentage point increase in both the expense ratio and the loss ratio (see Figure 9).

Many market participants expect the structure of the value chain to shift dramatically over the next ten years. Our interviewees unanimously shared this belief. However, they had widely differing views on how the chain will be reshaped, and by whom. Some argued that reinsurers would ultimately own the chain, providing a more direct and, therefore, cost-effective route from risk to capital; others foresaw a broader role for global brokers, using their data to cement relationships with clients, as trusted advisers.

**Figure 9. Reinsurance subset companies' underwriting profitability excluding the impact of natural catastrophes and reserve releases, 2013 vs 2018**



Note: subset companies include 19 major reinsurers.  
Source: Willis Re

Three distinct forms of value chain will emerge as insurers, brokers and reinsurers seek to defend their profitability (see Figure 10). These will be based on a stronger alignment between specific client needs and those best placed to service those needs.

**Advice-led.** Primary insurers will continue to need advice on structuring a risk transfer programme, which is typically not their core competence. Global brokers are in the strongest position to provide it. They have access to multiple competing reinsurers, investment banking capabilities to advise on alternative capital structures, and deep insight on how and where to place reinsurance, based on proprietary data.

Large corporates will increasingly need advice on risk management, encompassing both insurance and other mechanisms for

risk control (e.g. post-incident organisational response). This will be influenced by the ongoing shift in the global economy from value creation through tangible assets, which are relatively easy to insure, to intangible assets (e.g. software, networks and data), which are harder to insure. The share of the S&P 500's total value accounted for by intangible assets has grown from 17 per cent in 1975 to an astonishing 84 per cent in 2015, according to one study.<sup>23</sup> Global brokers are well-placed to provide this advice. They have a combination of risk insight based on big data sets, analytics capabilities and consulting skills.

“Value chains have to collapse. That’s why technology needs to take a much bigger role. Look at how much is absorbed in expenses.”

**Head of Casualty Underwriting, global reinsurer**

One example of this trend is the growing need for advice on captive insurers. Large corporates with technology-based business models, including autonomous car manufacturers and sharing economy platforms, are increasingly looking to captives as a risk management tool to maximise cost savings, control and privacy. Global brokers are leading the development of captives for these emerging sectors of the economy.

**Efficiency-led.** For primary insurers, the need to access the most cost-effective sources of reinsurance will increase. Among other factors, this will be driven by the

**Figure 10. Emerging reinsurance value chains**

Type of value chain	Value chain leader	Leader’s competitive advantage	Target clients	Client need
<b>Advice-led</b>	Global broker	<ul style="list-style-type: none"> <li>• Data</li> <li>• Analytics</li> <li>• Consulting</li> <li>• Access to reinsurers</li> </ul>	<ul style="list-style-type: none"> <li>• Primary insurers</li> <li>• Large corporates</li> </ul>	<ul style="list-style-type: none"> <li>• Advice on risk transfer</li> <li>• Advice on risk management</li> </ul>
<b>Efficiency-led</b>	Insurance-to-reinsurance group	<ul style="list-style-type: none"> <li>• Size</li> <li>• Access to risk</li> <li>• B2C capability</li> </ul>	<ul style="list-style-type: none"> <li>• Retail / SME insurers</li> <li>• Composite insurance and reinsurance groups</li> </ul>	<ul style="list-style-type: none"> <li>• Capital and operational efficiency</li> </ul>
<b>Service-led</b>	Global reinsurer	<ul style="list-style-type: none"> <li>• Balance sheet</li> <li>• Risk expertise</li> <li>• Technology</li> <li>• Solutions</li> </ul>	<ul style="list-style-type: none"> <li>• Primary insurers with more complex needs</li> <li>• Large corporates</li> </ul>	<ul style="list-style-type: none"> <li>• Risk, capital and business optimisation</li> </ul>

Note: This excludes value chains based on protectionism. Source: Deloitte analysis

steady rise of online insurance purchasing and the associated rise of price sensitivity among retail and small to mid-sized commercial customers. This pressure will see insurance-to-reinsurance groups build highly integrated full risk-to-capital value chains to drive efficiency (including selling directly to customers and using companies within the same group for reinsurance).

**Service-led.** Primary insurers have increasingly complex needs of reinsurers. These range from plain vanilla quote shares (i.e. reinsurance arrangements whereby premiums and claims are shared between insurer and reinsurer according to pre-agreed proportions or quotas) to highly bespoke capital solutions based on a granular risk insight. In addition, insurers are constantly looking to optimise their business and operating models. Only full-service global reinsurers are able to cater to these needs, via a single, deep

partnership. They have the full product suite and deep risk knowledge and expertise. This position is supported by considerable ongoing investments in R&D. In the past five years, some have also forged ahead in technology capabilities and developed connections among the InsurTech community, which they are monetising by selling a bundle of reinsurance-plus services to insurers.

**Barriers to change**

The principal barriers to the development of these value chains are competition between incumbents and a potential regulatory backlash. Global reinsurers and global brokers to some extent provide the same services to the same client base. For instance, both provide analytics to primary insurers. They will likely compete in these overlapping areas, and this may impede the development of an advice-led chain as distinct from a service-led chain.

Similarly, reinsurers may seek to block the development of an efficiency-led, fully integrated end-to-end value chain as this cannibalises their offering, i.e. external reinsurance. Regulators may prevent such a value chain on account of it being anti-competitive. Agents and brokers would not stand by and let a primary company disintermediate them.

### Impact on market size

The development of these three value chains would have opposing influences on growth in premiums. A service-led chain would continue to fuel growth. For example, this type of value chain would see reinsurers support growth in primary insurance through product innovation and in other, less well-known ways, such as services that improve the insurance customer and intermediary experience. Similarly, an advice-led chain would drive



#### Case study: Reinsurer deploying technology service-led model

Swiss Re provides machine learning services such as:

**ADAPT** is a scalable platform that uses machine learning to automate repetitive document processing tasks such as claims processing, contract intelligence gathering and submissions processing

**Insights Re** is a document enrichment platform powered by semantic search and AI capabilities, which enables document intelligence (classification, summarisation and search) and information retrieval

**Pythia** is a scalable platform, which enables data models and visualisations, for predictive modelling



#### Case study: Group owning full risk-to-capital value chain

In February 2019, Berkshire Hathaway launched THREE, a digital-first insurer with a simple three-page small business policy developed to be easy to understand. It is primarily sold directly via its own website and covers business liability, business interruption, cyber, workers' compensation, property and assets, and business auto. Because the policy is sold directly by a group including a major reinsurer, Gen Re, this is an important new example of a composite owning the entire risk-to-capital value chain, offering the potential for material savings on brokerage and reinsurance through rationalisation of links in the chain.

growth in consulting revenue. On the other hand, an efficiency-led chain would likely shrink premiums in the lines to which it applied. A highly efficient value chain with low distribution costs would likely support lower yet risk-adequate prices in the long term, (but would need significant marketing spend, as per the growth of direct channels in US auto insurance, in the short term).

### Impact on market profitability

Reshaping the value chain to focus more closely on client needs and the competitive advantages of the players within the chain would be positive for profitability. The advice-led chain would be high-margin, due to a combination of highly specialised services and an asset-light operating model. The efficiency-led chain would strip out frictional costs. The service-led chain would likely boost margins through increased client loyalty and ancillary income from services.

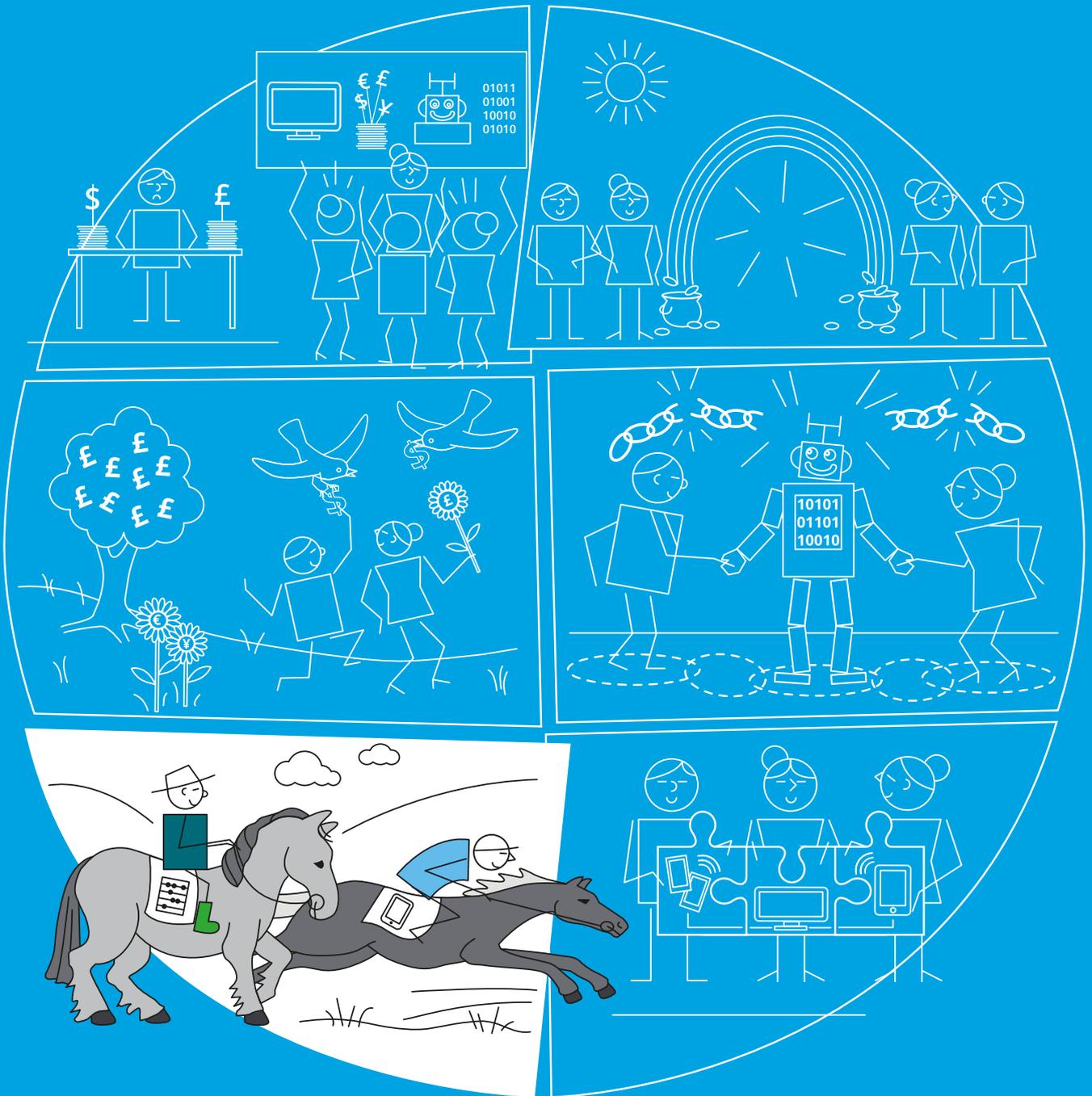
### Impact on market dynamics

Global brokers, full-service global reinsurers and groups comprising insurers and reinsurers (i.e. composites) that exploit the entire value chain are particularly well placed for the future. They have a compelling position from which to redefine the value chain, based on stronger alignment between client needs and their competitive advantages. On the other hand, those who cannot demonstrate and monetise the value they bring to the chain will ultimately be forced to reinvent themselves or face an uncertain future. We believe that the market will see the continuing emergence of all three types of value chain. However, the efficiency-led chain will likely be the fastest to develop. This is because large composite groups can assemble an efficiency-led chain relatively quickly through M&A. In contrast, the advice-led and service-led chains would require organic growth, which would take longer.

“I don't think the value chain will be decomposed. it's more like the model morphs into a multi-purpose company and you will need to be a large, multi-faceted business to do that.

Country CEO, global reinsurer





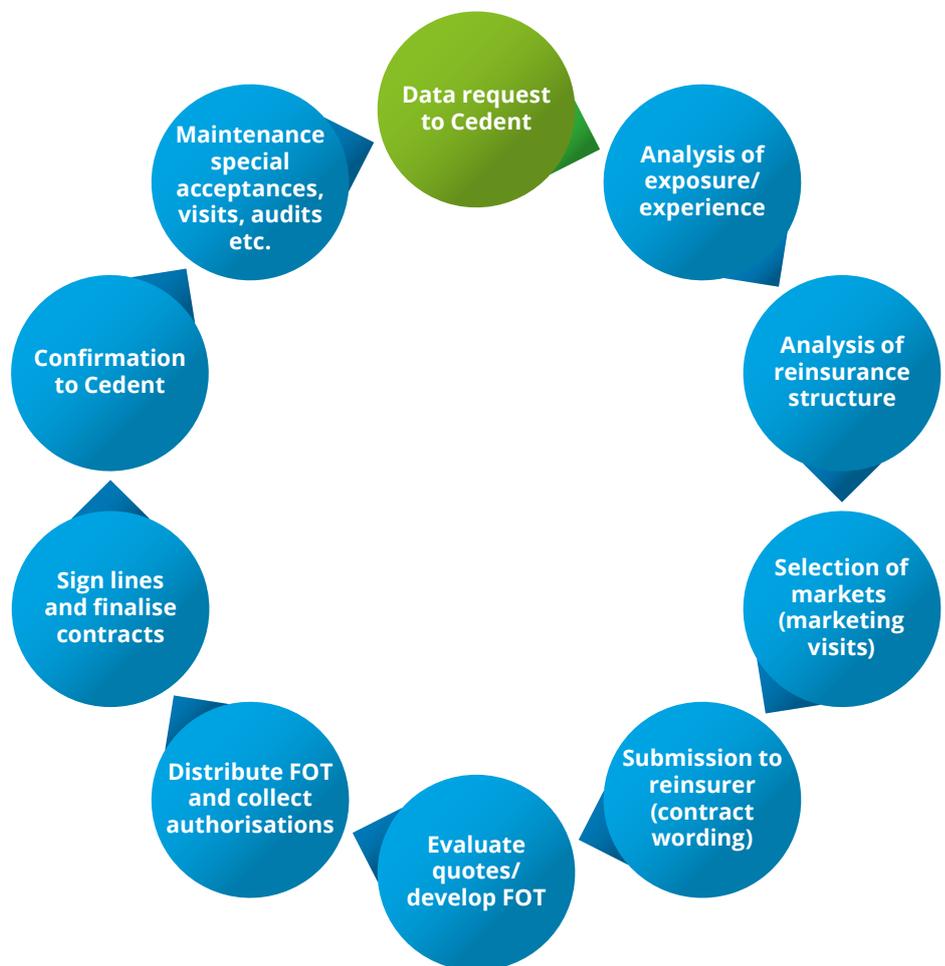
## 5. Rise of automated placement

The traditional reinsurance placement process has been too slow to evolve and acquisition cost ratios have been rising steadily. The market is now seeing the convergence of multiple powerful forces that suggest automated reinsurance placement be adopted. These forces range from new technology to InsurTechs launching in this space to market modernisation initiatives. Nonetheless, adoption will be gradual and narrowly focused on property catastrophe in the first instance. Distribution platforms and alternative capital providers have the most to benefit from automated placement.

The reinsurance placement process has evolved slowly, and is now considered by some to be unduly complex, slow and expensive in contrast to the way in which other financial products are bought and sold. The traditional process includes discovering reinsurance prices, agreeing contract terms and conditions, and allocating limits among several reinsurers. It involves in-person meetings, numerous steps and multiple handovers (see Figure 11). This creates inefficiency and opacity. In contrast, in government debt markets, for example, the process for issuing securities is relatively quick and low cost due to the use of automated, digital auction systems and standardised contracts.

For the first time, the market is experiencing the convergence of powerful, varied drivers of automation in reinsurance placing. Expense ratios have been rising on an unsustainable trend. The technology to automate complex processes that require intermediation by trusted parties has leapt forward in the past five years. Most obviously, blockchain provides a mechanism by which to issue and execute

Figure 11. Typical placement life cycle for a reinsurance treaty, US market



Note: FOT stands for Firm Order Terms. Green circle is the start point.  
Source: Insurance Accounting and Systems Association

smart (i.e. automated) contracts. In the Lloyd's market, electronic placement has been mandated with rising targets for the proportion of risk to be placed via a recognised electronic placement system (50 per cent in Q2 2019).<sup>24</sup> Reinsurance will be added to this initiative. Furthermore, start-ups are entering this space. In 2018 Tremor completed the first programmatic auction (i.e. based on blind bids) of reinsurance in a commercial environment.<sup>25</sup>



**Case study:  
Automated  
placement in  
reinsurance**

Tremor is a programmatic digital auction platform for the placement of reinsurance risk. It matches risk with capital by enabling carriers to post their reinsurance orders on a two-sided platform, which are then matched with bids from capital providers. In December 2018, a top 20 US carrier used Tremor to place its entire property catastrophe tower with the assistance of its broker. The auction attracted approximately 50 buyers, including reinsurers and alternative capital, and placed \$700 million of capacity. Tremor claims this was placed at competitive prices at a fraction of the time and cost of a traditional, negotiation-based placement.

**Barriers to change**

Adoption will be gradual and focus on property catastrophe in the first instance. Many reinsurance contracts are too bespoke for automated placement. Not only are they complex and specific to the primary insurer, they can also require annual renegotiation over terms and conditions. The market is seeing a trend towards more bespoke reinsurance

“A number of players, especially [those involved in] certain reinsurance deals like capital solutions, are not interested in total transparency and will stay with bespoke solutions. I doubt that there is enough trust to deal via a platform, although natural catastrophe risk would potentially be applicable.”

**Chairman, global reinsurer**

contracts, due to Solvency II promoting a more granular understanding of risk. On the other hand, property catastrophe reinsurance programmes are relatively straightforward and will therefore lend themselves to automated placement more so than other lines. It is no surprise that Tremor began in this part of the market.

Vested interests in the current system are strong. Incumbent underwriters and brokers with profitable, multi-year relationships are likely to resist changes that would cannibalise their business. Established culture and ways of working may block change to entrenched processes. Previous initiatives to promote electronic trading struggled to gain momentum partly for this reason.

Market participants might not trust an automated system. One major reinsurer declined to take part in Tremor's auction because its underwriters were worried about revealing their pricing. One of our interviewees argued that automated placement would not be widely trusted. In other financial markets, traders have attempted to manipulate securities auctions.

**Impact on market size**

The development of automated reinsurance placing would have two

opposing influences on premium growth. Most obviously, at the market-level, it would depress growth by reducing acquisition costs, which can account for more than a fifth of premiums. Given the very early stage of automated placement's development, the extent to which it would lower acquisition costs is unclear. In addition, as per Tremor, brokers would still be required to run the placement process. On the other hand, local regulations notwithstanding, automated placement has the potential to drive growth for the brokers that adopt it by expanding their geographic coverage. The broking process could be carried out remotely, without the need for in-person meetings.

**Impact on market profitability**

Based on examples of automated distribution in other markets, the impact of automated reinsurance placement would vary depending on the time horizon. Initially, as the new platform develops, the savings from automation would need to be passed to reinsurers to incentivise participation. However, as more reinsurers and alternative capital providers join the platform in search of wider distribution and higher margins, competition would increase and the platform would gain power, leading to the bulk of savings being shared by platform and insurer.



### Impact on market dynamics

Automated placement would be positive for distribution platforms and insurers. Platforms would gain market power. Insurers would ultimately see rates fall, due to lower distribution costs and lower pricing if platforms increase competition among reinsurers and alternative capital providers. For reinsurers, the implication is more nuanced. Access to risk would widen, but competition for these risks would also increase. For alternative capital providers, automated placement would fit well with a model based on global access to risk, lean operations and a lower cost of capital than reinsurance balance sheets. This could threaten to disintermediate reinsurers if automated placement is used to split risk into small tranches and auction them to the most appropriate sources of capital (based on risk appetite and cost).





## 6. Rise of exchange-based secondary markets

Secondary markets in ILS (insurance-linked securities) are relatively undeveloped compared with those for mainstream securities. Increased trading of ILS could benefit reinsurers, investors and society by bringing added liquidity to insurance risk. To help achieve this, infrastructure providers are building electronic exchanges to facilitate faster and cheaper trading. However, these exchanges face a number of high barriers, such as slow and infrequent reporting on losses affecting securities and opaque processes for valuing them. Traders will overcome these barriers, allowing the reinsurers that fully exploit secondary markets to optimise their risk and capital more dynamically.

Trading of insurance risk on secondary markets is infrequent. In catastrophe bonds, the most traded instrument, trading volumes are generally low. The number of trades recorded by the US Financial Industry Regulatory Authority's tracker (TRACE) is typically below ten per day.<sup>26</sup> The second half of 2018 witnessed high trading volumes by historical standards. This was driven principally by the losses of 2017-18 feeding through to redemptions, trapped capital and the need to raise cash among ILS investors. Nonetheless, the value of catastrophe bond trades recorded by TRACE was only \$1 billion in H2 2018 out of \$40 billion outstanding at the end of 2018.<sup>27</sup> The illiquidity of catastrophe bonds is reflected in the wide spread between expected losses and coupons.<sup>28</sup>

Growth of secondary markets would be positive for reinsurers, investors and society. For insurers and reinsurers, increased trading of securities whose value is derived from exposure to specific

“You have to think that... [a] secondary market will emerge and people will trade these things as an asset in their own right. Investors will trade and underwriters will trade – Florida catastrophe risk will become an asset in liquid markets– and this will bring new types of investors into the market.”

### Alternative capital SME

risks offers a means to manage risk and capital more dynamically than with a reinsurance or retrocession programme alone. For investors in ILS, a broader and deeper secondary market would make their investments more liquid, reducing the risk of being forced to sell at a steep discount due to a lack of buyers. It would also broaden access to ILS. For society, therefore, more active secondary markets would bring a greater supply of capital to protect against natural catastrophes and other risks that are hard to insure on account of their potential severity.

Electronic exchanges will encourage more investors to trade ILS. In 2016 the market reportedly saw the first secondary trade of an ILS on an electronic exchange. Anecdotally, other exchanges are being built. These will drive up trading if they use automated systems to make it significantly easier, cheaper and faster to trade than with a broker-dealer, as intended.

Our interviewees suggested that this would be possible using existing technology, such as that underlying Tremor (see case study on page 34).

### Barriers to change

Growth of exchange-based secondary markets will be gradual. ILS are relatively complex and this deters non-specialist investors. Securities would need to be standardised and simplified to be embraced by a wider investor base. Parametric products, where claims are triggered by an event meeting pre-defined parameters, such as a level of rainfall, could help introduce standardised risk units and achieve this. A comparable process took place in equities. For instance, trading of the S&P 500 was boosted by the introduction of an index based on expected price fluctuations over a 30-day period, the VIX.

Information on losses can be slow to reach end-investors, infrequent and difficult to use. This makes the valuation of securities challenging, which is a major disincentive to trading. One of our interviewees recalled a conversation with a senior director of an ILS fund. He complained that sometimes it takes months for his fund to receive information on losses affecting collateralised reinsurance. In addition, initial loss estimates have insufficient detail to inform an updated view on performance and subsequent data is in a format that is hard to process.

“Valuation is one of the key issues that has held back the ILS market. It makes it hard to do anything dynamic or quick with an instrument when you have manual, actuarial valuation.”

#### Alternative capital SME

Our interviewees suggested that some incumbent reinsurers and brokers are unwilling or unable to adopt secondary market trading. Their business models and ways of working are focused on placing and retaining reinsurance risk in the traditional manner over a one-year cycle. In addition, trading on secondary markets would likely drive a further influx of alternative capital, which some traditional reinsurers are opposed to because it threatens to soften pricing in their markets.

#### Impact on market size

A liquid secondary market for ILS would have two opposing influences on reinsurance premiums. On the one hand, it would encourage more alternative capital to enter reinsurance and this would depress pricing in the lines most affected. On the other, a deeper pool of capital could translate into increased coverage for very large risks, potentially providing a private sector alternative to state-backed risk pools.

#### Impact on market profitability

For the market in aggregate, in the long term, the rise of secondary markets would suggest greater price transparency and liquidity and, therefore, lower margins. However, for reinsurers that use secondary markets to optimise their risk and capital more dynamically, margins would increase. Our interviewees argued that the uplift to profitability would be material, adding that, in principle, capital should be managed on more of an ongoing basis than it is today.

#### Impact on market dynamics

Markets in which insurance and reinsurance products tend to be more standardised, such as the Lloyd's subscription market, may have an advantage in adopting electronic exchanges. All other factors being equal, it would be easier for such markets to develop common risk units to trade than it would for markets where insurance products are more varied and bespoke.

The retrocession market would face a competing form of lower cost hedging. New types of investors would enter the market with a focus more on trading insurance risk rather than buying and holding it. Increased price transparency would be an advantage for those players with an edge in underwriting through skill, technology or a combination of both.

Chinese players have raced ahead in developing insurance as a platform. For instance, Ping An's OneConnect platform is one of the world's largest commercial

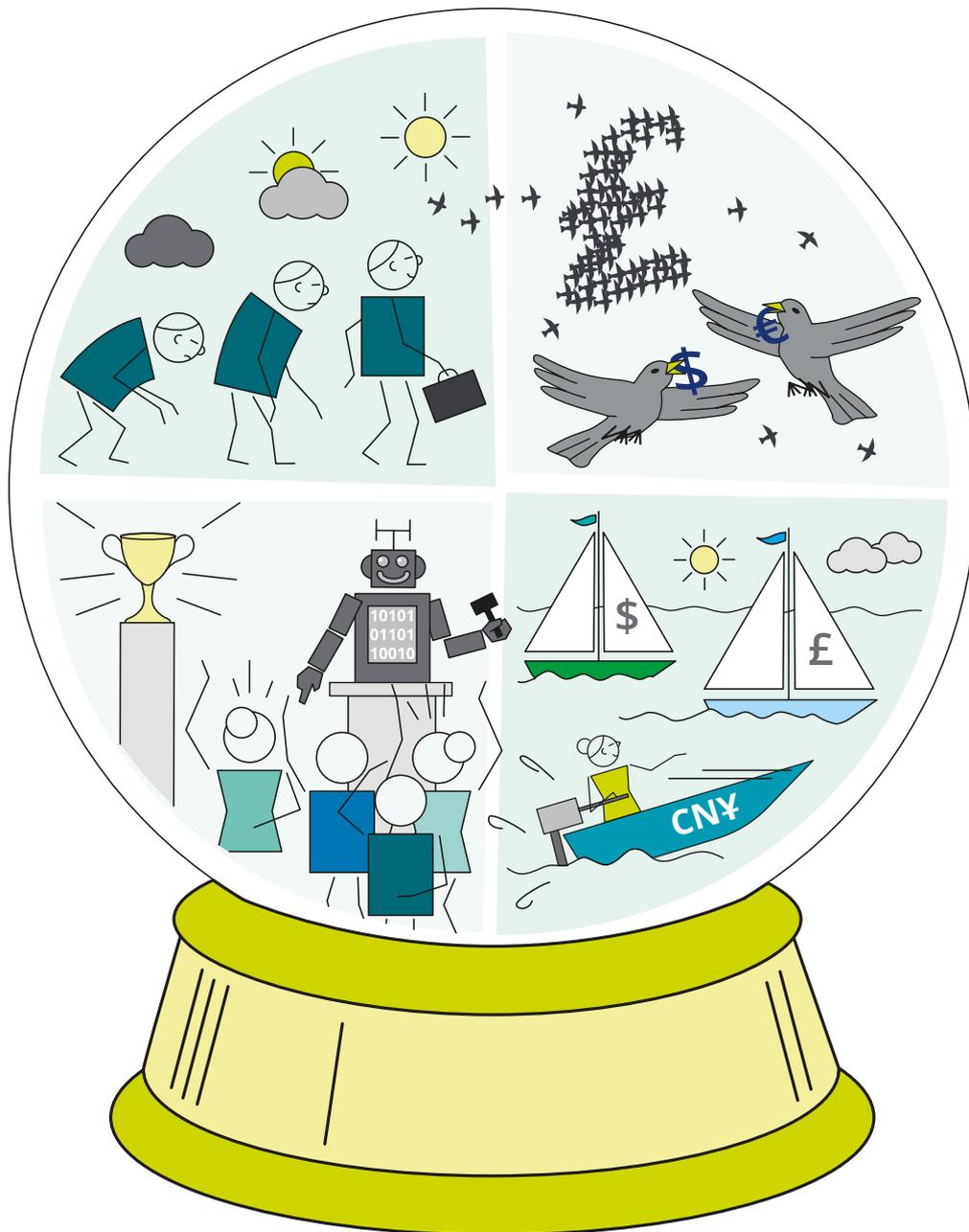


#### Case study: Secondary market reinsurance trading on an electronic exchange

In 2016, Tiger Risk, a catastrophe reinsurance broker and risk and capital management adviser, successfully transacted what is believed to be the first ever electronic secondary reinsurance trade. The trade used Xchanging's X-gRm, which is an online repository of risk information. It allows brokers to distribute risk information in a consistent format to reinsurers.

blockchain platforms. It has over 44,000 blockchain nodes providing services to more than 3,000 financial institutions.<sup>29</sup> In addition, the Chinese state is encouraging home-grown insurance and reinsurance champions via regulation and legislation. These factors combined suggest that China will see the most developed risk trading platforms emerge over the coming decade.

# Part two: Future scenarios



# Part two: Future scenarios

Over the next ten years the reinsurance industry will, in our view, experience the following trends:

1. Pivoting to a risk transfer-plus-service model
2. Hollowing out of the middle-market
3. Ongoing influx of alternative capital
4. Blurring of the value chain's boundaries
5. Rise of automated placement
6. Rise of exchange-based secondary markets.

Our analysis suggests that the greatest threat of disruption lies in the degree to which alternative capital will gain share from reinsurance balance sheet capital (3), and the degree to which technology will automate risk placement and drive trading on secondary markets (5 + 6).

Alternative capital is potentially disruptive because of its size, cost and increasing appetite for insurance risk. Its sources, for example pension funds, are many times larger than the reinsurance industry's total capital. It is less costly than reinsurance balance sheet capital (less than half the cost on an indicative basis). It has an increasing appetite for insurance risk because a growing number of institutional investors recognise the benefits of insurance risk as a diversifying asset.

The combination of automated risk placement and exchange-based trading of risk on secondary markets has far-reaching implications for reinsurers. Most obviously, automated placement could increase competition by dividing risk into small tranches and auctioning them to the most appropriate source of alternative or reinsurance balance sheet capital. Exchange trading of risk would allow reinsurers to adjust their positions more dynamically than with the current renewal cycle, potentially boosting returns. It would also increase the liquidity of risk by encouraging a more active secondary market for insurance-linked securities than we see today, which in turn would likely lower rates.

The scenario analysis below draws out some of the major opportunities and threats for reinsurers based on how change occurs in these two areas.

### Scenario one: Evolutionary change

In scenario one, the market experiences minimal change, and current trends develop slowly. Alternative capital remains at just under one-fifth of reinsurance capital. Placement is dominated by the traditional broking process and is not automated. Trading on secondary markets is not adopted. Electronic exchanges for risk trading are shunned.

In this scenario there are three main opportunities for reinsurers: create new markets, develop existing clients and lower costs.

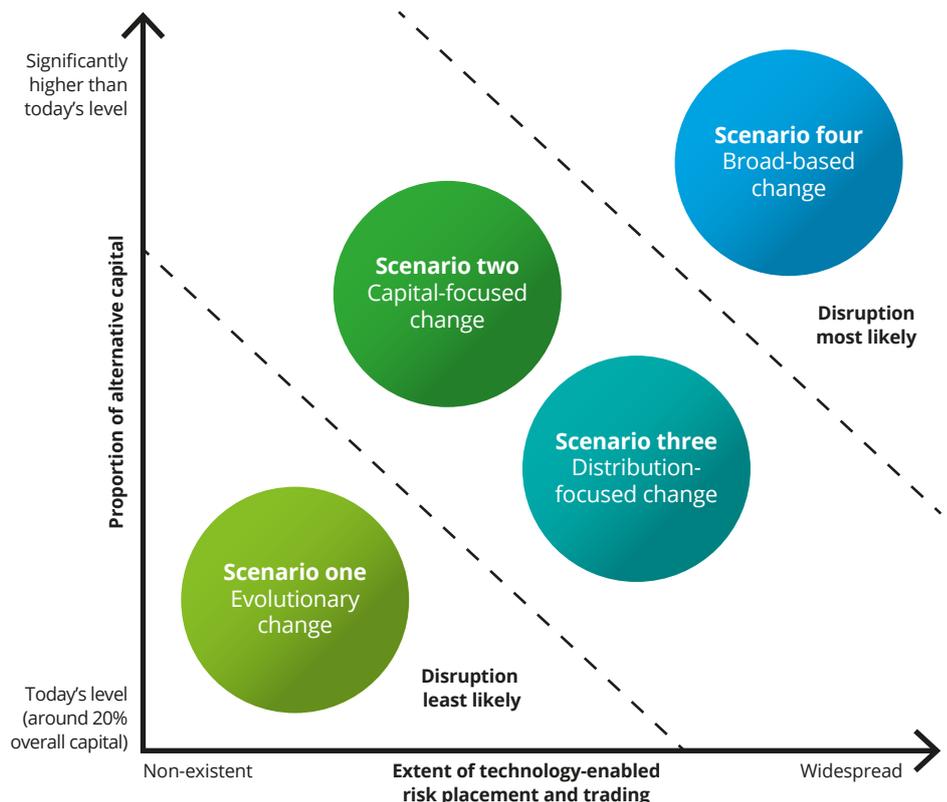
Creating new markets breaks down into two main areas: increasing the penetration

of insurance for emerging risk in developed markets, and increasing the penetration of insurance for traditional risk in developing economies. Our interviewees were most bullish on the former.

Reinsurers can assist primary insurers increase demand for insurance of emerging risks. Two ways to do this stand out. First, they can help primary insurers develop the data needed to underwrite new types of risk, exploiting a combination of internal and external data. One crucial source of external data to underwrite new risks is the Internet of Things or IoT.

Second, reinsurers can support primary companies' product innovation. Given the huge shift in the global economy from tangible assets to harder to insure intangible assets, the latter area is a priority. Innovative new applications of technology can lead the way.

Figure 12. Future reinsurance scenarios



For example, Lloyd's syndicate Beat 4242 has collaborated with an AI specialist, Previsio, to insure supply chain finance risk. The new product insures supply chain finance providers against the risk they pay an invoice that cannot be recovered (because a corporate declines it on legitimate grounds). AI underpins the product. It automates the manual process for checking invoices and predicts the likelihood of each being declined.<sup>30</sup>

To grow revenue among existing clients, reinsurers can pivot to providing a bundle of risk transfer and other (i.e. non-insurance) services. Some of our interviewees predict a bright future for this type of model, with reinsurers becoming predominantly service-based companies. Providing new technology-based services that save primary insurers the risk and cost of in-house technology development, and solve critical business issues, will be key to success.



**Case study: Using external data to underwrite new risk pools**

Legionella bacteria is found in man-made water systems. Human exposure to Legionella can be risky and lead to Legionnaire's disease. In the UK, building owners/operators are responsible for inspecting pipes for Legionella bacteria. This is typically carried out manually, which can be inaccurate and/or infrequent. For this reason Legionella risk is typically excluded from commercial property covers. Shepherd analytics, a UK-based InsurTech, allows carriers to cover Legionella risk using data from sensors that monitor water systems.

“The thing is, if you look at the US there’s tons of risk to go after (e.g. Internet of Things, driverless cars, cyber). You can’t ignore the mature markets and growth in the economy (such as we’re seeing in the US) will drive up growth in exposures.”

**Country CEO, global reinsurer**

To protect margins, reinsurers can find operational efficiencies and rationalise the value chain. Major opportunities include automating manual processes and using InsurTechs and other companies that are developing solutions for discrete activities within the reinsurance value chain.

In this evolutionary scenario, the principal threats for reinsurers lie in being undifferentiated and/or inefficient relative to peers. Primary insurers would gravitate even further towards strategic partnerships with the reinsurers best able to service the full range of their needs (encompassing both risk transfer and value-added services). One of our interviewees summarised this by saying that the market would see more strategic insurer-reinsurer alignments. In addition,

pricing would likely remain low due to abundant capital, depressing returns for those unwilling or unable to make the necessary adjustments to offset lower pricing with lower expense ratios. In the section on the value chain above, our analysis shows that over the period from 2013 to 2018, expense ratio increases eroded underwriting profitability to the same extent as loss ratio increases.

**Scenario two: Capital-focused change**

In a capital-focused change scenario, alternative capital grows steadily, expanding its share of overall capital, and spreading to new lines of business. This, in turn, leads to new reinsurer business models dedicated to issuing securities rather than retaining risk on the balance sheet. The cost of capital for the industry falls.

“We are really focused on how to help clients grow their business. Typically services and solutions include things like telematics, product design and data analytics to support steering of the portfolio, identifying segments that are, and are not, so good.”

**Head of Casualty Underwriting, global reinsurer**

However, these shifts take place without any material increase in technology-enabled risk trading or placement. The traditional broking process dominates placement and trading of ILS is via broker-dealers, not on electronic exchanges.

“The future will see big players leveraging lots of smaller specialised players as suppliers.”

#### Country CEO, global reinsurer

For reinsurers, the rise of alternative capital in this scenario would represent an opportunity for hedging with lower costs and a greater supply of capital than with using a retrocession programme alone (i.e. purchasing reinsurance for reinsurance). One of our interviewees claimed that, in future, the retrocession market will be viewed as different levels of hedging, incorporating both reinsurance balance sheet capital and alternative capital to a greater extent than today.

“Reinsurance retrocession terminology may disappear and we’ll instead have different levels of hedging.”

#### Alternative capital SME

Additionally, reinsurers could develop hybrid earnings models, combining underwriting returns (from retaining risk) with fees for sharing risk with alternative capital sources. This model could be taken a step further by structuring and issuing 100 per cent of risk as securities. Due to the lack of risk retention on the balance sheet, this would be more akin to asset management than reinsurance, potentially offering the traditionally high returns witnessed by the former.

To accelerate this model, reinsurers could build a system to deliver a real-time flow of data relevant to the securities’ future performance (e.g. daily updates on premiums, exposures and losses attaching to the underlying insurance risks) to investors. This would help to address the lack of timely and detailed data on the losses underlying alternative capital investments’ performance, which is commonly cited as a disincentive for investing in them.

The major threat for traditional reinsurers would be in failing to adapt to the new landscape. Reinsurers competing with lower-cost alternative capital without differentiating in other areas, such as a service offering, exploiting it for hedging or generating fee income from issuing securities, would face an uncertain long-term future.

#### Scenario three: Distribution-focused change

In scenario three, risk placement is increasingly automated and takes place on digital platforms (as per the Tremor case study, see page 34). This process leads to the disaggregation of risk into tranches that are more granular and varied than the layers of a traditional reinsurance programme. Incumbents develop this system in a way that prevents the further entry of alternative capital by, for example, trading reinsurance contracts (not securities) and by building private risk exchanges.

The opportunity for reinsurers in scenario three is to engage in more frequent trading of risk. This could promote efficiency in pricing, and a better alignment between risk and the optimal source of capital to bear it. In primary insurance the market has seen comparable developments. For example, distribution platforms have used social media and online search data to identify and assemble pools of specialist risk that are diversifying for insurers’ capital. These pools would be too expensive to identify, market to and underwrite in-house.

“Reinsurers should be adding stuff into the portfolio all the time. To do that, you need rich metrics that enable you to optimise – looking at changes in the risk profile to help you understand if you need other types of capital to help you support that.”

#### Alternative capital SME

However, to exploit risk exchanges, reinsurers would likely need to gain deeper insight into their enterprise-wide risk and develop externally facing systems. At a high level, this would

involve improving data reliability and timeliness (e.g. via automation of manual data quality checking), development of internal analytics for the assessment of enterprise-wide risk (potentially akin to the development of Value at Risk measures in banking) and investment in systems capable of trading risk quickly and securely (e.g. application programming interfaces).

The principal risks would lie in investing in technology that rapidly becomes obsolete or, in contrast, moving too slowly. Financial markets have witnessed false dawns in electronic risk trading with significant investments ultimately written off. On the other hand, with trading going mainstream, a greater threat would be moving too slowly and being at a competitive disadvantage to more dynamic players.

#### **Scenario four: Broad-based change**

In a broad-based change scenario, the market experiences profound shifts in the sources of its capital and means of distribution simultaneously. Alternative capital increases its share steadily. Risk placement moves to automated platforms and risk trading moves to exchanges with standardised units of risk, leading to deep secondary markets.

The main opportunity would be to exploit both trends and to provide a platform from risk to alternative capital. Risk trading could be used to adjust risk and capital dynamically. However, more fundamentally, underwriters could form the most crucial, middle, part of the value chain, where the selection and pricing of risk takes place. In this case, technology such as analytics to support underwriting would become even more important. The role of brokers would be less certain.

The key threat would be disintermediation. Platforms operated by industry outsiders could disintermediate reinsurers by providing a more direct route from insurers and their risk pools to alternative, lower-cost capital from huge institutional investors.

# Conclusion

The future of the global non-life reinsurance industry has never been more in doubt. For the first time, reinsurers are faced with an urgent need to reverse declining profitability and the convergence of multiple powerful forces capable of driving change. In this report, we have identified and dissected six trends that will determine the industry's future. Yet, at the same time, the reinsurance industry will likely remain a difficult one to disrupt. The future of global non-life reinsurance is therefore not about disruption, nor is it about evolution: it is about adapting faster.

## Looking ahead – questions for discussion

- Many brokers and reinsurers will have to reform their business models to thrive
- Alternative capital will reach more than a quarter of the market in less than ten years
- Technological change will disrupt the reinsurance value chain, especially in claims handling and risk modelling
- Proportional reinsurance will be replaced by relatively low-cost pools of capital from institutional investors and bundled risk-transfer plus service offerings from reinsurers
- In ten years the biggest reinsurer and risk trading platform in the world will be Chinese
- Will reinsurance be replaced by insurance or even 'risk transfer' over the next ten years?

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