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GUIDE TO BUTTONS

go to table of contents

search this PDF

go to previous page

go to next page

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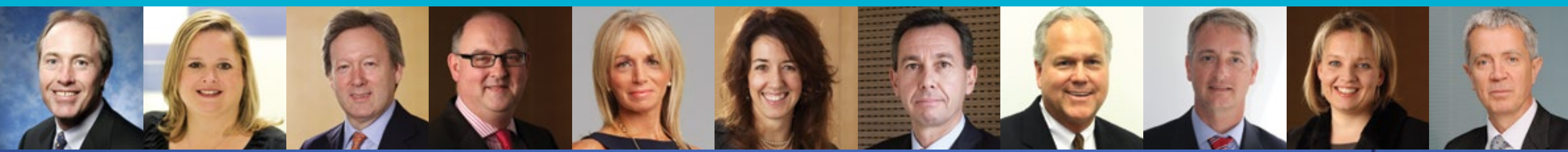
SEPTEMBER 2016

GC@MC Commentary



MARSH & McLENNAN COMPANIES

Capitalize on Complexity

Insurers are challenged by regulatory and rating agency changes that significantly alter capital requirements. Many of these developments go beyond regulation, necessitating greater risk-informed management for businesses. Our strategic advisory teams help clients manage these demands and grow their business, profitably.

Strategic Advisory

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GUY CARPENTER

Leading the Way Forward

GC@MC
Commentary

Welcome to GC@MC, our round-up of key issues facing the (re)insurance market which have dominated the discussions at this year's Rendez-Vous de Septembre in Monte Carlo.

The complexity of dynamics impacting our industry is greater than at any time in its history. Our environment is fundamentally changing and it creates an opportunity for us to re-evaluate core foundations upon which our industry was built.

Moments of significant disruption and change also create opportunities for innovation and growth. At Guy Carpenter, we recognize that our clients rely on us to provide informed and timely insights to help them make critical decisions.

We hope that you find the commentary in this issue informative and actionable. We look forward to working closely with you as we seek to seize the opportunities that this new environment affords.

CONTENTS

David Priebe, *Vice Chairman*
Cory Anger, *Global Head of ILS Origination and Structuring at GC Securities*

EXPANDING RANGE OF CAPITAL SOURCES OFFERS BENEFITS

Industry must adapt to emerging segmentation phase

Pricing declines continued in the insurance-linked securities (ILS) segment of alternative capital. In turn, this has prompted questions about the sustainability of lower pricing and capacity post-catastrophe event, suggesting that traditional reinsurers' models and the traditional reinsurance and alternative capital mix of capital sources still need to evolve. Maintaining premium rate adequacy and stable capacity requires better access to the expanding sources of capital and awareness of the benefits of better risk syndication and segmentation, according to David Priebe, Vice Chairman at Guy Carpenter (*pictured above left*) and Cory Anger, Global Head of ILS Origination and Structuring at GC Securities* (*above right*).

This year the ILS segment of alternative capital pricing continues to decline as excess risk capital is available and the demand for risk transfer limits remains flat to slightly down. "A deeper understanding of the supply/demand relationship for risk transfer limits requires a thorough analysis of the particular market taker's cost of capital and premium rate level adequacy and cedents' efforts to fully access and utilize the capital most efficiently," says Mr. Priebe.

"GC Securities' review of target returns of superannuation funds[1] reveals that the largest and most stable portion of alternative capital – pension funds, sovereign wealth funds and endowments – is still priced adequately despite significant premium rate reductions since 2012," says Ms. Anger. "Pricing is likely to remain adequate even with projected rate declines (subject to industry loss activity) for the remainder of 2016 and into 2017."

"Traditional reinsurers are able to lower their cost of capital through their own use of alternative capital as they replace equity capital with collateralized retrocession,[2] sidecars, collateralized quota share reinsurance and repositioning of books of business through strategic underwriting practices," asserts Mr. Priebe. "Despite the companies' use of alternative capital, however, traditional reinsurer equityholders' returns have not improved."

According to a GC Securities analysis at mid-August 2016, Bermuda reinsurers' 2016 average return on equity is estimated at approximately 7.6 percent, down from 10 percent in 2015. "Alternative capital sources can accommodate further premium rate reductions and still maintain price adequacy," says Ms. Anger, "but traditional reinsurers may not be able to withstand rate declines with their already subpar equity returns."

"Historically, traditional reinsurers increase their premium rates after industry catastrophe events in order to replenish capital and attract new capital, with the goal of reaching overall premium rate adequacy and restoring returns on equity to levels more consistent with what is expected of equity capital," Mr. Priebe explains. "However, GC Securities has found that significant pricing increases will be difficult to sustain for short periods because of the inflow of new capital that typically follows catastrophe events. Alternative capital is already making contingency plans with funds created so that they can inflow new capital rapidly post-event. The difficulty in sustaining price increases means that premium rate adequacy is even more critical in soft markets when capital is abundant. (Re) insurers need to evolve by reassessing business models for more efficient allocation of risk to capital sources."

"GC Securities envisions an environment in the future where segmenting sources of capital to different risk profiles of a risk transfer program may improve efficiency for cedents and capital providers," Ms. Anger states. "It might be most efficient for traditional reinsurers to focus on working reinsurance layers where claims departments can be leveraged for loss frequency layers and alternative capital to focus on non-working severity layers where they are best able to absorb low frequency, severity losses at the lowest cost of capital."

Cedents' willingness to open the accessibility of their entire risk transfer program to all capital sources is also a key factor in determining pricing efficiency and minimum premium rate levels. "Many cedents would like to see minimum premium rate barriers lowered," says Ms. Anger, "but another way of achieving pricing efficiency is to open reinsurance programs to all sources of capacity instead of limiting 'all sources access' to only select risk transfer layers. Open access to all (re)insurance and retrocession program layers is critical for avoiding the situation where less competitively placed reinsurance layers subsidize the premium rates on 'all sources eligible' competitive risk transfer layers."

Ms. Anger further states that the ability to lower minimum premium rates for remote high severity loss layers is affected by the continuum pricing level to risk level relationship across the entire risk transfer program in addition to the specific layer's pricing to risk level ratio. If the competition among risk transfer capacity sources results in all layers pricing lower, then alternative capital may be able to justify lower minimum premium rate pricing from prior levels.

Mr. Priebe concludes: "The unique collaboration of Guy Carpenter brokers and GC Securities professionals provides clients with agnostic advice regarding risk transfer sources. Guy Carpenter places and accesses risk with all types of capital sources as we advise clients through this emerging segmentation phase that we expect will benefit cedents and capital sources."

1 Based on review of superannuation funds' annual reports. For example, the New Zealand Superannuation Fund has a minimum return hurdle of Treasury Bill return plus 2.7 percent over any 20-year moving average period; Australia's Future Fund seeks to achieve an annual return of at least Consumer Price Index plus 4.5 percent to 5.5 percent; and U.S. pension funds targets as disclosed in their annual reports.

2 Two thirds of the industry's overall retrocession limits are sourced from alternative capital, according to Guy Carpenter.

Nick Frankland, *CEO, EMEA Operations*
Chris Klein, *Head of EMEA Strategy Management*

REINSURERS STANDING FIRM AS INSURERS LOOK TO CONSOLIDATE

Recent renewals show evidence of changing state of reinsurance market

As large-scale multi-line insurers enter a period of consolidation following the significant drive to rationalize long-term strategic reinsurance purchasing, recent renewal activity suggests reinsurers are now increasingly resisting shorter-term aggressive buying strategies, according to Nick Frankland, CEO of EMEA Operations (*pictured above left*) and Chris Klein, Head of EMEA Strategy Management at Guy Carpenter (*above right*).

"In January 2015 we saw the first major wave of centralized reinsurance purchasing," says Mr. Frankland. "The buying decision has now been elevated to the executive level, with reinsurance viewed as part of longer-term, strategic decision making. Large-scale insurers are now consolidating their positions, operating much leaner reinsurance panels geared towards improving counterparty credit risk and developing more expansive trading partnerships with key reinsurers."

This rationalization has in part led to a continuing reduction in reinsurance buying, despite the current low rate levels. "Given where rates currently are, you would expect insurers to take full advantage," Mr. Frankland explains. "However, we are dealing with conflicting forces and while pricing is highly attractive at present, insurers are facing difficult market conditions and chronically weak investment returns, putting immense pressure on earnings."

An example of this was seen during the recent Asia Pacific renewals, Mr. Klein added. "On property cat, clients responded to the ongoing challenging direct market by continuing to focus on reducing overall reinsurance spend, with a trend towards further treaty consolidation and deductible increases for programs with significant exposure growth or losses."

From a buying perspective, while recent years have been characterized by double-digit rate reductions and continual pressure on terms and conditions, there are now clear signs that reinsurers are more willing to stand firm in the face of aggressive buying tactics.

"The mid-year U.S. renewals," Mr. Klein states, "experienced a notable moderation in property price decreases, with falls in risk-adjusted rates in the mid- to low-single digit range, as well as a reduction in capacity authorization. Reinsurers, particularly on the catastrophe side, were more willing to reduce or even decline participation where they deemed buyer demands too great."

"Reinsurers, particularly on the catastrophe side, were more willing to reduce or even decline participation where they deemed buyer demands too great"

"This very much places the onus on the reinsurer to ensure that it is offering the most effective form of capital at the lowest possible cost"

Surplus capacity was also on the decline. According to Mr. Klein: "In 2014, at the July 1 U.S. property reinsurance renewals, authorized capacity was 26 percent more than the capacity which was eventually signed. In 2015, this fell to 17 percent and down to 16 percent in 2016. This again reflects a willingness on the part of reinsurers to resist buyer pressure."

Multi-year policies were subject to an even firmer stance. "There was a decline in the amount of multi-year coverage reinsurers were willing to provide," Mr. Klein adds, "particularly for new offerings, as perceptions increase that the market is nearing the bottom and prices will stabilize in the near future. There simply isn't a willingness to lock in current rates for a number of years."

Another factor influencing buying dynamics is the range of potential capital sources now available. "The capital landscape is ever-changing," Mr. Frankland explains, "with new forms and sources of capital rapidly expanding the range of options available to the buyer. This very much places the onus on the reinsurer to ensure that it is offering the most effective form of capital at the lowest possible cost."

"Such capital diversity also elevates the position of the broker," Mr. Frankland asserts. "At Guy Carpenter, we fully recognize that our role is central to matching buyers and sellers through the most efficient channel possible. We are in the strongest position to provide access to all forms of capital and so secure the more beneficial rates and terms and conditions."

Victoria Carter
Vice Chairman, International Operations

DISRUPTIVE FORCES REDEFINING THE ROLE OF INSURANCE

Industry must adapt and innovate to fully grasp opportunities

A series of fundamental disruptive forces are driving monumental changes in the global economy at an unprecedented rate. These forces compel the (re)insurance industry to adjust to the new reality and capitalize on the opportunities created, according to Victoria Carter, Vice Chairman of International Operations at Guy Carpenter.

"Four major disruptive trends – expanding urbanization; technological advances; ageing population; and increasing connectivity are profoundly altering the foundations of the global economy at a rate light years faster than the rate during the industrial revolution," says Ms. Carter.

"Rapid urbanization is occurring in emerging markets, tilting the global economy on its axis toward territories in the East and South experiencing economic ascendancy," Ms. Carter continues. "By 2025, almost half of the companies with revenues in excess of USD 1 billion will be headquartered in markets such as Mumbai and Shanghai along with rapidly expanding hubs such as Hsinchu in Northern Taiwan and Santa Catarina State in Brazil."

> "We must innovate, change and adapt, as well as seek opportunities to work in tandem with leaders in other markets"

"We now work and live in a hyper-connected world, from trade and capital, to the movement of people and transfer of data," Ms. Carter says. "The surge in technology-driven connectivity in particular is spawning a new phase of globalization full of opportunity, but equally exposed to rampant volatility."

These waves of change are growing exponentially and impacting all sectors of society, including sweeping away many of the assumptions, accepted truths and standard practices that have held firm for decades. "The (re)insurance industry, faced with a world that is being radically altered," Ms. Carter asserts, "must re-evaluate its role and recognize that the traditional business model is not designed to meet the demands of this new environment, even though it may continue to generate revenue."

The (re)insurance sector must also recognize the potential threats this creates to its fundamental role. "The primary insurance product is becoming increasingly commoditized, while digital firms and service providers are beginning to supplant the role of the (re)insurer," Ms. Carter warns. "New technologies are reducing the need for certain forms of cover and in some cases making them potentially obsolete. All of these factors are combining to diminish the role of the insurer."

To maintain its leadership the industry must acknowledge that fundamental change is required and actively seek out the opportunities these forces create in their wake. "The industry can no longer rely on extrapolating past experience into the near future to define what it delivers now – the pace of change is simply too fast and the level of disruption too great," Ms. Carter states. "We must innovate, change and adapt, as well as seek opportunities to work in tandem with leaders in other markets, such as "fintech" companies. (Re)insurers need to embrace this period of transformation, boost the potential it creates and redefine their future role and relationships with clients."

(Re)insurers have to move beyond standard insurance parameters into new growth areas both in personal and commercial lines. "We have already witnessed the potential created by cyber," Ms. Carter highlights, "and that will grow exponentially as the world becomes increasingly dependent on e-commerce and cloud computing. We must seek out opportunities to help reduce the unsustainable public sector debt levels generated by an ageing population, seeking to expand involvement in long-term care. We must look to support (re)insurers by providing the secure platform that serves as a springboard for innovation."

"For every industry transformed by disruptive forces, the net result has been growth," Ms. Carter concludes. "It is up to the (re)insurance sector to grasp the myriad opportunities this environment creates and drive the industry transformation that needs to take place."

> "It is up to the (re)insurance sector to grasp the myriad opportunities this environment creates and drive the industry transformation that needs to take place"

Dr. Beverley Adams
Head of Catastrophe Planning & Response

"VISUAL INTELLIGENCE" CRITICAL TO ADVANCING RESPONSE CAPABILITIES GLOBALLY

Industry must more effectively harness potential of satellite, drone and aerial technologies

Advances in the development of "visual intelligence" based on multiple data sources including satellite imagery and drone footage have the potential to significantly enhance claims and CAT response processes and underwriting decision making when companies harness that potential effectively, according to Dr. Beverley Adams, Head of CPR (Catastrophe Planning & Response) at Guy Carpenter.

"The recent wildfires in Fort McMurray, Canada, are a prime example of how visual intelligence plays a central part in enhancing response capabilities," Dr. Adams says. "By combining satellite data, images from fixed-wing aircraft and video feeds from drones, insurers were able to establish initial loss estimates and make claims payments weeks before direct access to the affected areas was possible."

> "In the case of Tianjin, China, the level of aggregation risk within the port caught the (re)insurance industry by surprise"

The August 2016 earthquake in Central Italy was a small insurance event. Nonetheless, firefighters extensively used thermal drone imagery to locate victims, demonstrating the growing importance of this technology as an integral part of disaster response operations. "The drone deployment provided a vital opportunity for Guy Carpenter to stress-test visual intelligence mission plans to enhance readiness for a major catastrophe event, such as a Los Angeles earthquake," Dr. Adams asserts.

The value of visual intelligence extends to providing critical data to support underwriting decision making. "In the case of Tianjin, China, the level of aggregation risk within the port caught the (re)insurance industry by surprise," Dr. Adams states. "However, by deploying satellites and drones over major ports it is possible to accurately track the movement of stock and then quickly ascertain the potential for any major accumulation exposures."

The insurance potential of satellite imagery has been significantly enhanced by the sharp rise in the number of satellites deployed coupled with increased data access. "Users of the data, however," says Dr. Adams, "find the data access process to be time consuming and costly, and also encounter difficulties in accessing specific data at specific moments when they request it. Guy Carpenter has addressed this problem by setting up its Satellite Superstore facility in association with Geospatial Insight, a specialist providing direct and speedy access to information from some 130 satellites."

The U.S. Federal Aviation Administration's implementation of the Part 107 Rule was another significant development. "Drone operators are now able to apply for a license to conduct commercial activities," she says. "The new ruling effectively puts operational guidelines in place for the commercial use of small unmanned aircraft and eliminates the extreme difficulty the operators faced in gaining approval to fly drones for commercial purposes. This is a major advance in unlocking the potential that these drones provide. Guy Carpenter is working in association with LIFT Technologies, operators of the largest U.S. network of certified pilots."

While potential is huge, there are also a number of limiting factors. "There are limitations on the extent to which the process can be automated," she explains. "While a loss adjuster can quickly ascertain whether damage to a building is significant, partial or a complete loss, we have not yet developed the machine learning algorithms necessary to enable drones to make similar assessments – it still requires an operator to make the call."

"Instantaneous data access is also a long way off," Dr. Adams continues. "While we are seeing a big increase in the amount of downloadable information available from a growing number of orbiting satellites, it still takes time to transmit to ground-receiving stations and to process the data. Moving forward, timely availability of consistently high-quality imagery will increase as additional satellite constellations launch with associated infrastructure."

A number of developments need to take place for the industry to fully harness the benefits of visual intelligence. "We have to look at how we can integrate this data into existing workflow systems," Dr. Adams explains. "Loss adjusters are already embedding ground-based video images into claims reports as web-links, and we need to establish similar capabilities for visual intelligence so that it becomes an integral part of the workflow."

"Companies also need to define a role for the visual intelligence professionals within organisations," Dr. Adams concludes. "Companies must effectively manage widespread access to multiple data streams if they are to be converted into consumable intelligence to support the underwriting and claims functions – this requires internal expertise."

Eric Paire
Head of Global Partners & Strategic Advisory, EMEA

MANAGING VOLATILITY KEY TO SOLVENCY II TRANSITION

Movement within capital ratios leading to uncertainty amongst mid-size companies

The impact of the Solvency II capital ratio on composite life and property/casualty balance sheets is proving more substantial than some companies initially expected, according to Eric Paire, Head of Global Partners & Strategic Advisory, EMEA at Guy Carpenter. This development is due to the double impact of market volatility and volatility within the solvency ratio itself.

According to Mr. Paire: "As companies shift from the preparation phase of their Solvency II strategy which focused on implementing the necessary processes and systems to the data crunching phase, they are gaining a much clearer picture of the potential capital charges – and in some cases, the results have been unexpected."

"The life side of the balance sheet brings a very significant amount of market risk and in addition to the Solvency II capital pressures, there is also increasing capital solvency ratio instability. As a result, there are major fluctuations that many did not foresee on the solvency ratio linked to the asset side, as well as the impact of interest rate movements."

Mr. Paire continues: "We are transitioning from a Solvency I era where the capital ratio was relatively stable subject to the ability to manage volatility within a P&L; to a Solvency II era which requires management of P&L volatility as well as solvency ratio volatility."

The knock-on effect is increased uncertainty regarding the optimal capital level, according to Mr. Paire. Whilst a number of large-scale market players are targeting capital levels of 200 percent or above, for the mid-sized practitioners setting the solvency marker is a much greater challenge.

"To remain competitive, smaller companies simply cannot afford to operate at 200 percent. This volatility on multiple fronts means that establishing the solvency level that will provide a sufficiently robust capital buffer to withstand these fluctuations is extremely difficult. Is it 130 percent, 150 percent, 170 percent or higher?"

> "Whilst a number of large-scale market players are targeting capital levels of 200 percent or above, for the mid-sized practitioners setting the solvency marker is a much greater challenge"

Mr. Paire believes that reducing this uncertainty requires companies to adopt a much more systematic risk management strategy which combines both the asset and underwriting side of the operation and the life and non-life activities. "However, this more holistic approach will not be straightforward, as for many, these activities are conducted very much on a standalone basis."

> "Reducing this uncertainty requires companies to adopt a much more systematic risk management strategy which combines both the asset and underwriting side of the operation and the life and non-life activities"

As a result, a greater onus rests on the broker to bring together these critical components. "We must be in a position to facilitate a much broader dialogue that covers all of the elements of the Solvency II equation," Mr. Paire explains. "For Guy Carpenter, this entails bringing our life and non-life specialists to the table as well as working closely with our colleagues at Mercer to ensure that discussions cover underwriting and asset management."

Managing the solvency ratio with the minimal amount of capital also requires companies to take full advantage of multiple tools, with reinsurance being one of the most effective mechanisms available. Mr. Paire asserts that "reinsurance is a much more attractive option than equity in the current market. Not only are rates low at present, but reinsurance also offers a significant degree of flexibility which is critical given the high level of short-term volatility we expect to see as companies get to grips with their solvency requirements. Reinsurance is a dynamic solution, one that can be recalibrated quickly to match changing capital needs."

He concludes: "If we were entering the Solvency II regime at a time of high interest rates and stable capital markets, the transition would be much more seamless; but we are not. We are facing turbulent conditions and companies must chart their solvency course carefully if they are to navigate them successfully."

Eric Simpson, *Managing Director*
Mark Murray, *Senior Vice President*

(RE)INSURERS MODIFYING THEIR BEHAVIOR AHEAD OF A.M. BEST'S NEW RATINGS AND BCAR CRITERIA

Industry accelerates risk profile analytics and development of their own risk tolerances and stochastic capital modeling

The launch of A.M. Best's (Best) new ratings and Stochastic-based Best's Capital Adequacy Ratio (BCAR) draft criteria became an inflection point for (re)insurers worldwide. The 2016 changes represent Best's first major overhaul in over 20 years and are leading to a growing number of changes in market behaviors across the company size spectrum. (Re)insurers are assessing their risk and capital management positions in anticipation of the impacts of Best's new requirements even though the changes will not result in massive differences in its published ratings nor likely become effective until later in 2017, according to Eric Simpson, Managing Director (*pictured above left*) and Mark Murray, Senior Vice President of Guy Carpenter (*above right*).

"Guy Carpenter is observing companies actively analyzing their risk profiles, risk tolerance statements and capital adequacy metrics at higher confidence levels," said Mr. Simpson. "This goes beyond the traditional 1:100 threshold that was a cornerstone of Best's BCAR model over the past two decades, in response to Stochastic-based BCAR's multiple confidence intervals."

"Additionally, small/mid-sized insurers are increasingly planning to develop stochastic capital modeling capabilities to stochastically measure and manage their 'own' risks, and position themselves for more transparent discussions and comparisons of model results with Best in future rating reviews."

"Guy Carpenter expects the 1:250-year return time to become the upper threshold used for setting required capital levels, better aligning with prevailing global regulatory and rating agency capital standards as Best reconsiders its final array of confidence levels," asserts Mr. Murray. "The 1:250-year is down significantly from the 1:1000-year upper level in Best's initial draft released in March 2016 – Best's response to concerns related to the reasonability of any model results at the extreme tail for both U.S. and international (re)insurers."

"Under its new criteria, Best will cap BCAR's upside contribution to a company's overall rating," Mr. Simpson explains. "In the future, insurers will only be able to qualify for a maximum Issuer Credit Rating (ICR) of "a+" within Best's balance sheet strength (BSS) assessment based on a favorable result at the 250-year level. Because the maximum ICR rating of "a+" equates to a Financial Strength Rating of "A," companies will need to outperform their peers in the three remaining evaluation areas – Operating Performance, Business Profile and Enterprise Risk Management (ERM) – in order to achieve higher Financial Strength Ratings of A+ or A++."

> "The cost of rating agency capital has effectively increased for all "Secure" rated companies (>B++) — particularly those with elevated property catastrophe exposures, common stockholdings and/or long-tailed underwriting risks"

The cost of rating agency capital has effectively increased for all "Secure" rated companies (>B++) – particularly those with elevated property catastrophe exposures, common stockholdings and/or long-tailed underwriting risks. Mr. Simpson asserts that "companies are considering the potential implications when measuring and managing their capital and risk positions this fall in advance of their annual planning and 2017 reinsurance renewals:

- Guy Carpenter is assisting many property/casualty (P&C) stock insurers to project and interpret their capital positions for annual capital budgeting purposes using both Best's U.S. P&C and Universal BCAR models;
- Catastrophe-exposed insurers are using Guy Carpenter's Model Suitability Analysis (MSA)® to determine an objective 'management view' of their probable maximum losses up to the 500- year return time. The MSA analysis combined with Guy Carpenter's BCAR and ratings impact analysis provides important context and guidance for insurers to determine appropriate catastrophe limit protection; and
- Companies with larger equity portfolios have begun to confirm their tolerances and risk characteristics against the backdrop of Best's incrementally much higher industry-weighted capital charges."

"Looking ahead," Mr. Murray states, "Best will make more explicit and transparent notching adjustments in their evaluation of a company's Operating Performance, Business Profile and ERM. It is clear that companies with sustained under-performance, greater earnings variability, risk concentrations and lagging development on adequate risk tolerance statements and capital modelling continue to be most at risk for downward rating pressure, although the final standards and key metrics remain uncertain."

Mr. Simpson concludes: "Guy Carpenter assists clients with the changes borne from these new Best criteria. We recognize the potential timing implications in developing a practical, cohesive and comprehensive plan to ensure a smooth transition to the new BCAR and rating criteria methodology. With each rated company impacted differently, it is critical to understand and prepare for these implications regardless of where the organization stands on the rating scale or the influences on the rating."

Emma Karhan
Managing Director

INDUSTRY MUST EXPAND TERRORISM-RELATED COVER

Recent shift in terrorist focus to economic upheaval requires expanded business interruption cover

In the wake of recent terror-related attacks, the insurance industry must expand its role of supporting the financial resilience of economies. This includes further clarifying the industry's position alongside government-sponsored terrorism pools, according to Emma Karhan, Managing Director, Guy Carpenter.

"The recent actions of Daesh mark a shift in the focus of terror-related attacks," asserts Ms. Karhan, "with a focus on causing significant economic loss and long-term disruption in addition to the loss of life, instilling widespread fear and driving community division. The attacks in Brussels targeted major infrastructure components, while the Paris attacks struck at key aspects of Western culture such as restaurants, bars and music venues, each causing major financial disruption."

> "The potentially extensive business interruption repercussions from these attacks are not being adequately covered by the market currently and this needs to be addressed"

This shift in tactics to focus on causing increased economic damage requires the insurance industry to reassess its position. "The industry needs to look beyond what it currently deems the insured loss component of a terror-related attack and consider the wider reaching and longer-term financial fall-out," says Ms. Karhan. "The potentially extensive business interruption repercussions from these attacks are not being adequately covered by the market currently and this needs to be addressed."

Highlighting a study on the economic impact of the Paris attacks of November 13, 2015 by the Centre for Risk Studies at the University of Cambridge, Ms. Karhan says: "The report estimated the potential financial loss to the country's GDP by the end of 2015 at USD 9.5 billion, with the figure rising to USD 12.7 billion two years post event due to the domino impact on additional sectors of the economy. The aftermath of these events can be particularly challenging for smaller companies and sole-traders. The terrorist attacks of September 11, 2001 in the United States left thousands of small- and medium-sized enterprises fighting for their economic survival. This is where the insurance industry needs to assume a more prominent role – providing immediate financial support to those businesses facing disruption and imminent closure."

> "We have been working to develop models specifically designed to assess the damage radius and impact field and to also generate reasonable target scenarios that reflect the potential impact of an event"

However, expanding such coverage requires a more granular level of insight into the direct and indirect impacts of terrorist attacks. "Whilst we can never fully understand the behavioral factors underpinning terror attacks," Ms. Karhan believes, "we can look to more accurately calculate the financial impact through a better understanding of the physical damage caused and the subsequent business interruption and liability losses. At Guy Carpenter, we have been working to develop models specifically designed to assess the damage radius and impact field and also to generate reasonable target scenarios that reflect the potential impact of an event, for example, the size of a bomb/device and particularly the accessibility of the target."

As the (re)insurance industry better defines its capability to provide expanded coverages, this will help establish a clearer division of responsibility between industry and government in mitigating the financial losses post event. "The role of the (re)insurance industry is designed to help mitigate economic disruption post loss, whether that be at the individual business or sector level," states Ms. Karhan. "Where the government-backed terror pool structures come to the fore is by providing significant financial defences to withstand the large-scale, shock events with the potential to destabilize economies. By clarifying and more closely aligning the complementary roles of government and the (re)insurance industry, our contribution to societal resilience will be greatly enhanced through a more unified response to the threat of terrorism."

Matthew Eagle
Head of International Analytics

GUY CARPENTER SEES MARKET SHIFT TOWARDS CORE MODEL STRATEGY

Industry moves away from multi-model approach given current market conditions

Insurers and reinsurers are increasingly adopting a core model strategy based around a detailed assessment of its capabilities, instead of the multi-model or blended approach as investment in modeling capabilities comes under pressure, says Matthew Eagle, Head of GC Analytics® – International at Guy Carpenter.

"Recent events including the Fort McMurray wildfire have demonstrated that catastrophe risk remains not only a capital issue but also an earnings issue," says Mr. Eagle. "The lower earnings reported by a number of insurers and reinsurers in the second quarter of 2016 reflect this." Yet ongoing rate pressures are decreasing market appetite for further increases in model investment to help better understand these risks. Add to this the resource intensive model validation required by Solvency II and the ability to maintain multi-model strategies is coming under significant pressure."

> "While model comparison remains important, clients, particularly in Europe, are migrating more towards a strategy based around a core model while working to gain a deeper understanding of the strengths and weaknesses of that model"

These market dynamics are causing a fundamental change in how companies approach their modeling capabilities. "While model comparison remains important, clients, particularly in Europe, are migrating more towards a strategy based around a core model while working to gain a deeper understanding of the strengths and weaknesses of that model. Additionally, if a model is embedded in the underwriting process, the implementation is easier with a single model than with the multi-model approach," asserts Mr. Eagle.

This kind of approach places greater onus on practitioners to play a proactive role in the process, rather than accepting commercial models at face value. According to Mr. Eagle, "insurers can no longer afford to be passive partners in this process – they cannot rely on others to understand their own risks. They must look to leverage the scale of the catastrophe model vendors while also being fully aware of their limitations. We have seen models under or over-estimating event losses, we have seen significant changes to model results following new releases, and of course, we have experienced the losses that were not yet on the radar screen."

This heightened hands-on approach requires a more robust and standardized process for model evaluation. "Our Guy Carpenter Model Suitability Analysis (MSA)® framework for cat model validation is designed to give clients increased confidence and control," Mr. Eagle says. "By providing an independent and unbiased review, we look to help standardize as much of the process as we can and to be fully transparent, working with a wide network of respected and credible academic and research partners."

As the industry looks to expand coverage, new models will of course require platforms on which to run. "Many developers tended to build platforms to run their own models, but there are many other potential providers of models or at least model components which do not have the resources or skills to build a platform," he explains. "As a result, we have supported initiatives such as the OASIS Loss Modeling Framework, which have not only helped to provide some standards for model components, but also created the computational engine that links the components together and carries out the loss calculations."

Mr. Eagle continues: "Traditional commercial vendors have also responded by increasingly opening up their platforms to allow third-party models to be run from their environments. We believe we will increasingly see a distinction between the platform and the models themselves, although we should not lose sight of platform implementation issues such as correlation and uncertainty."

As vendors open up platforms, this creates opportunities for insurers to develop bespoke models. "Instead of building yet another European windstorm model from start to finish," Mr. Eagle states, "why not leverage the widely used and validated model components of existing models but replace components with bespoke elements reflecting the portfolio specifics?" Mr. Eagle concludes: "A new peril model may be perfectly reasonable, but we all know that each model comes with its own assumptions. Unless one is introducing new science and research, we suggest clients and their brokers focus on the pieces that leverage their own data."

> "We believe we will increasingly see a distinction between the platform and the models themselves, although we should not lose sight of platform implementation issues such as correlation and uncertainty"

ABOUT GUY CARPENTER

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