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THE CASUALTY CATASTROPHE WAITING TO HAPPEN: THE THREAT OF MULTI-CLASS RISK ACCUMULATION

Liability has no frontier. It is volatile, can involve multiple insureds and geographies and expose multiple insurance / reinsurance policies across product lines to stress a (re)insurer's balance sheet. As the nature of the underlying insured operations become more complex and connected globally, the casualty/liability exposure for each insured grows thus raising the severity of any event with a number of connected insureds. This is an increasing cause for concern in the casualty underwriting community.

In this white paper we explore the "extreme connectivity" of modern casualty exposures and how they interact with multiple insurance classes to increase (re)insurers' accumulation risk. Further, we ask the question, could today's global inter-connectedness be the catalyst for a major man-made event or a series of damaging events that prove fatal for Casualty underwriters' balance sheets?

21st Century Casualty Accumulation Risk is Huge

Every company with physical assets has a number of liabilities, such as those to its employees, which end up in the casualty market. At issue here is the possible accumulation risk. A quick glance at the FTSE100 and the plethora of liability covers associated with these companies, brings home the true size of these exposures. In addition to product and general liability, there are a number of different sub-classes such as directors' and officers', errors and omissions and employment practices liability.

The Foreword to the January 2016 UBS White Paper for the World Economic Forum Annual Meeting 2016: Extreme automation and connectivity: The global, regional, and investment implications of the Fourth Industrial Revolution begins with this opening paragraph:

"The global economy is on the cusp of profound changes that are comparable in magnitude to the advent of the first industrial revolution, the development of assembly line production, or the invention of the micro-chip. Technological advances are permitting ever greater levels of automation. Meanwhile, the near universal ownership of smart devices in many parts of the world is leading to a degree of interconnectedness that was previously unimaginable."

Extreme Connectivity

Many insurers give a lot of autonomy to underwriters in individual markets, but who is to say they don't price up exposures? All direct insurers and reinsurers from the Middle East to the US will inevitably be pricing in hubs and creating pockets of accumulation. Thus, buying reinsurance becomes a much bigger exercise than usual. According to the UBS white paper, extreme connectivity also increases the risks posed by cyber security breaches. The Energy sector is a prime example say UBS: "In particular, the rise of extreme automation and connectivity via "smart grid" systems, while improving energy efficiency and helping match supply with demand more effectively, may be vulnerable to hacks which shut down electricity transmission or generation systems entirely."

According to Symantec, the energy sector is now one of the five most-targeted sectors for hackers globally. In 2012 Saudi Aramco spent weeks repairing its computer systems after a virus attack. While in 2013, Austrian and German power grids were threatened after an IT accident led to the network being flooded with data.

Exposures Across Hubs, Classes and Organisations

Unless we as a market embed accumulation risk controls into our culture, we will end up with uncontrolled accumulating risk across hubs. For instance, an underwriting portfolio in one location might accumulate risk exposure with others in different locations in the same organisation. The problem is that there is no effective control across companies.

The insurance carrier results that have been published recently are instructive. It is interesting the manner in which many companies have suffered significant losses. A lot of these results point to a lack of control of insurance carriers' true accumulations. Losses could be averted if more attention was paid to internal reporting of exposures prior to events as regular and accurate aggregate reporting is crucial. Solvency II has introduced a number of more stringent reporting requirements as part of Pillar III, but it does not deal properly with aggregate risk.

At the same time, the National Association of Insurance Commissioners reporting in the US is done on a state-by-state basis by looking at premium, but how can the insurance market calculate exposures on a premium base like this?

The argument on the underwriting side is that the market does not have the time or machinery to tackle the issue, but does that argument truly hold up in today's world of increasingly sophisticated analytics and risk modelling tools?

Does the 300 Year Old Insurance Market Understand its Exposures?

Eurasia Group's cyber risk index, which rates the threat to businesses from 1 to 100, signposts a high risk reading of 88 for Chinese firms, against a safe score of 14 for Swiss firms. The United States, despite its comparatively robust cyber environment, is deemed an attractive target by foreign states and dissidents. As a consequence Eurasia Group rates it at 77 - a significantly bigger risk than the majority of rich nations.

In an insurance market boasting more than 300 years of experience, insurers have to begin to understand what their exposures to a risk are, even if they are often theoretical. Many risk carriers remain unaware of the underlying accumulating nature of the risk at the time of binding. Some classes may be more effective than others in this regard, with the aviation and offshore energy markets as examples that have a good grip on their exposures.

It is clear, however, that the oldest specialty class of them all - Marine – is not so advanced. Just look at Tianjin. The problem is that too many underwriters think and operate in a silo. It is the view of Russell Group that in today's connected world, this mentality is not an option.

Better Information on War and Nuclear Risks

The situation is improving but it is not easy to solve. Lloyd's is asking syndicates for better information on war and nuclear risks, but if we look at casualty and marine risks they can be broken down into multiple sub-classes. A broader issue is the sheer scale of these exposures. The marine market has global premium income of some $40bn, of which cargo comprises $18bn. And the size of some of the cargo exposures today is staggering.

Factor in the size and scale of the mega-ships around today and there is the potential for a multi-billion-dollar loss given the accumulation of risk. A large cargo vessel will be insured in the marine hull market, but depending on the situation we are also looking at cargo, war and casualty covers all coming into play.

Extreme connectivity is also fostering geopolitical tensions in several ways. According to UBS it increases "the ability of diverse groups to organize protests and offers the potential for greater publicity to violent extremists. Recent examples have highlighted the convening power of social media across the world. Widely distributed images of Mohamed Bouazizi, and his self-immolation in protest over police corruption, helped give rise to a mass movement that displaced the Tunisian government and triggered the broader Arab Spring in the Middle East."

A Long Way to Go to Understand Casualty Exposures

Modelling casualty accumulation risk is not straightforward. It takes a considerable amount of time and effort to create the in-depth analysis for the detailed modelling that the modern market requires for these casualty accumulations. A number of managing agencies have reached a point where they now have a much greater degree of confidence when it comes to casualty exposures, they are thinking much more seriously about casualty accumulation risk. But really, there's an awfully long way to go.

John F. Kennedy once said that mankind's problems are "man-made, therefore they may be solved by man. And man can be as big as he wants. No problem of human destiny is beyond human beings."

Kennedy's legendary optimism is probably not shared by too many Lloyd's Underwriters. Recently, the Corporation of Lloyd's reported underwriting loss with combined of ratios of 100.1 percent, 102 percent, 104.4 percent in the Casualty, motor and life classes respectively.

Man's capacity for self-harm increasingly appears to be outdoing Mother Nature as a source of human loss of life and financial catastrophe. Lloyd's notes that there have been few notable insured natural catastrophe events, with the largest losses arising from winter weather in the US. While a series of large events in the offshore energy sector dominated the man-made losses.

Interconnected Risks Hit Profits

So far, claims from China's Tianjin Port explosion have been largely marine related, but there were also several large specialty class losses in the aviation and space sectors, including the tragic Germanwings airline disaster.

Russell Group has been warning for some time of the increasingly interconnected – often man-made - 21st perils that confront Underwriters in an operating environment where Corporation of Lloyd's profits fell by almost a third from £3bn in 2014 to £2.1bn last year.

Along with increased costs from major claims, profits as recently reported were affected by lower investment returns. Profits fell sharply from 2 percent to 0.7 percent, resulting in a reduced return of £402mn from the previous year's £1bn.

It seems that the total investment return is the lowest recorded by the Lloyd's market since it began producing annual accounts in 2001. In our conversations with Underwriters we are frequently struck by the market's stoicism, in the face of evidence pointing to the emergence of new complex and often inter-related risks that impact their balance sheets.

Too Complex For Others to Handle?

Why shouldn't the market be optimistic, however? After all we have a proud history of responding to crises and delivering bespoke solutions to clients around the world. As Lloyd's CEO Inga Beale said in the Corporation's latest press release: "Lloyd's is pursuing its strategy to deliver risk solutions to a fast moving world. Business looks to the Lloyd's market to underwrite policies too complex for others to handle. Protection from cyber-attacks, terrorism and climate change are needed now more than ever."

These are emerging risks and equally compelling new market opportunities. One general trend is that a lot of reinsurance companies, which have been for many years Nat cat driven, with a strong focus on Nat cat and property insurance are diversifying into the Specialty classes in search of new more profitable revenue streams.

We are witnessing a strong trend towards casualty, which seems to be more attractive than the seemingly endless soft Nat Cat market. Let's call it a flight to Casualty.

No problem of human destiny is beyond human Underwriters!

To paraphrase John F. Kennedy, no problem of human destiny is beyond human Underwriters!

We will need to develop a better understanding of the perils that we are creating, as it may be time for our sector to invest the same time and financial resources in new Specialty class models – starting with Casualty - as it currently does in the Nat Cat space.

Going one step further, a recent WEF report The Future of Financial Services: How disruptive innovations are reshaping the way financial services are structured, provisioned and consumed outlined a rapidly evolving personal and commercial lines market that brings new opportunities as well as risks to underwriters, particularly in the high margin, more bespoke London market.

As the report outlines: "Farm Family has introduced the concept of aggregate flexible contracts to small / medium enterprises, concentrating on rural and suburban area, and targeting specific risks surrounding certain sectors (e.g., Special Farm Package 10 for agriculture owners). On the personal insurance side, many multi-line insurers offer bundling discounts to customers to promote cross sell across personal auto, home and life policies, with auto and home cross sell being more popular among customers, yet multi-line contracts are still not widely adopted."

Systemic Casualty Risks

There is a clear market opportunity here but as the WEF report explains any downside risk of adverse selection by customers is exacerbated by insurers expanding into areas where they lack experience. Connecting and aggregating these multiple insurance lines with all the extra connectivity could pose a risk in the form of systemising underwriters' exposures in ways that we are far from understanding today.

The WEF report also notes that niche markets and complex commercial lines must continue to require special capabilities that take time and investment to develop. The opportunity to encourage insurers to leverage their sophisticated underwriting capabilities to understand and insure against more complex risks (e.g., unhealthy population) will also result in increased need for reinsurance as insurers focus more on specific, concentrated markets.

As the report notes, however, there are: "Greater risks for catastrophic losses as the concentration of insurers around niche risks increases."

The word "connection" abounds in the WEF report and the authors seem delighted with its repetition! The phrases "Connected cars", "Connected homes" and "Connected lifestyles" are held up as enormous opportunities, which they are, for insurers but it is only at the end of the insurance section of the report that it mentions the downside cyber risk of such an insurance environment in a few throwaway lines.

Almost as afterthoughts, the authors describe the risks of increasing levels of connectivity as the management and protection of sensitive, personal data generated by connected devices, the risk of fraud from customers gaming the connected systems, and data that might be misappropriated by external parties. It seems to Russell Group that these are very significant risks indeed with the potential for class action lawsuits, PI, E&O, and D&O liability scenarios on a systemic scale.

A typical cyber event could threaten multiple assureds and multiple insurance product lines in the same event. The current market demand to write Casualty is a cause for concern as this class has the potential to test a (re)insurer's balance sheet.

Complex web of relationships and interdependencies

The latest Allianz Risk Barometer reports that: "Business interruption (incl. supply chain disruption), market developments (volatility, intensified competition and market stagnation) and cyber incidents are the top three global business risks. Business interruption (BI) is top for the fourth year in succession."

Furthermore: "The primary driver behind increasing BI losses is that interconnectivity of risk is growing day-by-day, as technology, globalization and social change create a complex web of relationships and interdependencies with 'just-in–time' and 'lean' manufacturing now standard practices," says Hugh Burgess, Global Head of Mid-Corporate and Head of Corporate Lines North America, AGCS. "It is also evidenced in the impact of financial crises, as well as in cyber space, with the rise of social networking and the so-called 'Internet of Things'"

In this environment the question has to be asked does the casualty market need more transparency over the insureds that are ultimately being insured and reinsured to properly enforce good accumulation controls? Is a naming convention required which (re-)insurers could use with confidence knowing that they are taking about the same insured risk?

So what is the current state of the casualty market today? The obvious point to make first of all is that the market is soft. Risk appetite varies from company to company but the general trend is unfortunately that policy coverage / conditions continue to broaden, although rate decreases are slowing down as it seems we are nearing the bottom. Against this background, and possibly contributing to the general soft market is the entry of risk carriers that have traditionally focussed on Nat Cat and related short-tail risks

The Flight to Casualty

According to one major reinsurance underwriter we spoke to: "We see a strong trend towards casualty, which seems to offer a more interesting range of opportunities than other insurance classes at the moment. We might describe this as a flight to casualty. Companies are balancing their exposures in an attempt at portfolio management. This applies to the middle market but you have a lot of Nat cat writers, in London as well as some of the major continental reinsurers trying to achieve a better balance."

More competition in casualty, however, is leading to softening in this class, which means that we would expect Underwriters to want to be more selective in risk selection. In the current casualty climate it becomes an imperative to steer capacity more effectively to make sure that underwriters are putting it into the right portfolio, the right risks. Risk carriers have to be more selective and able to focus on superior underwriting practices, in order to identify the right risks.

How to Outperform the Market

The order of the day is to outperform the market. There is nothing different here to what happens in the stock market, where as a minimum stock pickers need to be better than the average, so superior underwriting quality is required. In order to achieve profitability, (re)insurers need to know what they have in their books, how to manage their aggregates and where they have free capacity.

The key to underwriting success in this soft competitive environment is to be more selective. The way that the casualty market needs to do that is to track its aggregates more efficiently and in relation to the capacities that are available. If an insurer is writing in different regions of the world and also writes treaty it also needs to be more controlled because information is scattered.

In such an environment reinsurers need to consolidate the information that they are getting from different cedants around the world. There are two issues. One is the consolidation of risk exposure from these cedants which may arrive in a variety of names and formats. The other is that reinsurers are always lagging one year behind. They are getting the information for the last treaty year so they have to assume that the portfolio is not changing a lot. If the reinsurer has information that the portfolio is changing a lot it means that they have to assume the same changes to the information they are getting.

Data Consolidation the Way Forward?

One reinsurer that Russell Group spoke to says: "But as long as portfolios are pretty stable you can use the prior year data you have got from your clients and consolidate them. But then of course we have the issue of how to consolidate the data? That is the key question here because you are getting heterogeneous information from your cedants. It's a tough job to aggregate all the information and bring it into the same format."

Having established that consolidation is required across business units and product lines, written on a facultative and treaty basis there is a case to be made that one method of consolidation is a questionnaire format. The idea of a questionnaire is a potential way forward, however, it is fair to say that there is likely to be resistance to such a format.

"My experience is that cedants are reluctant to generate new formats," says one reinsurer we interviewed. "Normally you receive what they [cedants] extract from their systems but with all the legacy systems in a lot of insurance companies I think it is a big challenge to get a uniform report."

We need to be sure, however, that we all talk about the same risks. Once we start talking about the same companies we can start thinking about how to aggregate the exposures.

Significant Claims for Underwriters

More recently, events such as the MTBE loss complex has resulted in significant claims for underwriters. In the 1980s and 1990s, methyl tertiary-butyl ether ("MTBE") became the petroleum industry's gasoline additive of choice to replace tetra-ethyl lead. MTBE fuel blends were viewed as an environmental boon; MTBE significantly reduces emissions of smog-producing air pollutants and can be produced relatively cheaply. Yet by the end of the 1990s, MTBE had leaked from tens of thousands of underground storage tanks across the country, polluting groundwater and precipitating a large-scale environmental crisis.

As a result, MTBE removal from groundwater and soil contamination in the U.S. is estimated to cost from \$1bn to \$30bn. Recently, a jury awarded the State of New Hampshire \$236m.

More recently still, the Volkswagen emissions scandal impacted on D&O, Product Recall, Product Liability, Unemployment Insurance, Employers Liability and Environmental Liability to create a toxic cocktail of insured losses.

Volkswagen's industrial-scale emissions fraud from the use of cheating software in 1.1 million Volkswagen and 2.1 million Audi cars worldwide to deceive emissions regulators is a classic case of an 'unexpected' event. It is far from inconceivable that emissions control-manipulating software in engines would be used on an industrial scale to hoodwink investigators. The commercial consequences of non-compliance with vehicle emissions regulations certainly gave an incentive to cheat and 'game the system' in VW's favour, and demonstrates the potential for liability events to have extreme severity. Credit Suisse estimates that the cost to VW in terms of recalls and fines could reach \$87 billion, more financially damaging than the Deepwater Horizon oil spill was to BP. Volkswagen's financial services arm has also been hit by the scandal, having to pay more to borrow money to loan to its customers, says Credit Suisse

What is the New Asbestos?

As a 2015 Swiss re presentation puts it, casualty accumulation matters more in an interconnected and fast evolving society. In the past, casualty accumulation has led to well-known claims cases such as asbestos, the Mont Blanc Tunnel accident and the Deepwater Horizon event.

The increased interdependency of the world caused by globalization, new technology, regulation and macro-economic factors increases the challenges faced by the re/insurance industry in terms of detecting and managing accumulation residing within casualty portfolios. With supply chains spanning countries and companies, and new technologies developing, casualty accumulation risk grows apace.

We are now in a liability environment where we have different lines of business writing on the same risk and paying the same claim. That is the accumulation that casualty reinsurers, with global programmes, which in addition, may have built up from different office units around the world writing the same policy, need to circumvent.

Policies and treaties written out of Munich and Madrid or Zurich and Milan may be on the same risk. Consolidation is therefore an issue for the insurer as well as for the reinsurer.

The Global Risks Report 2016 11th Edition opens with the lines: "Advances in technology and rapid digitization are fundamentally transforming societies, economies and ways of doing business. Often referred to as the Fourth Industrial Revolution, this development presents great opportunities for all actors involved and a previously unimagined solution space for some of the world's most pressing problems. Yet it also presents elusive risks related to changing employment patterns, widening income inequality and rising cyber dependence. Managing the paradigm shift and transition process will be critical to securing stable economies and ultimately thriving societies."

Looking ahead, 3D printing is a new industrial revolution with potential for casualty risk accumulation. A Swiss Re presentation postulates that potential insurance lines that could be affected include General and Product Liability, Product Recall, PI, Med Mal, and EL with impacts on business interruption, property damage and workers compensation. Future issues might include possible infringements of IP rights, strategic and reputational risks and environmental impacts.

Multi-Class Accumulation

When Russell Group speaks to some reinsurers they report their concern of rolling up multi class accumulation. The Russell Group view is that more transparency is required to highlight liabilities and exposures being rolled up from across product lines and geographic regions to support true multi class accumulation. Given the diversified nature of (re)insurers today the requirement is the same for insurers as it is for reinsurer.

The best solution for the casualty market is at least to begin to share what it calls things so that the market is all on the same page. The market can't accumulate if it doesn't know what to accumulate. The Casualty market needs to know the name of its risks so it can put together the right pieces of exposure and it can only do that if it has a kind of uniform or stringent naming convention. Once risks are named the market may choose to come up with a format that it is happy to exchange exposures with.

Name and know your casualty risks to aggregate across different underwriting units, product lines, on a facultative and reinsurance basis. Once this has been done underlying risk data can be integrated to analyse systemic risk.

To conclude this Russell Group white paper, we return to the WEF report:

"Implications of sweeping digitization (also termed the "Fourth Industrial Revolution"), ranging from transformations that are the result of rising cyber connectivity to the potential effects of innovations on socioeconomic equality and global security, remain far from fully understood. At the same time, climate change is unequivocally happening, and there is no turning back time. The increasing volatility, complexity and ambiguity of the world not only heightens uncertainty around the "which", "when", "where" and "who" of addressing global risks, but also clouds the solutions space."

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