Swiss Re Institute

sigma 5/2017 - Commercial insurance: innovating to expand the scope of insurability

Highlights on product innovation

New insurance products are being developed to meet the needs of a rapidly changing economy

Structural changes are creating new risks, such as cyber risk and supply chain disruption.

Technological, economic, demographic, societal and geopolitical macro trends are driving deep changes in the business environment. These structural changes create new opportunities, but also new risks. At the same time, the corporate sector has changed from being dominated by physical assets to deriving more value from intangible ones such as intellectual property, networks, platforms, data and customer relationships. These transformations and the associated exposures they create are mirrored by surveys of risk perception by companies. For example, today business interruption, increasingly linked to cyber and supply-chain risks, is the key corporate risk concern, according to surveys of risk experts globally.

Innovative solutions can improve the efficiency of risk transfer.

Data analytics is leading to better risk assessment. This, and innovation in product design is driving ongoing development of new risk covers for a wider range of threats and perils that businesses face, and is extending insurance covers from tangible to also intangible assets. Holistic covers combine multiple risks and/or interdependent triggers, and allow better alignment to the specific risk transfer needs of an insurance buyer. Parametric solutions are based on indices rather than actual losses. Both cover types can improve the efficiency of risk transfer and enhance the insurability of difficult-to-insure exposures.

New insurance solutions can reduce earnings and cash flow volatility.

Further, alongside the transformation of the corporate sector, other new insurance solutions are being developed to protect earnings and cash flow risks. Some formerly uninsurable non-core business risks can now be at least partly insured due to the evolution of triggers, indemnity structures, and data and modelling advances. Examples of perils that can be covered in more innovative ways include non-physical damage business interruption, cyber, product recall, reputational risk, as well as weather and energy price risks.

Insurance innovations are supporting strategy and growth.

Innovations in insurance also support business strategy and growth. For example, a number of novel solutions enable the operation of new types of business model such as sharing economy start-ups, they facilitate established companies' access to new markets, assist with the smooth closing of mergers & acquisitions, and also enable firms to use risk transfer for marketing support and product differentiation.

Making risk transfer more efficient

Holistic covers can combine multiple risks, years of exposure and triggers.

Holistic or multi-line structures allow corporations to combine multiple risks and/or interdependent triggers. The payments reflect the joint losses from these risks, which is usually less than the sum of the volatility of the individual risks. Traditionally, commercial insurance has typically been purchased on a line-of-business basis, with several types of risk insured separately. Today, corporations increasingly expect integrated and comprehensive solutions to complement existing covers. The focus of insurance buyers is more on the overall bottom-line risk, not on specific risk classes. The motivations behind holistic or integrated insurance solutions are: (1) that many companies are concerned about the coincidence of several serious loss events in close succession; and (2) that these "hits" may not necessarily arise from traditionally insurable exposures. Holistic solutions provide a unified limit of coverage over multiple lines.

Dual-trigger contracts combine an insurance loss trigger with a non-insurance loss trigger.

Dual-trigger contracts are a special form of holistic cover. They typically only pay in the event of an insurance loss (eg, a property loss) in combination with a non-insurance loss (eg, loss from currency devaluation) occurring in the same period. The insurance loss is the first trigger, and the non-insurance loss the second. Losses are covered if both trigger loss criteria are met.

Parametric covers are based on a specified trigger, not on actual losses.

Parametric or index-based solutions are structures which pay out pre-arranged sums when pre-defined conditions are met. Pay-outs are based on exceeding the threshold values of one or several pre-defined metrics (ie, the trigger), and not on the actual losses that a policyholder has experienced. A parametric solution avoids a potentially cumbersome and lengthy loss adjustment process, and can provide almost immediate liquidity to the protection buyer. Parametric solutions can take the form of an insurance or a financial derivatives contract. The type depends on the individual requirements of the client, which can include regulatory, taxation and accounting considerations, among others. With traditional insurance, the policyholder is compensated for replacement or repair costs, and if included in the terms of the policy, also for loss of income due to BI caused by an event. Parametric solutions can close gaps in cover left by conventional insurance as a result of policy exclusions or sub-limited exposures. They can also provide protection for loss events previously deemed to be uninsurable.

Moving towards protecting earnings and cash flow risks

New insurance solutions offer protection for earnings and cash flow risks.

Along with the transformation of the corporate sector from being rich in physical assets to deriving more value from intangibles and services, new and innovative insurance solutions are moving to protection for earnings and cash flow risks. Similar to the case of innovative covers which make risk transfer more efficient, such formerly uninsurable business risks can be at least partly insured due to the evolution of triggers, indemnity structures, and data and modelling advances.

Over time, insurable commercial property risks have broadened to encompass **business interruption** and…

Over time, the nature of insurable commercial exposures has broadened from traditional property covers for damage to buildings and machinery, to business interruption (BI) and contingent business interruption (CBI) risks. Typically, BI insurance is complementary to property cover. It provides protection for loss of profits due to interruption of normal business operations as a result of physical damage to property caused by a natural catastrophe, human error or technical failure. In terms of economic impact, BI losses following a disaster are often higher than the cost of the physical damage itself.[1]

… **contingent business interruption** covers.

While standard BI insurance is triggered in the event of an insured's own-property loss, CBI cover is linked to the property risks of an external party, such as a supplier or client. In particular, CBI insurance reimburses a company for the extra expenses incurred and profits lost due to interruption of business operations at a third party's premises. Hence, certain supply chain risks can be addressed with CBI cover. BI and CBI losses account currently for a growing proportion of overall physical damage-related losses due to the rising interconnectivity of risks. Technological advancement and globalization are expected to further increase the importance of BI risk in the future

Non-physical damage business interruption is the next step in this evolution.

Non-physical damage business interruption (NDBI), in some cases also referred to as "named-peril earnings insurance", is the next stage in the evolution of covers. With NDBI, the insured risk is completely detached from traditional asset-related property risk, as the cover protects earnings even when there is no physical damage at an insured's own or a third-party's property. Some examples of potential NDBI events are electricity blackouts, political events such as strikes, organized blockades or government actions, a withdrawal of regulatory approval or product license (eg, due to quality problems or safety issues), and bankruptcy at a key supplier. Digitalization is another key driver of NDBI losses, as data is increasingly

[1] The average large BI property insurance claim is 36% higher than the corresponding average property damage claim. See *Allianz Risk Barometer – Top Business Risks 2017*, Allianz, 2017, http://www.agcs.allianz.com/assets/PDFs/Reports/Allianz_Risk_Barometer_2017_EN.pdf.

turning into a critical asset and firms are becoming more vulnerable to events that prevent data from being used, as well as to cyber-attacks, software errors and cuts to internet access.

Indemnification inherent in NDBI solutions can differ from that of traditional insurance policies.

In comparison with traditional insurance covers and events triggered by physical loss or damage to tangible property, NDBI solutions may have different approaches to indemnity. These could include the following:

- Indemnification based on the actual losses sustained, similar to established BI practices;
- Parametric solutions based on an objective measurement and a formulaic pay-out, structured as insurance or a derivative, where the trigger is customized in a way to minimize basis risk; or
- Hybrid solutions: double triggers where indemnity is based on a sequence of two or more objective events and possibly staggered pre-defined pay-outs.

The developing **cyber insurance** market is still limited in scope relative to the total exposure.

Cyber risks are one cause of NDBI damages but the range of possible physical and financial losses from cyber, both first- and third-party, is extremely broad.[2] Despite growing awareness, many firms are still not well prepared to deal with cyber risk. An insurance market for cyber exposure is developing, but so far the scope of obtainable cover remains small relative to the total risk. As more (historical claims) data becomes available and risk modelling in this area advances, the insurance covers are also expected to evolve, but this will take time. Meanwhile, robust investment in security technologies and comprehensive risk management practices remain companies' first line of defence against cyber threats.

The main challenges in cyber risk are uncertainty about the frequency and severity of losses, and the potential correlation of risks.

The main challenges to insuring cyber risk are related to the uncertainty about the frequency and severity of losses, and the potential correlation of risks. This applies in particular to cyber crime, similar to terrorism risk in this regard. Both are based on deliberate malicous intent, have the potential for coordinated attacks, and involve a constantly changing threat nature as the perpetrators try to avoid detection and overcome improved defence capabilities. Additionally, insurers worry that the aggregation risk arising out of a single cyber event could result in losses of several billion dollars or more. These aggregation risks limit the insurability of cyber risks and therefore hold back the development of the cyber insurance market.

Product recall events are getting more frequent and more costly.

As a risk category, product-recall insurance is related to the production process but with a focus on product defects which can cause safety issues for and/or harm to users. Recall events are getting more frequent and more costly, mainly as a result of longer and more complex supply chains, and more stringent product safety rules and regulations. Recall insurance complements traditional product liability policies with a cover that attaches before (potentially) defective products cause damage. Hence, third-party liability does not apply. It is a first-party insurance that reimburses companies for financial losses that occur from such an event. For example, pay-out is triggered if an accidental mistake in the manufacturing process could lead to subsequent risk of bodily injury or property damage that would necessitate a recall. In this case, the insurer reimburses the manufacturer for the loss of profit and recall costs etc. Product recall policies may even include a sub-limit to recover brand value.

Policyholders can extend coverage to their customers also.

Policyholders can also extend coverage to their customers. For example, if a dairy company has sent contaminated milk to an ice cream producer, the ice cream company will also lose profits due to the recall. If the dairy firm compensates the ice cream producer in this case, the insurance cover reimburses it for the related third-party loss as well.

Regulatory impairment insurance for drugs makers is a specific NDBI cover...

Regulatory impairment insurance for pharmaceutical manufacturers is a specific NDBI cover for the highly-regulated pharma industry. The manufacturing process for drugs requires approval and certification of ingredients, including from

[2] *sigma* 1/2017: Cyber: getting to grips with a complex risk, Swiss Re.

suppliers, by the Designated Regulatory Authority (DRA) of the respective countries in which the products are sold. There have a been a number of high-profile plant closures and import bans by DRAs in recent years, for failure to adhere to good manufacturing practices, These have resulted in huge losses.

... that protects against profit losses resulting from regulatory actions (eg, manufacturing plant shutdowns).

Unlike traditional property BI and CBI policies, pharma regulatory impairment insurance protects earnings from the negative consequences of a DRA order to shut down manufacturing or the pre-emption of such an order. There was previously no cover available for this risk. The insurance protects revenues and cash flows for patent-protected drugs which are necessary to recoup R&D investments and fund investments in new drugs. For example, a solution can be constructed as a multi-year BI cover based on indemnity of the actual losses sustained, and which kicks in after a waiting period.

Damage to brand value or reputation from an adverse event is difficult to quantify.

The potential array of events that can impair the perception of a firm is very broad. According to Aon, up to 80% of their business clients "will suffer an event that will cause them to lose more than 20% of their value every five years."[3] Firms are operating in increasingly challenging social environments, and managing brand and reputation have become core competencies. While organizations can do much to influence and mitigate reputational risk, they remain exposed to external factors which they cannot control. Since reputational risks are hard to quantify, and many of the risks are not independent from the firms' own actions, insurance markets generally do not provide protection for related damages.

New **reputational risk covers** help with risk mitigation and provide access to crisis management experts in the case of a public relations crisis.

More recently, however, some covers have emerged to provide access to funding for crisis management in the wake of a publicity scandal. These new products help companies manage crises that arise from traditional risks like large industrial accidents, natural disasters, regulatory inquiries, product recall and litigation, to other challenges such as governance violations, ethical challenges to business practices and other activism. The covers offer firms access to crisis management experts and also funding for a quick response in the event of a potential public relations disaster. Their focus is on putting in place the necessary processes and resources to mitigate the effects of a reputational risk crisis. The integration of risk assessment, risk prevention and mitigation facilitates the insurability of a segment of risk that is generally considered uninsurable as a whole.

Another new category of earnings protection cover relates to **weather and energy price risks**.

Another new innovation provides companies with earnings protection against weather and energy price risks. While a vast array of economic activities are related to these risks, the renewable energy sector is particularly exposed and there has been growing demand for such covers.

Producers and traders of renewable energies are faced with earnings risks stemming from volatile production and replacement capacity prices.

Production in the renewable energy sector is inherently volatile. The sector is mostly privately funded and capital intensive. Energy producers and other stakeholders in the value chain are exposed to production shortfall risk, which is aggravated by a significant pricing-mismatch risk for replacement capacities. Replacement capacity mostly comes from spot markets, while contracts for final end-consumption are long-term. In times of production shortfall, prices for traditional (thermal) replacement capacity are likely to rise, amplifying the earnings risk for producers responsible for covering a potential production shortfall. Any shortage of renewable resources can critically impact power output, particularly if the producer needs to replace the renewable energy source with thermal power.

A suite of solutions is now available to protect stakeholders against resulting earnings volatility, and thus facilitate investment in renewables.

The insurance industry has developed a suite of index-triggered products to protect renewable energy stakeholders against resulting earnings volatility and, in turn, facilitate investment in the sustainable energy sector. Compared to traditional indemnity-based insurance, the index-triggered solutions offer faster pay outs, low transaction costs and increased transparency in the settlement process.

[3] C. E. Boyle, "Aon, Zurich Launch Innovative $100 Million Reputational Risk Coverage", *Insurance Journal*, 11 October 2011, http://www.insurancejournal.com/news/international/2011/10/11/219349.htm.

Supporting strategy and growth; using risk transfer to create new business opportunities

Insurance innovations can also support business strategy and growth.

Innovations in insurance are gradually coming to support business strategy and growth. For example, novel solutions include those that :

- Enable the operations of new types of business models such as sharing economy start-ups;
- Facilitate established companies' access to new markets;
- Assist with the smooth closing of mergers and acquisitions.

The **sharing economy** often implies commercial use of a private asset, a development not foreseen under traditional insurance policies.

With phenomenal growth over recent years, sharing economy start-ups have become an important part of the modern business ecosystem. The start-ups have low operational costs because they do not have the inventory expenses associated with traditional businesses. For instance, Uber does not own its cars, and Airbnb does not own rental units. The ownership of assets and hence the related risks are borne by the independent contractors associated with the start-ups, often individuals rather than firms. Mixing personal and commercial use was not foreseen in traditional personal lines insurance policies, such as private passenger auto or homeowners, meaning a gap in the market.

Covers for the sharing business model are becoming available.

Liability in the sharing economy is complex and potentially challenging to allocate between the different parties involved. New covers supporting these business models are becoming available. For example, Airbnb began offering host protection insurance in 2015.[4] In general, the evolving solutions for the sharing economy constitute a new mix of property, liability, reputational and cyber risks.

Ride-sharing firms provide commercial insurance cover for their drivers who use privately-owned vehicles.

One significant example of how insurance might evolve due to technology disruption is the evolution of transportation network companies (TNCs) like Uber and Lyft in the US. Many of the drivers who work for TNCs do not have a livery driver's license, and their cars are neither registered nor insured as commercial vehicles. Generally the drivers' standard personal auto policies will not provide coverage for ride-sharing. This is where a commercial policy for the driver of the TNC is necessary. Several TNCs in the US provide cover for their drivers for third-party liability and uninsured motorist coverage with limits of USD 1 million per incident during periods that they are driving for the company. This ensures that customers and third parties are protected should an accident occur during a ride arranged by the TNC. The TNC policy dove-tails with the drivers' own personal auto policies and helps the TNCs to establish a reputation of safety.

Political risk insurance can facilitate established companies' business expansion in foreign markets.

Political risk insurance can facilitate established companies' business expansion plans in foreign markets. By and large, the segment is divided into two areas: equity protection or investment insurance, and sovereign non-payment. The first collection of solutions covers foreign direct investment against political interference including expropriation and confiscation of assets, import/export embargos, selective discrimination and forced divestitures. Political risk insurance can also protect against inconvertibility of local into hard currency, and the inability to transfer hard currency out of the country. The contracts are peril based and generally safeguard foreign investors' assets. This type of cover helps mitigate strategic risks that come with certain internationalization strategies of a company. It can help companies communicate with shareholders, reassuring them that their assets are protected, and also with banks, facilitating lending. By contrast, covers in the sovereign non-payment area (contract frustration by government institutions) protect firms that sell products or services to various levels of government. A number of political risks, however, still lie beyond the current boundaries of insurability.

[4] https://www.airbnb.com/host-protection-insurance, accessed 14 June 2017.

Representations and warranties insurance can be a valuable tool to overcome hurdles in M&A deals.

In negotiating a merger or acquisition, the allocation of unknown business risk between the buyer and the seller is generally one of the most contentious aspects of the negotiation. A relatively new insurance product – transactional liability – can help overcome hurdles in finalizing a deal. This type of cover, also termed representations and warranties insurance (RWI) or warranty and indemnity insurance, reduces a buyer's risk in acquiring a business, adds value to a buyer's offer in a competitive setting, and reduces a seller's risk of paying post-closing indemnification claims. Specifically, RWI protects the insured from unknown breaches of representations and warranties made by the seller in an acquisition agreement, where statements about the status of the company are made by the seller. Traditionally, the representations were guaranteed by putting money aside in escrow that could be drawn down if there was a breach. However, the concept of an escrow account has various disadvantages. For instance, the seller cannot immediately capture the full sale price, and the accounts are generally expensive, since the escrow amount could be in place for months or even years. The RWI covers were created to provide insurance in lieu of or in addition to (now) smaller escrow accounts. RWI also protects the relationship of the acquirer with the management team of the acquired business from impairment as a result of representation and warranty disputes.

Expanding role of corporate risk management

New covers will expand the boundaries of insurability and the role of insurance in corporate risk management.

Corporate risk management is becoming more sophisticated as a necessary response to the changing risk landscape from structural changes in the business environment. Firms are transferring risk through financial instruments in order to reduce costs associated with financial distress, and to safeguard cash flow and thereby investment projects. However, they are also using novel risk transfer solutions to create value by lowering the cost of capital and to reduce earnings volatility. New covers will expand the scope of protection products by enlarging the boundaries of insurability and also the role of insurance in corporate risk management.

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