Swiss Re’s approach in addressing the protection gap: Examples of transactions

21st May 2019, Innovative Risk Solutions

« Tiefe Einkaufspreise sind Unternehmen oft wichtiger als transparente Lieferketten – das birgt Risiken, ... »

«Weltweit sagten 65 Prozent der 504 befragten Firmen, dass sie keinen oder einen eingeschränkten Überblick über ihre Lieferkette haben.

Häufig kennen die Firmen nur ihre direkten Lieferanten. Über deren Zulieferer wissen sie wenig bis nichts. Angesichts von Tausenden von Betrieben, die weltweit in die Produktion involviert sind, ist das auch eine ziemlich anspruchsvolle Aufgabe.

Doch die intransparente Produktion hat laut Markus Koch, Partner bei Deloitte, auch andere Gründe: Statt auf Transparenz schauen viele Firmen auf die Kosten. «Es heisst allgemein, dass die Lieferanten seien strategische Partner. Oft sind das Worthülsen. Was meistens zählt, sind tiefe Einkaufspreise.»

"... there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns – the ones we don't know we don't know."

Former United States Secretary of Defense Donald Rumsfeld – a great quote for which he "won" the Foot in Mouth Award (for baffling quotes by public figures) by the Plain English Campaign.

Supply chain risk management based on risk maps is a prerequisite for material insurance risk transfer – the quadrant model

Resilience360 has classified its portfolio of supply chain risk categories using a two-by-two matrix that plots the likelihood of a given risk along one dimension, and the impact of the event, if it were to occur, along another.

The quadrants represent the following:

- High impact, high likelihood incidents
- Low impact, high likelihood incidents
- High impact, low likelihood incidents
- Low impact, low likelihood incidents

Perils and damages – the frequency / severity model

Examples of severe ground transportation incidents that occurred in Europe in 2018 include two train accidents which disrupted railway traffic on key rail corridors for more than 2 weeks: one on the Brenner pass in January due to a train derailment and the other near Milan in June, which impacted intermodal services between Genoa and Switzerland.
The fourth quadrant or a map of the limits of statistics

- **Mediocristan:**
  - "First Quadrant: ...Statistics does wonders. These situations are, unfortunately, more common in academia, laboratories, and games than real life what I call the "ludic fallacy". In other words, these are the situations in casinos, games, dice, and we tend to study them because we are successful in modeling them.
  - Third Quadrant: Complex decisions in Mediocristan: Statistical methods work surprisingly well."

- **Extremistan:**
  - "Second Quadrant: Simple decisions, in Extremistan: some well known problem studied in the literature. Except of course that there are not many simple decisions in Extremistan.
  - Fourth Quadrant: Complex decisions in Extremistan: Welcome to the Black Swan domain. Here is where your limits are. ..."

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Clipping tails

1) Avoid Optimization, Learn to Love Redundancy.
2) Avoid prediction of remote payoffs ...
3) Beware the "atypicality" of remote events.
4) Time.
5) Beware of Moral Hazard.
6) Metrics
7) Where is the skewness?
8) Do not confuse absence of volatility with absence of risks.
9) Beware presentations of risk numbers.”
Decomposition and recombination

- We aim to link or trace back risks to perils we know sufficiently well and lend themselves to frequency modelling used in any line of business we have experience in.
- We aim to limit uncertainty around the indemnity to be paid under the policy.
- The determination of the pay-out depends on the client’s situation and the underlying peril and frequency model.

We try to avoid the fourth quadrant of the risk map and aim to develop a peril (frequency) / damage (severity) model.

Limits of Statistics – extreme fragility to Black Swans
Energy supplier failure

- Optimised hedging; protect low margin trading business from rare but potentially large losses due to commodity supplier failure (force majeure)

- Underlying property is not the policyholder’s
- Combination of property all risk and traded commodity price risk. Integrated cover combining two risks, i.e. force majeure event at supplier's facilities and traded gas price
**Rail cargo**
combined ndbi, cbi

- Stand-alone combined non-physical damage (NDBI) and contingent damage business interruption (CBI) policy covering fire, natural perils and supervisory / safety regulations
- Costing / modelling based on full, detailed network and damage analysis


**Earnings Protection**
Insurance of long term sales income

- Protects long-term future income streams related to specific contracts, i.e. risk of loosing a contract as a consequence of a physical damage to the underlying property
- Underlying exposure is not the policyholder's own property

- Client has set up an asset on the balance sheet. Present value calculation where insurance lowers the discount rate. Combination of insurance (property) and treasury risk (financial planning)
Retail propensities to buy

- Large block of supplemental capacity protects revenue from sales in case of changes in buying behaviour of consumers after earthquake shock
- Client uses cover to signal and communicate effective risk management vis-à-vis investors

- Parametric, no physical damage required
- Covers loss of financial interest on a pre-agreed valuation basis. Quick, formulaic pay out and discretionary use of funds protects client’s liquidity

Suite of parametric natural perils solutions
STORM, QUAKE, HazeShield, Insure8, SMOKE, FLOW
River transport
parametric water-level

- The summer of 2018 left water levels of most rivers in Europe at record lows.
- The period July to September 2018 was the driest and warmest for Germany and neighboring countries ever recorded since 1950. Production volume impacts and increased transportation costs were the consequence.
- "FLOW" is designed for businesses that suffer a loss, because the river is below or above a certain water level.

FLOW
FLOW is an index-based water-level insurance, customized for companies with revenues and costs exposed to rivers' high or low water levels in Europe.

How it works
Swiss Re Corporate Solutions' experts structure an index formula which references to measured water levels at defined river gauges. The customized index approximates the client's water level exposure regarding revenues and costs as close to the reality as possible.

Coverage
Each FLOW contract is customized to the individual water level exposure of the client. The payout is a fixed amount, e.g. per day the index remains beyond the defined threshold value. The payout amounts are determined by looking at a number of factors, including but not limited to:
- Loss of revenue due to business interruption
- Increased cost of operation
- Extra expenses to mitigate the situation or to establish alternatives
- Expenses not covered by traditional insurance policies, if any

Industrial capital goods
force majeure

- Operator enters into a long-term lease of capital goods to be purchased by Special Purpose Vehicle financed via equity and debt
- Tri-party manufacture sales agreement (owner, operator, manufacturer) includes contract cancellation option for the owner in case a force majeure event renders the project uneconomical

- In the event of a cancellation of the contract, the manufacturer is obliged to return all pre-payments / instalments made for goods not yet delivered to and accepted by the owner.
- Cover pays time-dependent return of pre-payments / instalments in accordance with the underlying tri-party manufacture and lease agreement.
Consumer goods
weather, terrorism, social unrest

- Drop in footfall is measured as passenger numbers at specified airports
- Deductibles, pay out and limits are based on in-depths analysis of historical revenue figures

- Protects revenues at various shops all in the same city
- Covers loss of profit and fixed costs in case of drop in sales due to drop in footfall following terrorist events

In short

- We view supply chain risk in the context of the complete value chain (upstream and downstream), rather than supply / supplier risk only. We further consider supply chain risk as special type of contingent business interruption or non-physical damage business interruption risk. Supply chain risk tends to be somewhat more complex though.
- Supply chain risk management based on risk maps is a prerequisite for material insurance risk transfer. We try to avoid “Extremistan”, black boxes and all risk situations that are not clearly delineated.
- Risk maps and risk analyses are prerequisites for insurance risk transfer but they are not sufficient for insuring supply chain risk. While we underwrite uncertainty, we still need to model the risk. We can insure many, if not most of the underlying perils and desired pay-outs.