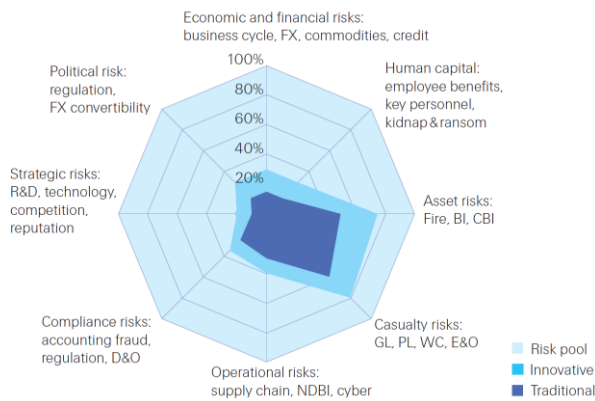


Swiss Re's View on Supply Chain Risks

Swiss Market Supply Chain Event – Zurich, 21st May 2019

Total and insurable risks threatening a corporation



Source: Swiss Re Institute.

Criticism: Insurance industry lacks innovation

Lack of innovation – a provocation?

Some important innovations over the past 25 years

- Natural perils insurance
 - From pure material damage to large business interruption limits
 - From the peril of earthquake to the peril of flood
 - From indemnity based products to indexed based products
 - From (re-)insurance markets to financial markets
 - From tailor-made selling to internet distribution
 - From in-house loss data collection to digital transformation and data pools
- Substantial growth of Contingent Business Interruption extension limits
- Non-damage products developments stand-alone, integrated or structured

Incremental or evolutionary !

At the Junction of Insurability ...

	Triggers	Industries	Insurers appetite
Most demanded contingent Business Interruption triggers	1) Political risk	all industries	Limited appetite
	2) Supplier incident	all industries	due to physical damage
	3) Insolvency of a supplier	all industries	Credit & Surety
	4) Product recall	Automotive, Food	Limited appetite – Casualty
	5) Denial of access	all industries	due to physical damage
	6) Regulatory Impairment	Life Science	BI due to closure of operation
	7) Denial by Civil Authority	all industries	Aviation closure of airspace
	8) Virus, Hacker attack	all industries	Limited appetite
	9) Service Interruption	all industries	due to physical loss at supplier

- Contingent Business Interruption after physical damage loss is part of current covers
- Contingent Business Interruption after non-physical damage loss is at the junction of insurability (accumulation potential, assessability, lack of information, entrepreneurial risk etc.)

What are the Re/Insurers Concerns?



- Lack of Transparency of Supply Chain Exposures
 - Critical supplier/customer details are often not available (i.e. name, exact location, product, BI exposure, suppliers of suppliers)
 - Difficult to determine BI impact of supply chain disruption
 - Insured's supply chain risk management varies (it is dynamic and can change quickly)
- Threat of unknown Nat Cat Accumulations
 - Exact geo-information difficult to get, especially Tier 2 and higher
 - Outsourcing to emerging markets increases complexity and challenges accuracy
- Difficult to Assess and Model the Supplier/Customer Dependency Risk
 - For complex Industries, supply chain is extremely difficult for underwriters to assess and model (analysis paralysis)
 - Cross accumulations are difficult to control
 - Pricing and admin tools are not adequately adapted to tracking supply chain exposures
- Claims are difficult to adjust for both insurers and insured's

Dependency Matrix – Direct vs. Indirect Loss

Indirect Loss	Direct Loss at particular supplier																																
	Accounting & Consulting / Professional Services (2)	Aerospace Manufacturers & Suppliers, Airlines	Automotive Manufacturers & Suppliers	Banks	Chemicals	Telecommunication and Networks	Div. Services	Technology	Media & Content	Exploration & Production / Refining & Marketing	Food & Tobacco	Forestry Industry	Government & Public Institutions	Health Care	Hotels & Casinos	Machinery	Metals	Mining	Petrochemicals (incl. Plastics)	Pharmaceuticals	Pipelines	Retail & Trading	Textile & Wood Manufacturers	Transportation Services	Utilities	Semiconductors & Microelectronics	Total						
Indirect loss/consequential loss at industry segme	1	2	3	4	6	7	9	10	12	13	14	15	16	17	18	20	21	22	23	24	25	26	28	29	30	33							
1 Accounting & Consulting / Professional Services	1																												0				
2 Aerospace Manufacturers & Suppliers, Airlines		1			1			2										2					1					2	3				
3 Automotive Manufacturers & Suppliers			1		2			2										2			1		1					2	10				
4 Banks				1																									0				
6 Chemicals					1																								6				
7 Telecommunication and Networks						1																							4				
9 Div. Services							1																						0				
10 Technology								1																					2				
12 Media & Content									1																				2				
13 Exploration & Production / Refining & Marketing										1																			4				
14 Food & Tobacco											1																		3				
15 Forestry Industry												1																	2				
16 Government & Public Institutions													1																1				
17 Health Care														1															2				
18 Hotels & Casinos															1														0				
20 Machinery																1													2				
21 Metals																	1												2				
22 Mining																		1											0				
23 Petrochemicals (incl. Plastics)																			1										3				
24 Pharmaceuticals																				1									2				
25 Pipelines																					1								0				
26 Retail & Trading																						1							1				
28 Textile & Wood Manufacturers																							1						2				
29 Transportation Services																								1					0				
30 Utilities																									1				4				
33 Semiconductors & Microelectronics																										1			3				
<i>Total (the higher the more influencing across industries)</i>	0	0	1	0	12	0	0	9	0	4	0	2	0	0	0	0	0	8	4	6	4	0	0	4	0	2	4	3					

Alternative Proposals to protect against Supply Chain Interruptions

Examples:

- Parametric solution to a nat cat event affecting suppliers/customers in a region
- Stand-alone Contingent Business Interruption Insurance
- Non-damage Contingent Business Interruption Insurance

➤ Mixed level of demand amongst insured's

➤ Modelling and assessment challenges for insurers do not go away

Swiss Re's Approach to Contingent Business Interruption

UW's need to understand Insured's supply chain risk management programs

- Name, COPE, geographic details (i.e. address or geo coordinates) of top supplier/customers
- Business Continuity Plan for critical suppliers/customers
- Clear understanding of supply chain bottlenecks
- Supplier requirements for loss prevention
- Back-up inventories (at supplier or at insured)
- Production Redundancies
- **Estimated BI impact of supply chain disruption**
- Due diligence of insured with respect to critical suppliers
- Regular communications and updates from Insured about supply chain management program

There is **no 'quick fix'** single solution for insured's and insurers – it's a difficult topic for both

Risk transfer should not be a substitute for supply chain risk management

Balanced approach to **innovation** may be optimal for insurers framed around client centricity, risk-based pricing and integration with capital markets

Boundaries of insurability provokes challenges eg. entrepreneurial risks

Industry continues to **learn** from major events



"In real estate, the most important thing is location, location, location.....with insurance, the most important thing is information, information, information."



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