Swiss Re’s View on Supply Chain Risks

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

Total and insurable risks threatening a corporation

- Economic and financial risks: business cycle, FX, commodities, credit
- Human capital: employee benefits, key personnel, kidnap & ransom
- Asset risks: fire, BI, CBI
- Casualty risks: GL, PL, WC, E&O
- Operational risks: supply chain, NDBI, cyber
- Compliance risks: accounting fraud, regulation, D&O
- Strategic risks: R&D, technology, competition, reputation
- Political risk: regulation, FX convertibility

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 ...

<table>
<thead>
<tr>
<th>Triggers</th>
<th>Industries</th>
<th>Insurers appetite</th>
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<tbody>
<tr>
<td>1) Political risk</td>
<td>all industries</td>
<td>Limited appetite</td>
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<tr>
<td>2) Supplier incident</td>
<td>all industries</td>
<td>due to physical damage</td>
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<td>3) Insolvency of a supplier</td>
<td>all industries</td>
<td>Credit &amp; Surety</td>
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<td>4) Product recall</td>
<td>Automotive, Food</td>
<td>Limited appetite – Casualty</td>
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<td>5) Denial of access</td>
<td>all industries</td>
<td>due to physical damage</td>
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<td>6) Regulatory Impairment</td>
<td>Life Science</td>
<td>BI due to closure of operation</td>
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<td>7) Denial by Civil Authority</td>
<td>all industries</td>
<td>Aviation closure of airspace</td>
</tr>
<tr>
<td>8) Virus, Hacker attack</td>
<td>all industries</td>
<td>Limited appetite</td>
</tr>
<tr>
<td>9) Service Interruption</td>
<td>all industries</td>
<td>due to physical loss at supplier</td>
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- 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
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.

Industry continues to learn from major events.

Boundaries of insurability provokes challenges eg. entrepreneurial risks.

"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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