Monte Carlo 2020
Re|think complexity – Be better prepared for systemic risks

7 September 2020
Torsten Jeworrek, Stefan Golling
Agenda

1. Insurance industry outlook
   Torsten Jeworrek

2. Systemic risks on the rise
   Stefan Golling – Torsten Jeworrek
Insurability of risks
Assessable – random – independent

- Insurable
  - Liability
  - Terrorism
  - Cyber
  - NatCat

- Uninsurable
  - Fire
  - Liability
  - Terrorism
  - Cyber
  - NatCat
  - Political risks
  - Critical infrastructure
  - NBCR
  - Nuclear hazards
  - Pandemic

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Update on recent loss events

COVID-19-related losses with reduced momentum since 30 June

Hurricanes Hanna, Isaias and Laura (July and August): Munich Re anticipates a low triple-digit-million euro amount in claims

Explosion in Beirut: Claims in a low three-digit-million euro range expected

California wildfire season is currently still ongoing: Impact for Munich Re currently not estimated to be material
### Primary insurance and reinsurance development

#### Global premium development 2017–2019/2020e–2022e

<table>
<thead>
<tr>
<th>Region</th>
<th>2019 Premiums (€bn)</th>
<th>2019 Growth Rate (%)</th>
<th>2017–2019 CAGR (%)</th>
<th>2020–2022 CAGR (%)</th>
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<tbody>
<tr>
<td>Europe</td>
<td>€85bn</td>
<td>31%</td>
<td>2%</td>
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<tr>
<td>North America</td>
<td>€94bn</td>
<td>34%</td>
<td>8%</td>
<td>2.4%</td>
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<tr>
<td>Asia Pacific</td>
<td>€66bn</td>
<td>24%</td>
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<tr>
<td>Latin America</td>
<td>€15bn</td>
<td>5%</td>
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<tr>
<td>Africa/Middle East</td>
<td>€14bn</td>
<td>5%</td>
<td>1%</td>
<td>2.4%</td>
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<tr>
<td><strong>Total</strong></td>
<td>~€274bn</td>
<td>100%</td>
<td>5%</td>
<td>2.4%</td>
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#### P-C RI and PI real growth rates (CAGR)

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<td>1.3%</td>
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<tr>
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<td>8%</td>
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<td>Asia Pacific</td>
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<td>Africa/Middle East</td>
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<tr>
<td><strong>Total</strong></td>
<td>5%</td>
<td>2.4%</td>
<td>3%</td>
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Insurance industry outlook

Insurance capacity stable overall
Alternative capital re-evaluating investment case

Dedicated reinsurance capital
Traditional RI capital (US$ bn)

Total of reported top 50 fund NAV plus estimated non-reported capital
Source: AM Best, Guy Carpenter, Munich Re

Trends

Traditional market
- Traditional reinsurance capital showing overall stable development despite recent COVID-19 impact
- Capital markets highly volatile in 2020 but recent market recovery
- Capital increases by existing market players and new players entering the market
- Withdrawal of capacity in some lines of business

Non-traditional capacity/Alternative Risk Transfer ("ART")
- Market for Alternative Risk Transfer (ART) remains stable at US$ 90bn+ ¹
- Loss creep, unmodelled perils and uncertainty around COVID-19 leading to investors expecting higher returns
- Recent tendency to lock up capital in illiquid products driving interest in more transparent, liquid Cat bond market
- "Flight to quality" of ART capacity supporting our retro programme

¹ Total of reported top 50 fund NAV plus estimated non-reported capital
Source: AM Best, Guy Carpenter, Munich Re

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Industry’s price development favourable
Insurance and reinsurance indices showing upward price trends in recent years

US composite insurance price change\(^1\)

US Property Catastrophe Rate-on-Line Index\(^2\)

1 Marsh Global Analytics  
2 Guy Carpenter. Based on 1990 (=100)
Systemic risks on the rise

**Pandemics**
Global COVID-19
economic losses up to
US$ 12 trillion\(^1\)

**Cyber**
Ransomware attacks
increased by
148% in March 2020\(^2\)

**Climate change**
~800 million
people live in cities that will be
affected by
sea-level rise
if no action is taken\(^3\)

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\(^1\) Source: IMF June 2020
\(^2\) Compared to baseline levels in February; Source: Carbonblack, April 2020
\(^3\) Source: C40 Cities, RCP 8.5 “business as usual” scenario
Insurance industry bears significant COVID-19 losses
But there is a huge uninsured portion

Source: Dowling, Artemis, Barclays, BoFA, KBW, USB, Lloyd’s, Wells Fargo, Goldmann Sachs, Berenberg

Risk capital of US insurers would have been consumed within a few weeks if BI losses had been insured

1 Source: Dowling, Artemis, Barclays, BoFA, KBW, USB, Lloyd’s, Wells Fargo, Goldmann Sachs, Berenberg
2 Source: APCIA
Munich Re’s approach to uninsured pandemic risks

Pandemic risk exceeds capacity of (re)insurance

National pools preferred

Focus on non-damage BI for small and medium-sized businesses

Parametric cover to ensure quick payout

No cover for second wave of COVID-19

The (re)insurance industry can contribute its know-how and infrastructure

Keep it simple: initially a pool for pandemics only

Assure affordability of cover for SME through government subsidy

Mandatory cover to avoid low take-up rate and anti-selection

Financial support from capital markets to be considered

Parametric cover to ensure quick payout

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COVID-19 significantly affecting cyber risk
Developments underline necessity, potential and complexity of cyber insurance

Systemic risks on the rise

COVID-19 used in the context of phishing attacks

Changed exposure due to shift to working from home

Digitisation push (Online shopping & communication, etc.)

IT security levels lower due to reduced budgets/investments

Accelerated digitisation

- Strong increase in digital solutions
- Raised cyber awareness
- Increase in frequency and severity of malicious attacks
- Increase in frequency of cyber crime losses to be expected
- Hardening of conditions likely
Current “hot” topics we are addressing

Market sustainability (ransomware)

Coverage topics (system failure, CBI, bricking)

Cyber war (LMA Cyber Working Group)

COVID-19 (constant exchange of information on developments)

Silent cyber (comprehensive solutions)

Accumulation and systemic risk (vendor models, insurability)

Technology and insurance (augmented underwriting)
Strong growth expected in cyber insurance market
Cyber is one of Munich Re’s main strategic areas

GWP global cyber insurance market¹

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GWP Munich Re cyber portfolio

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<th>Year</th>
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Cyber reinsurer of the year 2017, 2018, 2019 and 2020

¹ Estimates by Munich Re
Climate risks – The clock is ticking
Adaptation and mitigation required

Global effort
Economic + ecological transformation
Technological push

Wildfire
Flood
Tropical cyclones
Drought
Thunderstorm
Insurance gap still very high in many parts of the world
Decreasing in industrialised countries, unchanged in developing countries

Losses from weather-related natural disasters 1980–2019

US$ bn

North America
Asia
Europe
Australia/Oceania
South America
Africa

Overall losses
US$ 4,239bn

Insured losses
US$ 1,359bn

Worldwide: Less than 1/3 of losses were insured

Source: Munich Re NatCatSERVICE 2020, in 2019 values
Solutions to mitigate climate change and strengthen resilience
Initiatives to support the Paris Agreement targets and to adapt to climate risks

Munich Re memberships

Net Zero Asset Owner Alliance
ClimateWise
Insurance Development Forum
Climate Action 100+

Enabling
- Green Tech Solutions
- Investments and partnerships

Disabling
- No new coal
- No new oil sands
- Asset divestments

Resilience
- High risk capacity
- Digital risk assessment tools
- Parametric trigger solutions
Re | think complexity
Be better prepared for systemic risks

Pandemics
Cyber
Climate change

State-backed insurance pools
Holistic approach
Technological push and resilience

Images: 1 zhangshuang / Getty Images 2 Andrew Brookes / Getty Images 3 Song_about_summer / Adobe Stock