


Emerging Risks – Overall Trend and Deep(er) Dive into Climate Change

ERM Symposium
 March 9, 2020 9:30 am and 2:05 pm
 Max J. Rudolph, FSA CFA CERA MAAA



1


Emerging Risks

New

- Never happened before

Evolving


- Risk is changing
- Velocity
 - Quickly
 - Slowly



2

Survey of Emerging Risks

- **Annually since 2008**
- **Sponsored by the actuarial profession**
 - Canadian Institute of Actuaries (includes French translation of key findings)
 - Casualty Actuarial Society
 - Society of Actuaries
 - Joint Risk Management Section
- **Mix of quantitative trended results and qualitative assessments**
- **Expect current report to be released in summer**




3

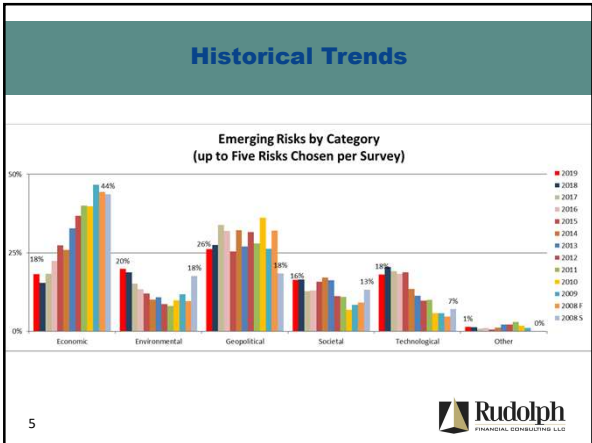
Survey of Emerging Risks - 5 Categories

- Economic
- Environmental
- Geopolitical
- Societal
- Technological

4



4



5

**Survey of Emerging Risks
23 Risks (Slide 1 of 2)**


Economic

- Energy price shock
- Currency shock
- Chinese destabilization
- Asset price collapse
- Financial volatility

Environmental

- Climate change
- Freshwater loss
- Tropical storms
- Earthquakes
- Severe weather

6




6

Survey of Emerging Risks
23 Risks (Slide 2 of 2)

Geopolitical <ul style="list-style-type: none">• Terrorism• Weapons of mass destruction• Wars• Failed and failing states• Transnational crime• Globalization shift• Regional instability	Societal <ul style="list-style-type: none">• Pandemics• Chronic diseases/medical delivery• Demographic shift• Liability regimes/ regulations
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Technological

- Cyber/networks
- Disruptive technology




7

7

Key Findings

- Overall results
- Climate change dominates survey
- Cyber concerns continue
- Geopolitical risks lead among categories
- Undervalued risks




8

8

Top Current Risks

- Climate change (16.5%)
- Financial volatility (9.5%)
- Asset price collapse (9.1%)
- Cyber/networks (7.8%)
- Disruptive technology (6.1%)




9

9

Top 5 Emerging Risks


- **Climate change (53.5%)**
- **Cyber/networks (51.3%)**
- **Disruptive technology (34.5%)**
- **Demographic shift (32.7%)**
- **Financial volatility (28.8%)**

10 

10

Top Emerging Risks


- **Climate change (27.0%)**
- **Disruptive technology (10.6%)**
- **Cyber/networks (10.2%)**
- **Financial volatility (6.2%)**
- **Asset price collapse (5.8%)**

11 

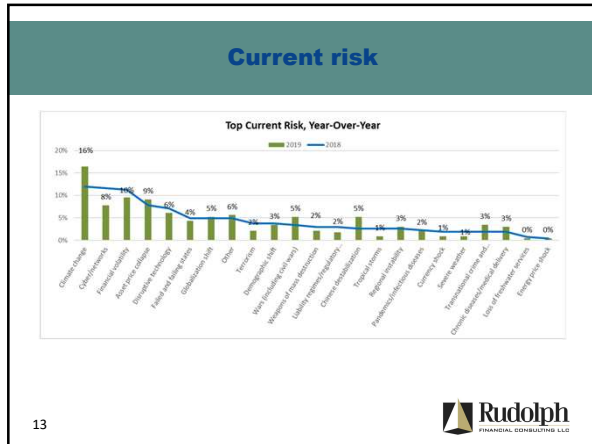
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Top Risks in Combination

- **Climate change (11.6%)**
- **Cyber/networks (8.1%)**
- **Financial volatility (7.4%)**
- **Disruptive technology (6.8%)**
- **Asset price collapse (6.3%)**

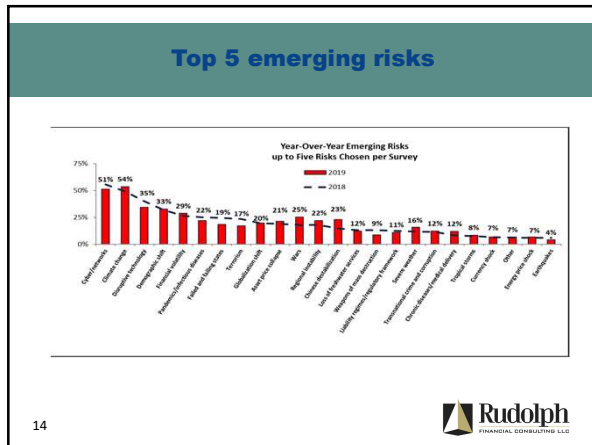
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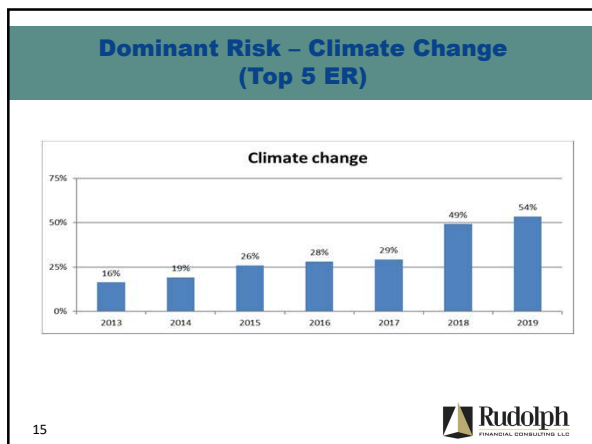
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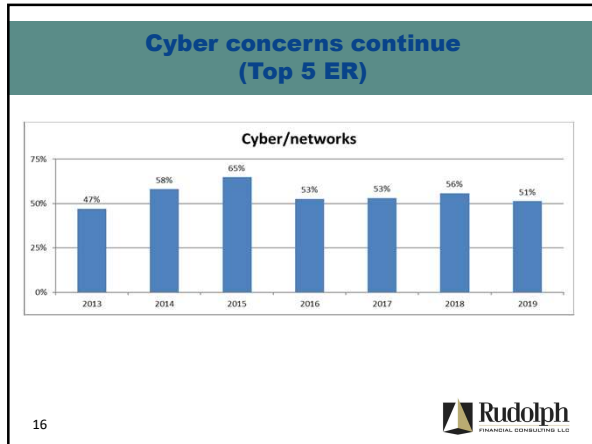
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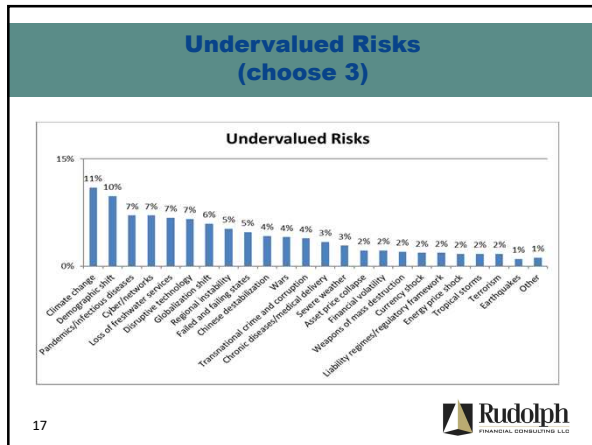


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17

- ### Takeaways – ER Resiliency
- Bend but don't break
 - Look for event clusters and interactions
 - Learn from the mistakes of others
 - Combine qualitative and quantitative assessments
 - Avoid black box and false aura of precision (2-way communication)
 - Listen to outside experts but think for yourself
 - Proactive – floods, heat, pandemics, earthquakes, digital breaches, market volatility, obesity
 - How do risks extrapolate across longer time horizons
 - Build off predictive analytics and other quantitative tools
 - Involve board, set proactive guidelines and risk policy statements
- Rudolph**
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18

To access surveys/articles

- Emerging Risk Survey Key Findings
<https://www.soa.org/resources/research-reports/2019/12th-emerging-risks-survey/>



19


19

Questions!
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Background

- Society of Actuaries Board of Governors
- President's Award for CERA implementation
- Investment Section Chair
- ERM Symposium Chair
- ASOPs 46, 47, 55



20

20
