

LIMA Programme

Introduction to Engineering Insurance

18th September 2023

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NOT IF, BUT HOW



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Munich Re

01



Reinsurance (€48bn)

Munich RE 

Munich RE  | 

 **new/re**

Primary insurance (€19bn)

ERGO

ERGO Direkt
Versichern heißt verstehen.

DKV

 **ERV**



VORSORGE
Lebensversicherung

nexible

Asset Management

MEAG

Strong international presence

North America

We serve our cedants, corporate clients and brokers from **MORE THAN 20 LOCATIONS** worldwide

Our organization is based on **LINE OF BUSINESS TEAMS IN MUNICH** and **3 REGIONAL RESPONSIBILITIES** for the local offices

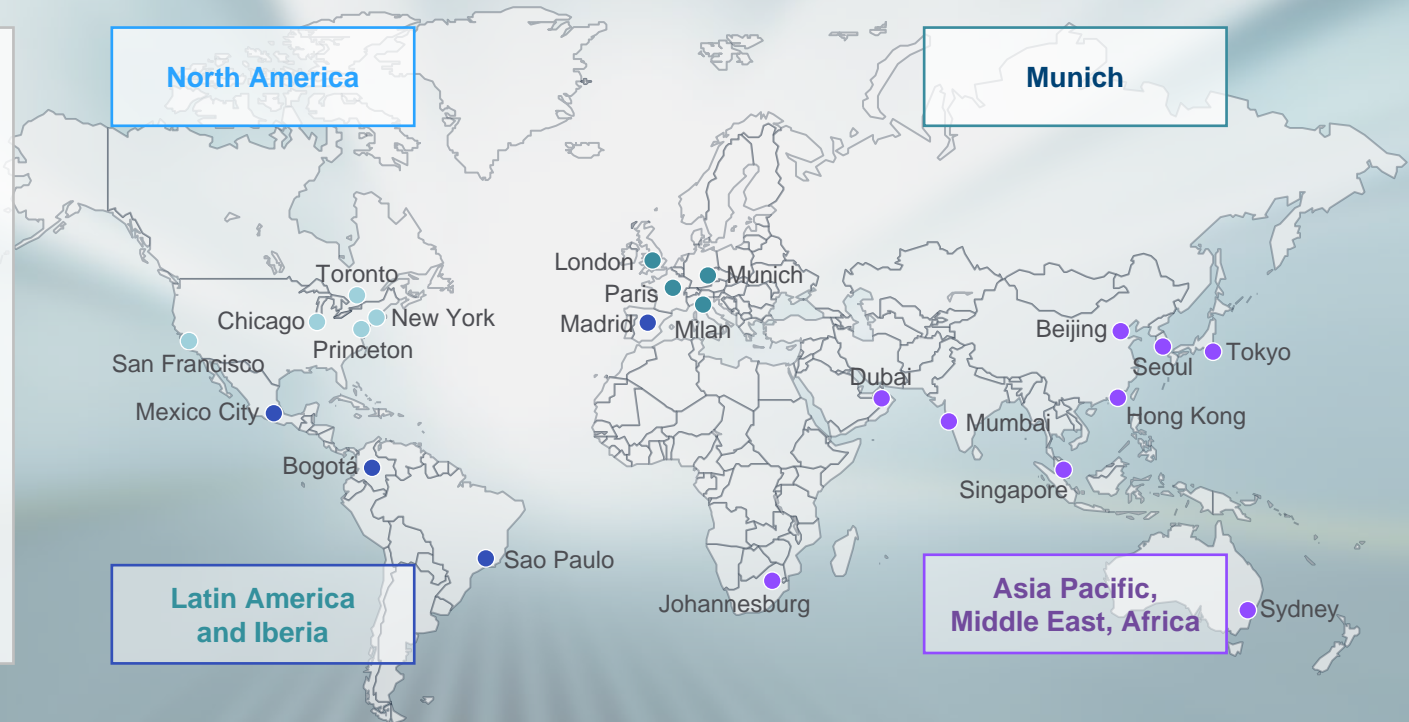
All offer products and solutions **ACROSS ALL LINES**

COMPETENCE CENTERS FOR CYBER AND ENERGY are located in Munich

Munich

Latin America and Iberia

Asia Pacific, Middle East, Africa

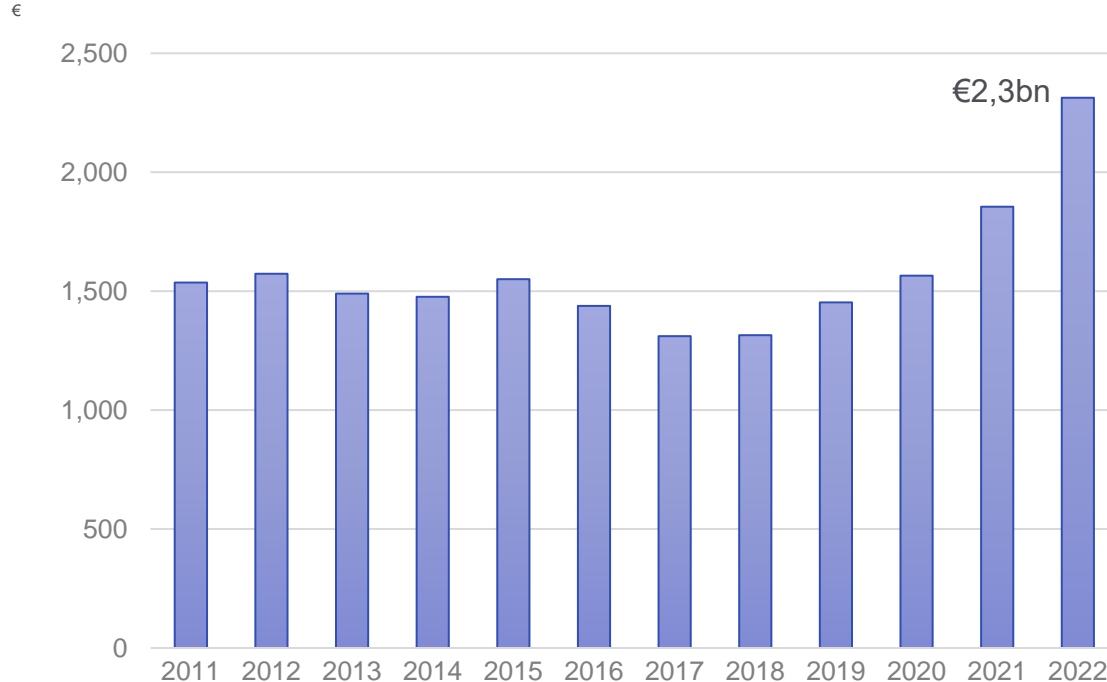


Munich Re Group : EPI €67 billion(2022)

How much is engineering premium?

Engineering : Treaty + Facultative

MR Group EPI (€67bn)



- ❖ Engineering premium of €2.3bn in 2022 at Combined Ratio of 78.8%
- ❖ Engineering is 3.5% of MR Group premium (€67bn)
- ❖ U/W margin of 21.2% thus €490mio = 14% profit contribution of €3.5bn MR Group
- ❖ About 33% (€760mio) of traditional engineering reinsurance is facultative business

Insurance risk landscape

02

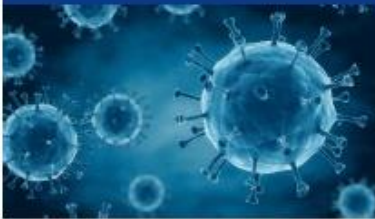


Insurance risk landscape 2022

Climate Change /
Natural Catastrophes 




New COVID variant 




Labour shortage 




Supply Chain 




Persistent high
inflation 



Regulatory and
Compliance 




Advance in
technology 




Geopolitical risks 



Business
insolvency rate 



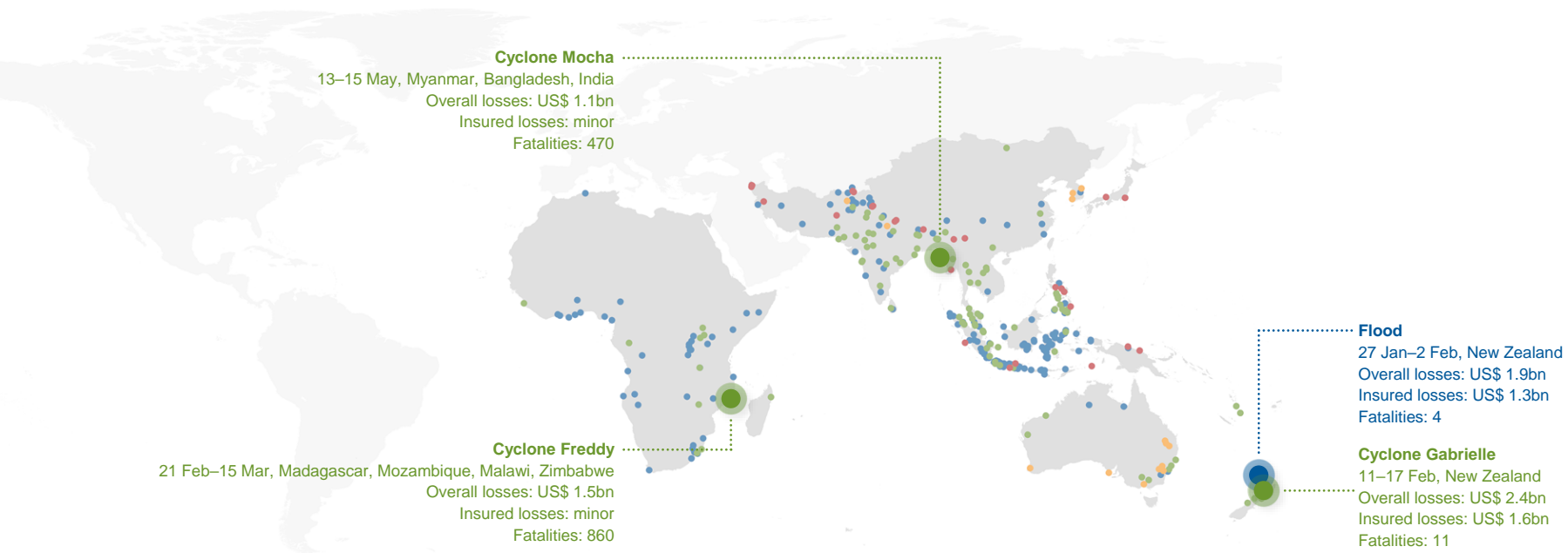
Cyber 



Source : IMIA Conference 2022, What happened in the Engineering Insurance Market in the last 12 Months?

Nat Cat loss events in Asia Pacific Africa January – June 2023

Natural disaster caused overall losses of US\$8.8bn



Geophysical events
Earthquake, tsunami, volcanic activity

Meteorological events
Tropical storm, extratropical storm, convective storm, local storm

Hydrological events
Flood, mass movement

Climatological events
Extreme temperature, drought, wildfire

Significant catastrophes (based on the number of fatalities, overall and insured losses)

Small, medium and large loss events

1 The figures for the earthquake event in Turkey and Syria have been allocated to Europe. Overall losses include direct losses. Currency conversion with the end-of-month exchange rate.
Source: Munich Re, NatCatSERVICE, July 2023

Risk Landscape 2020 to date South Africa

SANTAM ADMITS KZN APRIL FLOODS THE BIGGEST DISASTER ITS EVER HAD TO DEAL WITH

The insurance company looks set to pay billion of rands in claims.



TimesLIVE

<https://www.timeslive.co.za> » news » consumer-live

Santam must pay 18 months (not three) in Covid-19 ...

07 Oct 2021 — Santam must pay 18 months (not three) in Covid-19 business interruption claims ... Santam finally agrees to assess business interruption claims.



SASRIA'S LIABILITIES EXCEEDING ITS ASSETS IN WAKE OF CLAIMS FROM JULY RIOTS

It is the only insurer in the country offering coverage for damage from special risks such as riots, strikes, terrorism and public disorder.



Before the coronavirus disease 2019 (COVID-19) pandemic in early 2020 the unemployment rate in South Africa was at its highest in history at 29.1%. During the COVID-19 pandemic to date, unemployment rose ever higher to 35.3%.

News24

[On the brink of Stage 7: Erratic coal power stations may push SA over the edge | Business](#)

South Africa has returned to the brink of Stage 7 amid freezing weather, power plant breakdowns and increased maintenance.

Fundamentals of engineering insurance

03



Manhole??





Image: credits to Deutsches Museum München

- 19th century Industrial Revolution in England marks the origin of engineering insurance
- 1854 foundation of Manchester Steam Users Association
- 1859 foundation of the Steam Boiler Assurance Company
- 1866 Hartford Steam Boiler Inspection & Insurance Company was founded
- 1900 introduction of the Machinery Insurance by Allianz AG, invented by Munich Re
- 1924 launch of the EAR insurance by Allianz with Munich Re support
- 1929 first record of Contractors' All Risk insurance for Lambeth Bridge across the Thames in London

- Wide range of risks in terms of values / period / technology
- Indemnity for sudden and unforeseen physical loss
- All Risk / Named Perils policies
- Project (Construction / Erection) – Operation
- Multitude of different hazards
- UW requires technological know-how

Main classes & exposures

04



Cover for construction or erection (Project)



CAR – Contractors all Risk

- Infrastructure projects (tunnels, roads, bridges)
- Building complexes
- Hydropower projects
- Wet structures (dams, land reclamation)



EAR – Erection All Risk

- Industrial complexes
- Refineries
- Power plants
- Steel mills
- Cement factories



CEAR – Construction & Erection All Risk

- Combines EAR and CAR policy into one policy



CPI – Comprehensive Project Insurance

- Combines EAR and CAR policy into one policy
- Extended by Marine Cargo (DSU)

Cover for loss of profit



MLoP – Loss of Profit Insurance (Business Interruption)

Loss of gross profit due to physical damage indemnifiable under operational power



ALoP/DSU – Advanced Loss of Profit/Delay in Start-up

Loss of gross profit due to a delay in completion as a result of physical damage indemnifiable under operational power

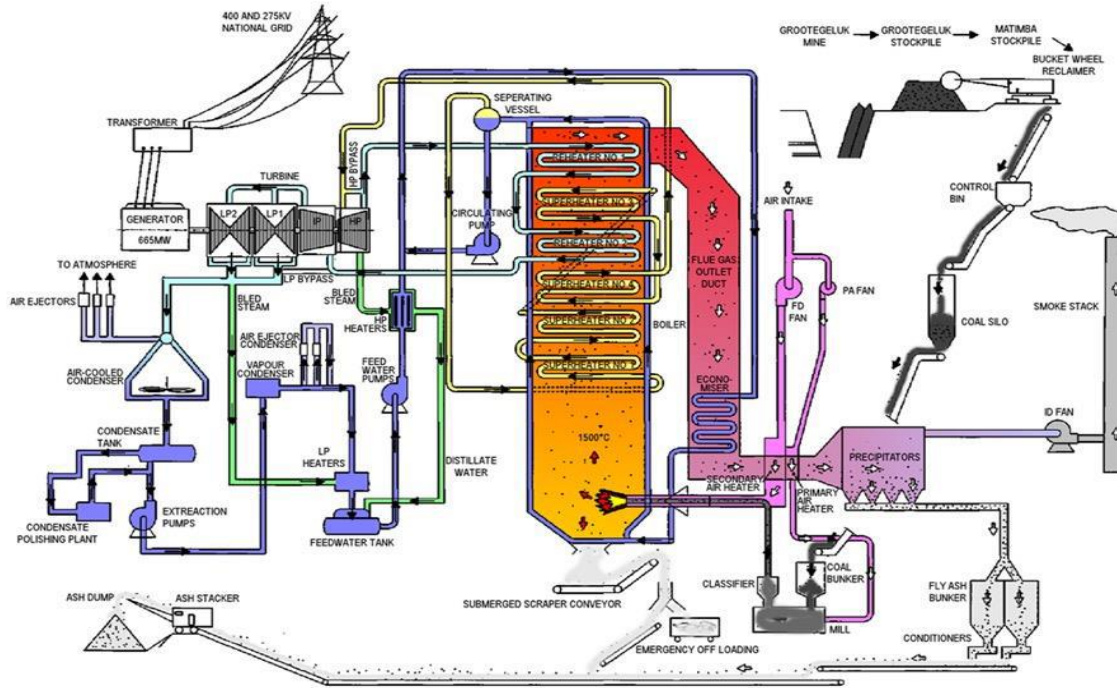
Special covers



- **IDI** – Inherent Defects (Decennial or quinquennial liability)
- Technological risks
- Offshore risks
- Cost overrun

Equipment characteristics & exposures

Typical 600MW coal fired power plant



Exposures:

- ❖ Fire, explosion, high speed rotating equipment, high temp/pressure steam, electrical shock, chemical spillage, emissions. Other environmental impacts.
- ❖ Mechanical failure, civil structure collapse.
- ❖ Physical harm, human error, sabotage.
- ❖ Natural perils.
- ❖ Terrorism.



Image: used under license from shutterstock.com

Engineering typical exposures

- Design incomplete
- High development frequency
- Early launching of products
- Construction / erection design / details novel
- Construction / erection method new or inappropriate
- Materials unproven or behaviour unknown
- Lack of skill
- Lack of control
- Vulnerability to natural hazards

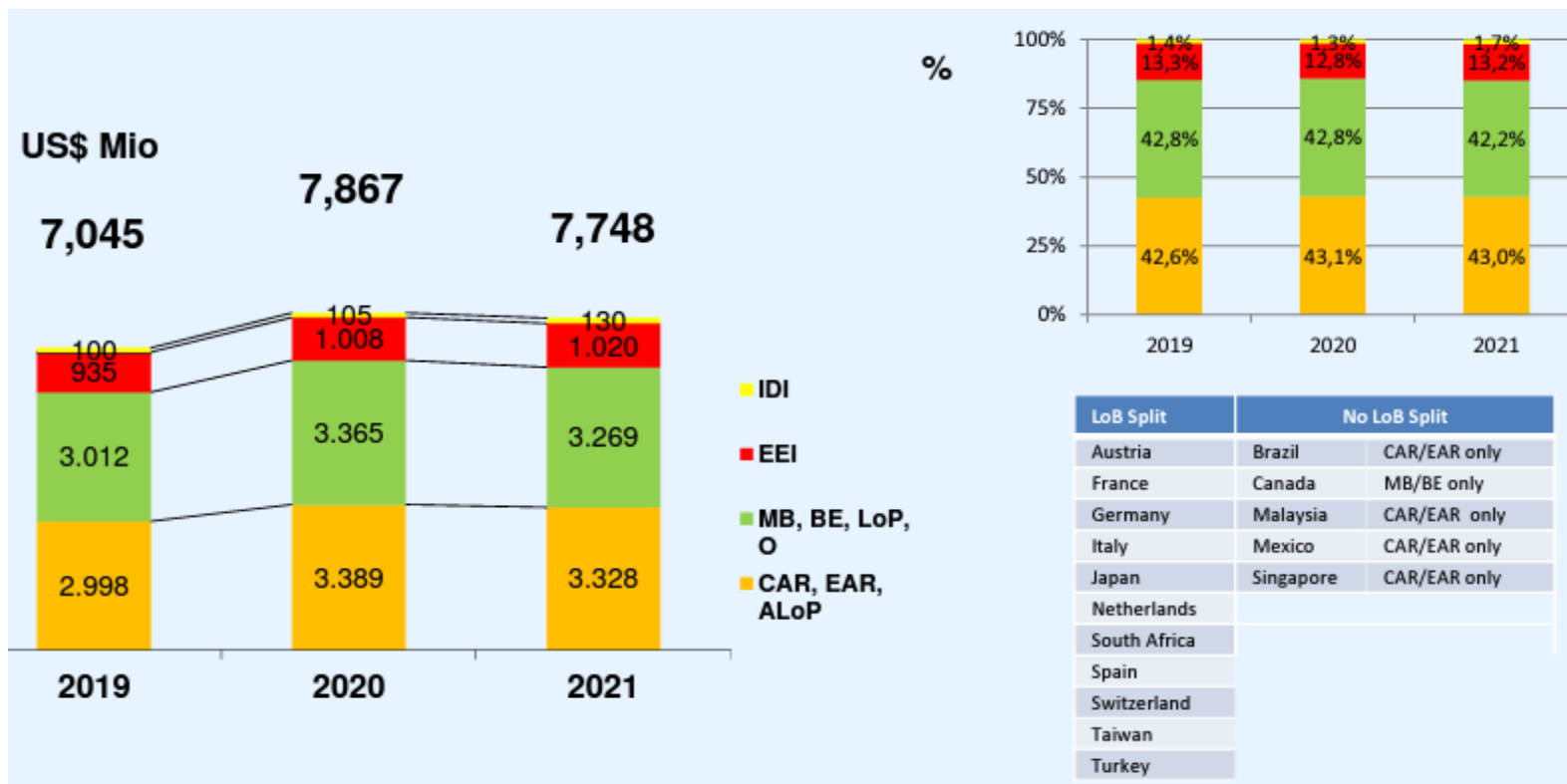
Premium & loss statistics

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Development of premiums 2019 – 2021

IMIA stats



Premium & loss statistics



Major Construction Losses > USD100m

OCY	Loss Estimate and changes from 2021 (US\$ m)	Project/Location
2021	120 (new)	GazProm Gas Plant Fire, Russia
2021	100	Tapovan HPP Avalanche, India
2021	100 (new)	Marcobre Mine, Peru
2020	180	LNG Plant in US (two losses), USA
2020	130	Pensacola Bridge Sally Hurricane, USA
2020	110	New Hospital fire, Kuwait
2019	from 340 up to 430	Convention Centre fire, New Zealand
2019	100	Haramain high-speed rail station fire, Saudi Arabia
2019	230	Refinery (2 losses), Malaysia
2018	from 1,400 down to 1070	Ituango HPP, Colombia
2018	From 410 to 310	Kuwait National Petroleum (3 losses), flood
2018	From 100 to 45	Abu Dhabi Airport, UAE
2018	210	Genua Bridge collapse (CECR), Italy
2017	100	Chicago Bridge, USA
2017	From 511 to 490	T24 Boiler defective loss in Europe (4 losses)
2017	150	Macau Casino fire
2017	120	HPP loss in British Columbia, Canada
2017	100	Glasgow School of Art, Fire in UK
2017	110	LNG, Hurricane Harvey in US
2016	430	Two LNG projects in Australia

Disclaimer:

Market estimates of loss amounts in the public knowledge as at today 19/09/22 as collected by IMIA. The figures are estimates/approximations as at such date and may have now changed.

IMIA (and Swiss Re) does not accept responsibility for the accuracy of the estimated loss amounts.

Main causes of construction losses



Based on analysis of 29,640 insurance industry claims between January 1, 2016 and December 31, 2020 with an approximate value of €11.3bn (US\$12.8bn). Claims total includes the share of other insurers in addition to AGCS.

Source : Allianz Global Corporate & Speciality

Key trends & dynamics

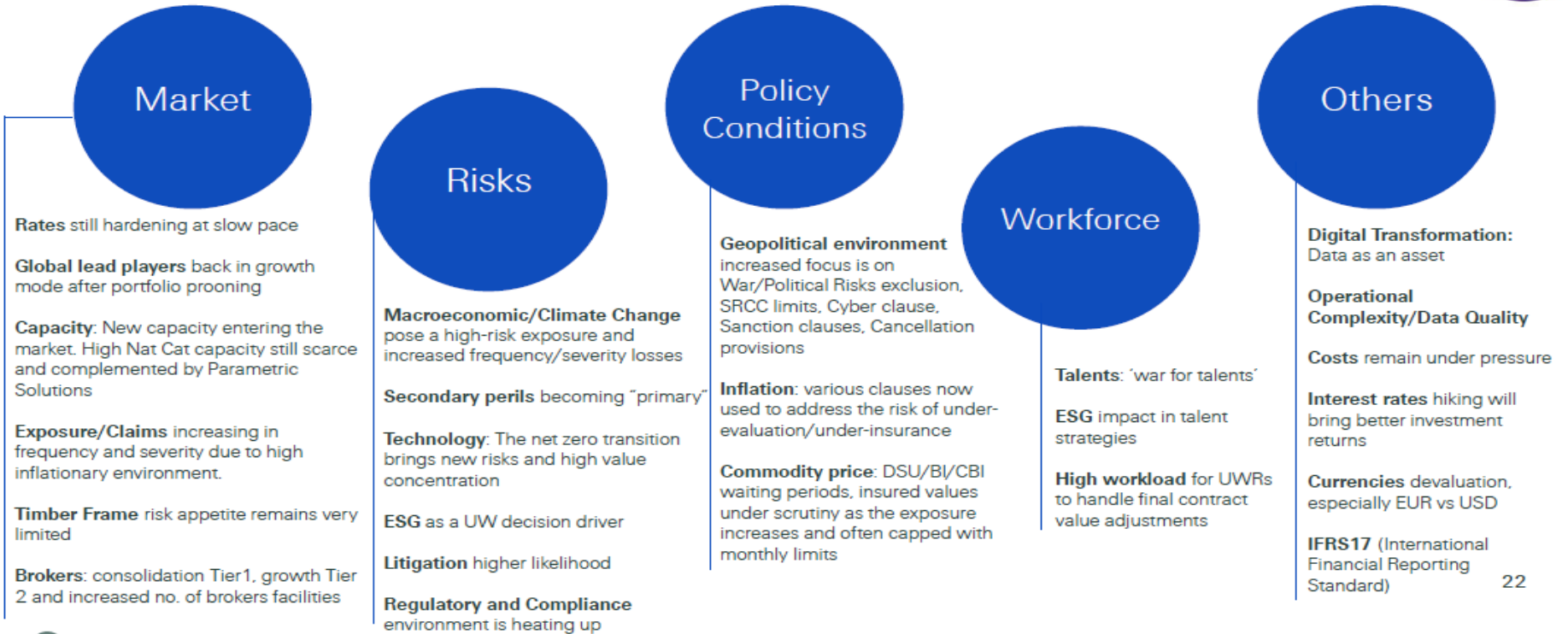
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Insurance Construction Market

Key Trends & Dynamics in 2022



Thank you for your attention!

Philani Mbatha

NOT IF, BUT HOW

