



Global Market Stats & Benchmarking
2021IRCI
ILORI
IMLIRate Changeannounced @ 52nd IMIA conference
Vienna, 2019IMLIIOSs Ratio
Mega LossIndexITOLType of Loss



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Supply & Demand

Link between:

construction investments (= demand)
&
available PML capacity (= supply)





Global GDP and Global Construction investments correlate

GDP (constant 2010 US\$)



Industry (including construction), value added (constant 2010 US\$)

World Bank national accounts data, and OECD National Accounts data files. License : CC BY-4.0 ①





...but GDP contribution of construction is shrinking

Industry (including construction), value added (% of GDP)

World Bank national accounts data, and OECD National Accounts data files.

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Financial Crisis impacted global growth in construction disproportionately

GDP growth (annual %)



Industry (including construction), value added (annual % growth)

World Bank national accounts data, and OECD National Accounts data files.



Cycle Anticipation

=

Supply/Demand Monitoring

- PML capacity (supply) +30-50% 2008-2013
- Investment (demand) collapsed 2008-2013

 \rightarrow increased completion (softening t&c) to maintain premium volume

BUSINESS INSURANCE

RISK MANAGEMENT WORKERS COMP INTERNATIONAL RESEARCH & REPORTS PEOPLE EMPLOY

Risk Management

Lloyd's construction consortium offers capacity of \$166 million

Sarah Veysey

May 13, 2013

GDP'S EVOLUTION SHOULD KEEP CONSTRUCTION OUTPUT GROWING UNTIL 2021

Total construction output and GDP variation



Source: Euroconstruct, Eurostat



To keep premium volume with dropping rates exposures were increased

"enjoy" the next 60 min to capture the context

Share of global engineering premiums, by region (USD billion





Survey findings

- IMIA Survey 2021 overview
- 2021 Stats PWG news





IRCI / ILORI / IMLI / ITOL – in accordance with IMIA's Anti Trust Statement

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Revised Anti-Trust statement – July 2004

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The International Association

of Engineering Insurers

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Mission

"IMIA & PERILS produce reference points which help the engineering insurance markets to benchmark their activities"





What is the global engineering market premium?

2021 contributions – 60% of IMIA members

ILORI 2021 & sigma 2018

- project/ annual 50:50 (IMIA 60:40)
- Global GWP \$20-30bn (IMIA ~ \$9bn)

ILORI 2021

- ~ 10% market premium represented (almost \$2bn)
- 12 (6) markets contributing

IRCI 2021

- ~ 10% market premium represented (almost \$2bn)
- 14 markets contributing, global/regional 90:10 (60:40)

IMLI 2021

130 losses since the 90ies (xs \$30m FGU incl indexation)

ITOL 2021 - NEW!

- 7.5% market premium represented (< \$1.5bn)
- 14 markets contributing, global/regional 90:10 (60:40)



IMIA stats ± 20 country associations. No London market, limited USA/Germany, no China etc.)

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https://www.imia.com/premium-and-loss-statistics/
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https://www.swissre.com/institute/research/sigma-research/sigma-2018-02.htr

Territorial scope	
Regional/Local	11%
Global	89%

Portfolio split	
Direct & Fac Mrkt	63%
Treaty Market	37%

P'folio composition	n
Operational / Annual*	29%
Project (incl. annuals)**	69%
IDI	2%

Market Size GWP [USD]		
< 10 bil	2	
10 bil - 20 bil	4	
20 bil - 30 bil	4	
> 30 bil	1	

y (Comp.	GWP	weight
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Market GWP compositio	n
Operational / Annual*	41%
Project (incl. annuals)**	49%
IDI	5%



What's new in 2021?

- Questionnaire 3 in 1
- IRCI ILORI correlation
- ITOL
- ITOL IMLI correlation
- Feedback poll



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IMIA Annual Engineering Market Survey

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Introduction

Background

The INIIA Engineering Market Survey has been annually performed, since 2017, in order to monitor and provide the Engineering market with information The INIIA Survey 2021 includes 3 studies to further its analysis, understanding and monitoriting of the Engineering Market. 1 Loss Ratio Benchmark (ILORI) 2. Rate Change Index (IROI) 3. Global Type of Loss Survey (New - ITOL)

Tab Overview

See below a brief description of the purpose for each of the sections that you are required to fill out during this survey. There is further instructions available in each tab explaining what is needed to complete each section.

1. Company Dyerview High-level information is gathered about each contributor to better understand their position and focus in the market.

2. Loss Ratio Survey The incurred loss ratio triangle for each contributor is calculated in this tab. Individual triangles from each contributor will then be aggregated allowing us to monitor the development of the engineering market by UWY.

 Global Market This section is to understand the scale and composition of the global engineering market.

4. Bate_Change_Survey Historical rates are collected in this tab split by various sub-groups. The results from individual contributors will be combined allowing us to create a rate change index for the eningeering market.

5. Global Tol Survey (NEW)

In this section contributors are requested to enter the composition of their historical aggregate incurred claims split by type of loss. This will highlight perils that are a significant driver of losses in the market allowing underwriters to adapt accordingly.

<u>Data Requirements</u>

The following data sources will be needed to complete the survey:

- 1. Gross premium triangle by UWY for your combined engineering portfolio for UWY's 2008-2020
- Gross incurred loss triangle by UWY for your combined engineering portfolio for UWYs 2008-2020.
 house debine data (and WW) losses. 2020.

3. Incurred claims data for UWYs 2008 - 2020.

We understand the availability of data format and basis will vary by contributor. Please enter the basis of your triangle in the comment bow in the tab "Loss<u>Batio_Survey" if different to that requested</u>

Data Input -->

Introduction



Lo

Company_Overview

М.

IRCI

The established qualitative uwy market rates benchmark





- The IRCI (IMIA Rate Change Index) is an index published by IMIA for the engineering market for the period 2002 2021 which has been published annually since 2019.
- It is segmented by sub-line and by territorial scope (regional/global).
- As the list of contributors varies every year, we would expect some slight deviations in the historical figures with the same overall trend.
- Contributors are requested to enter the rate per mill they would have charged for a risk (split by sub-line) at 6 historical points in time. As well as an expectation for the forthcoming year.
- The index level is set to 100 for the UWY 2010 and the rate change is calculated for each year relative to this benchmark.
- A simple average is used when combining the results of the individual contributors.

IRCI 2021



IRCI 2021vs2020



Note: No data point was collected for the 2018 UWY last year.



IRCI Results – Global vs. Regional Comparison

Global



Regional

- Regional clients continue to experience rate decreases while global clients are experiencing significant rate increases.
- Regional clients not impacted to the same degree as global companies by the large market losses in recent years.

IRCI Results - Project Vs. Operational Comparison

Project





Note: No data point was collected for the 2018 UWY last year.

- The results suggest a more gradual decrease in rate and a quicker recovery when compared to last year's survey.
 - The curves for both operational and regional business are significantly flatter when compared with last year.
 - Observed rate increases have been higher than expectation for UWYs 2019, 2020 and 2021 for global and project business.
- No data point was collected for the 2018 UWY in last year's survey and this will cause some distortion in the curve.
- In UWY 2021, the index is at a level equivalent to the UWY 2011/12 (92.36) when taking a simple average across all sub-lines. This in comparison to a level of 126.9 in the UWY 2002.

ILORI

The NEW market Loss Ratio benchmark





UWY loss ratio development

- ✓ Last diagonal represents the current Incurred/Written premium position
- ✓ "jumps" in development driven by Large Loss e.g. uwy '10, '11, '14-16
- ✓ UWY 2015 to 2016 already show loss ratio above 65% and are expected to deteriorate further
- UWY 2017 to 2020 below 60% for now
- ✓ Young UWYs show higher loss ratio quicker than older UWY

- ✓ Contributors: 13
- ✓ Premium volume: 1,660 m\$

	devV 1	devV 2	devV 3	dev/V 4	devV 5	dev/V 6	devV 7	dev/V 8	dev/Y 9	devV 10	devV 11	devV 12	dev/V 13
0001	25 020/	27.000/	40.000/	GO 000/	GE 000/	GE 420/	C1 000/	00010		0.720/	74 540/	00 050/	CO 500/
2008	35.03%	37.96%	48.36%	52.90%	55.00%	55.13%	61.90%	65.71%	69.62%	68.73%	/1.51%	69.65%	68.52%
2009	20.43%	31.44%	36.05%	37.03%	39.26%	41.14%	40.56%	42.49%	41.52%	41.02%	40.98%	43.29%	
2010	19.41%	38.87%	50.35%	55.36%	53.87%	60.86%	60.79%	60.11%	65.23%	65.02%	63.81%		
2011	21.96%	34.32%	43.66%	55.85%	49.04%	60.40%	60.06%	103.86%	114.93%	113.85%			
2012	19.27%	37.45%	41.67%	47.74%	52.79%	55.08%	57.78%	59.54%	59.62%				
2013	21.49%	33.91%	43.38%	53.58%	58.12%	57.91%	61.92%	60.42%					
2014	18.87%	32.56%	40.79%	48.16%	62.97%	67.20%	64.60%						
2015	19.82%	32.34%	37.89%	47.22%	62.75%	65.18%							
2016	21.23%	35.35%	59.39%	59.64%	65.64%								
2017	27.11%	41.39%	55.94%	56.32%									
2018	25.07%	38.28%	✓ 53.58%										
2019	24.35%	34.84%											
2020	23.14%												
avg=	22.86%	35.73%	46.46%	51.38%	55.49%	57.86%	58.23%	65.35%	70.18%	72.15%	58.77%	56.47%	68.52%
StDev=	4.42%	3.05%	7.62%	6.52%	8.17%	8.03%	8.06%	20.45%	27.20%	30.39%	15.88%		

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UWY loss ratio development



IRCI ILORI

How they play together Long-term & late development to ULR







- ✓ 2018 UWY: Lowest Rate level and high Incurred Loss Ratio to date (54%)
- ✓ Rate change increasing steadily and currently at the level of 2012 UWY
- ✓ UWY 2012 incurred Loss Ratio to date is 60%
- ✓ Negative correlation between Rate Level and Ultimate Loss ratio
- ✓ Large losses explain jump in UWY 2011 and UWY 2015



IMLI

The NEW Mega Loss Index

- FGU losses xs \$30m since 1990ies
- About 130 losses in total 12.35bn USD was reviewed
- CAR/EAR (for the time being)
- Agg. Losses per uwy & occ. year
- Best estimate figures FGU.
- Split by
 - NATCAT
 - Geography
 - Type of Risks
 - Type of Losses





Increase of CAR/EAR Mega Large Losses/Occurrence Year



Increase of CAR/EAR Mega Losses /Occurrence Year



- Frequency of Mega Large Losses has been increased since 2010 Occurrence Year
- The harsh increase of mega large losses in 2018 was a turning point
- 2021 not yet finished
- The financial results remain under pressure due to impact of increasing mega large losses and long soft market

Increase of CAR/EAR Mega Losses/UWY



Increase of CAR/EAR Mega Losses/UWY



- Frequency of Mega Large Losses has been increased since 2006/2007 UWY
- The same way Aggregate large losses is increased through severity and frequency
- There is clear trend of increasing large loss ratio as per UWY basis
- More recent UWYs to be developed

NATCAT/Man-Made Split Between Type of Risk

NATCAT/Man-Made Split Between Type of Losses

A few examples what IMLI can provide NATCAT/Man-Made



NATCAT/Man-Made Split Between Regions



NATCAT/Man-Made Losses Frequency concerns more than severity



A few examples what IMLI can provide **Territory**





A few examples what IMLI can provide **Type of Risk**

ALOP/DSU Losses PD Losses Wind Wind Rainflood/Waterdamage 5% 7% 5% Breakdown 14% Rainflood/Waterda Collapse mage 17% 21% Corrosion/Coating Ground conditions nsulation/Paintin foundations / 6% Landslide Electric-failure Collapse 6% 21% 38% Fire/Explosion 29% **Total Losses** 100% Wind 90% 7% 80% 70% Rainflood/Waterdamage 60% 16% 50% Collapse 23% 40% 30% ALOP/DSU Loss 20% TPL Loss 10% PD Loss Ground conditions 0% foundations / Landslide sllan 5% Corrosion/Coating/Ins Painting 5% Fire/Explosion 26%

A few examples what IMLI can provide **Type of Loss**

ITOL

The NEW Type of Loss Index





The NEW Type of Loss Index

- 14 usable data sets
- Aggregated losses of USD 10.5bn
- Total Losses from 2008 2020
- Across Operational*/ Project**/ IDI

*Operational / Annual includes, but not limited to, EEI, MB, CECR, DOS, CPE/M, BPV, IAR (Industrial All Risk), OAR (Operational All Risk)

**Project (incl Project annuals), includes but not limited to, CAR/EAR including annual project covers (World-wide Open Covers, annual contractors etc.)

Market GWP Composition Weighted by Aggregated Lo	on % Split
Operational / Annual	47%
Project (incl. annuals)	41%
IDI	7%
Total (missing responses	s) 95%
Territorial Scope	% Split
Regional/Local	22%
Global	78%
GWP [USD] Respons < 50 mil	
150 mil - 200 mil	0
> 200 mii	4
Aggregated Loss (USD)	Responses
< 10 m	3
< 100 m	1
< 1 hn	9

< 10 bn

The NEW Type of Loss Index

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**Project (incl Project annuals), includes but not limited to, CAR/EAR including annual project covers (World-wide Open Covers, annual contractors etc.)

Type of Loss	% Split
1. Meteorological	25.9%
Wind incl. Storm Surge	6.5%
Waterdamage Internal	4.0%
Waterdamage External / Flood	10.5%
Heavy Snowfall/ Hail/ Ice	0.5%
2. Static	11.7%
Collapse	6.4%
Ground Conditions/ Settlement/ Subsidence/	
Landslide/ Rockfall	2.8%
EQ	2.5%
3. Chemical	14.7%
Fire/ Explosion	13.1%
Corrosion/ Coating/ Welding/ Boilers	1.6%
4. Human	14.7%
Faulty Design & Workmanship	11.3%
Vandalism/ Theft/ SRCC	3.2%
5. Material	19.8%
Electric-Failure	5.3%
Mechanical Breakdown	14.5%
6. Other, e.g. TPL, COVID, Bodily injuries etc.	13.2%
Total:	100.0%

ITOL

- Aggregated losses of USD 10.5bn
- Total Losses from 2008 2020
- Across Operational/ Project/ IDI

IMLI

- Aggregated losses of USD 12.3bn
- Total Losses from 1991 2021
- CAR/ EAR (Project) only



ITOL vs IMLI

ITOL

- Aggregated losses of USD 10.5bn
- Total Losses from 2008 2020
- Across Operational/ Project/ IDI

IMLI

- Aggregated losses of USD 12.3bn
- Total Losses from 1991 2021
- CAR/ EAR (Project) only

	ITOL	IMLI
1. Meteorological	25.9%	24%
Wind incl. Storm Surge	6.5%	7%
Waterdamage Internal	4.0%	1%
Waterdamage External / Flood	10.5%	16%
Heavy Snowfall/ Hail/ Ice	0.5%	0%
2. Static	11.7%	31%
Collapse	6.4%	23%
Ground Conditions/ Settlement/ Subsidence/ Landslide/ Rockfall	2.8%	6%
EQ	2.5%	2%
3. Chemical	14.7%	35%
Fire/ Explosion	13.1%	26%
Corrosion/ Coating/ Welding/ Boilers	1.6%	10%
4. Human	14.7%	2%
Faulty Design & Workmanship	11.3%	2%
Vandalism/ Theft/ SRCC	3.2%	0%
5. Material	19.8%	8%
Electric-Failure	5.3%	5%
Mechanical Breakdown	14.5%	4%
6. Other, e.g. TPL, COVID, Bodily injuries etc.	13.2%	0%

ITOL vs IMLI

Conclusions





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Key take away

- ~ 10% market premium represented (almost \$2bn)
- 18 markets contributing, global/regional 90:10

IRCI 2021

- global Ø on level of ~ uwy 2011/12
- +31% Ø growth since uwy 2018
- **D&F** rate increase > **Local** rate increase

ILORI

- <u>negatively correlated</u> to **IRCI**
- Young UWYs show higher loss ratio quicker than older UWY
- UWY 2015 to 2016: loss ratio above 60% and are expected to deteriorate further



Key Take Away 2

IMLI 2021

- Frequency and Severity of Mega Losses increased since 2006/2007 UWY
- Trend of increasing large loss ratio as per UWY basis
- More major drivers compared to ITOL

ITOL 2021

- driver meteorological
- **ITOL/IMLI 2021:** common driver meteorological

IRCI/ILORI/IMLI 2021

- Rates reacted massively on occurrence year 2018
- Rate Change in 2021 has been higher than planned in 2020





"IMIA makes the complex engineering insurance market tangible"

Mission

IRCI/ILOP

"IMIA & PERILS produce reference points which help the engineering insurance markets to benchmark their activities"



PERILS Data collected, anonymized, validated, aggregated,

handed over to IMIA (Antitrust & GDPR compliant)

Data processing

IMIA Indices

IRCI, ILORI, IMLI

Data call

(Re-) Insurance

Companies



Questions ?





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Appendix - Abbreviations

IRCI	IMIA Rate Change Index
ILORI	IMIA Loss Ratio Index
IMLI	IMIA Mega Loss Index
uwy	Underwriting Year
Occ.	Occurrence
FY	Financial year
iLR	Incurred loss ratio
ULR	Ultimate Loss Ratio
CR	Combined Ratio
LL	Large Loss
ML	Mega Loss
Ø	Average
D&F	Direct & facultative
Neg.	Negative
MGA	Managing General Agency
Fac	Facultative
у	Year

CAR	Contractors all risk
EAR	Erection all risk
ALOP/DSU	Advanced Loss of profit / Delay Start up
MB	Machinery Breakdown
LOP	Loss of profit
EEI	Electronic Equipment Insurance
SRe	Swiss Re
FGU	from ground up
XS	in Excess of
T24	Boiler steel alloy
LNG	Liquified Natural Gas
Agg	Aggregate
MD	Material damage

