

## Economic Insights

### Natural catastrophe resilience: three quarters of global exposures unprotected

#### Key takeaways

- The global SRI Natural Catastrophe Resilience Index was little changed at 24% in 2020.
- Three quarters of the world's potential losses from natural disasters remain under-insured.
- Five of the most resilient countries in the world are in advanced Europe.
- The US and Japan have the highest absolute natural catastrophe protection gaps in the world.
- Resilience across the emerging markets has remained low since 2000.
- Emerging APAC is the least resilient region, with over 96% of natural catastrophe losses unprotected.

#### About Economic Insights

Analysis of key economic developments and their implications for the global re/insurance industry.

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#### In a nutshell

Natural catastrophe resilience remained low in 2020. The global protection gap was USD 231 billion, a new high. Improvements in global resilience since 2000 have been driven by advanced markets. Emerging markets, however, have become less resilient as economic growth has outpaced expansion of insurance reach.

The global SRI Natural Catastrophe Resilience Index (NatCat I-RI)<sup>1</sup> remained low at 24% in 2020, little changed from the previous year. This indicates that around three quarters of the globally-modelled annual expected losses from wind, flood and earthquake hazards are not covered by private insurance. The global natural catastrophe protection gap from these risks was USD 231 billion in 2020, a record high. Overall, 4 billion people around the world live in countries that are highly under-protected against natural perils. The US has the largest natural catastrophe protection gap in the world, and next is Japan.

The world has become just marginally more resilient to natural catastrophes since the turn of the century, and the pace of improvement has slowed since 2010 (see Figure 1). Further, the improvement has not been universal, with the strengthening since 2000 driven predominantly by the advanced markets. Advanced EMEA is the most resilient region (aggregate index of 44%). Denmark, France, the UK and Switzerland are Belgium are all in the world Top 10 of most resilient (see Table 1). This reflects existence of robust private insurance and national disaster protection sectors, helping businesses and homeowners to manage the financial fallout from natural catastrophes. Nevertheless, some other European countries are among the least resilient. Italy, for example, ranks 24 globally with the largest protection gap in Europe. This is in due to the country's high exposure to seismic risks in particular, but low levels of insurance penetration (premiums as a % of GDP).

The aggregate resilience index for North America stands at 40%, the second highest by region, due to high levels of insurance penetration in the US and Canada. That said, there has been just marginal improvement in resilience over the last 10 years. The US specifically ranks 12<sup>th</sup> most resilient globally (index of 41%) and in absolute terms, it has the biggest natural catastrophe protection gap of all countries (USD 45.8 billion in 2020). Earthquake risk makes up the majority of protection gap in the US, followed by tropical cyclones and floods. While the US has high levels of insurance penetration, it is also the world's largest economy with high accumulation of property asset exposures. In advanced Asia Pacific, the natural catastrophe index for New Zealand is 73%, making it the third most resilient country in the world. This is

<sup>1</sup> The SRI resilience index measures the relation between protection needed and available. By estimating the contribution of insurance in covering losses after a natural catastrophe the index measures progress in building societal resilience. The score ranges from 0-100%. See [sigma Resilience Index 2021: a cyclical growth recovery, but less resilient world economy](#), Swiss Re Institute.

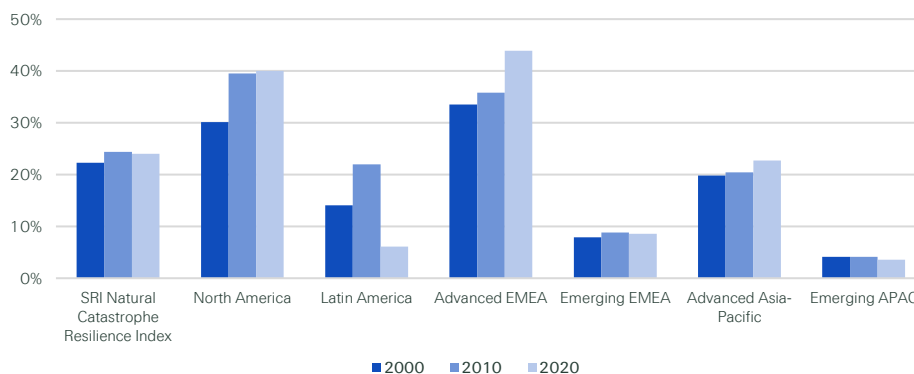
mostly due to earthquake insurance being compulsory, that in a country where seismic risk is the main catastrophe exposure. In Australia, efforts to increase flood insurance uptake has strengthened overall resilience there. Japan, meanwhile, ranks 17, with an index reading of 21%. Japan has the second largest natural catastrophe protection gap globally (USD 30.6 billion). Like New Zealand, Japan is one of the most earthquake-prone countries in the world. In contrast, however, insurance penetration for seismic risks is low.

**Table 1:** Natural catastrophe resilience index and protection gap

Country	NatCat I-RI		Protection Gap
	Index (%)	Rank	USD bn
Denmark	83	1	0.1
France	79	2	0.8
New Zealand	73	3	0.2
Australia	69	4	0.5
United Kingdom	69	5	1
Poland	60	6	0.1
Switzerland	59	7	0.6
Israel	53	8	0.3
Belgium	51	9	0.5
Czech Republic	50	10	0.1
Austria	41	11	0.4
United States	41	12	45.8
Germany	36	13	2.1
Netherlands	31	14	0.9
Turkey	30	15	2.3
Chile	29	16	0.9
Japan	21	17	30.6
Portugal	21	18	0.2
Colombia	19	19	0.4
Canada	16	20	2
Mexico	16	21	4.5
Ecuador	15	22	0.3
South Africa	15	23	0.3
Italy	12	24	4.2
Taiwan	10	25	4.2
Peru	10	26	0.6
Uruguay	10	27	0.1
Philippines	7	28	2.9
Brazil	6	29	0.4
China	5	30	20.6
India	5	31	2.6
Indonesia	5	32	3
Greece	3	33	0.6

Resilience index score (%)  
<25 25 to 50 50 to 75 >75  
 Source: Swiss Re Institute

**Figure 1:** Natural catastrophe resilience index (2000-2020)



In emerging APAC and Latin America, aggregate levels of resilience in 2020 were lower than in 2000. This is mainly because strong economic growth in the regions' markets since has outpaced the development of the private insurance sector. In the fastest growing Asian emerging markets such as China, India and Indonesia, we estimate that only around 5% of physical assets are insured against the major natural perils. In Latin America, insurance penetration rates are somewhat higher. Notably so in Chile, on account of high penetration of earthquake insurance (about 30%). Emerging APAC is the least resilient region, with an aggregate score of 3.6%, implying that over 96% of losses are unprotected. Indonesia, India, China and the Philippines are among the least resilient to natural catastrophes. In China, flood risk comprises nearly half of the expected uninsured losses.

Natural catastrophes pose a major threat to societies. Economic losses from storms and flood catastrophes will increase as a consequence of climate change, particularly in emerging markets, where loss mitigation and adaptation still lag. To improve global resilience, however, more can be done to broaden insurance reach and loss mitigation measures, even in advanced markets with already higher levels of insurance penetration.

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