

# sigma

---

**Resilience Index 2021:  
a cyclical growth recovery, but  
less resilient world economy**

# Executive summary

## Macroeconomic resilience

- We expect partial recovery in global macro resilience this year from a near-20% weakening in 2020, but a not a full rebound to pre-pandemic levels.
- Our forecast SRI Macroeconomic Resilience Index for the whole world in 2021 is 0.49, stronger than 0.44 in 2020, but below 0.54 in 2019 before COVID-19.
- Shock absorbing capacities will remain below pre-pandemic levels across all but one economy (Chile).
- Our forecasts for 2021 indicate that global shock absorbing capacity remains well below pre-global financial crisis levels
- Last year's sharp weakening in resilience was driven by huge stimulus packages actioned to cushion the economic blow of the COVID-19 crisis. These depleted fiscal and monetary policy headroom, especially in advanced economies.
- With stronger macro and health insurance resilience before the onset of the pandemic, advanced markets had more capacity to put macro resilience resources to work to offset the economic fallout than emerging markets.
- The advanced economies with greater levels of resilience pre-pandemic demonstrated stronger growth performance during the 2020 downturn relative to historical long-term trends.
- Emerging markets, where the stimulus response was much less, benefited from looser USD financing conditions last year.
- Structural reforms to improve long-term growth prospects and replenish macro resilience must remain a priority.

## Insurance resilience

- We expect global insurance resilience to strengthen in 2021, underpinned by rising awareness of the importance of risk protection, and economic recovery.
- The global composite SRI Resilience Index fell slightly to 54.1 % in 2020, driven by weakening of health and mortality resilience amidst the pandemic shock.
- The global insurance protection gap for health, mortality and natural catastrophe risk rose by 6.3% to USD 1.4 trillion in 2020, amidst the pandemic crisis
- The global health protection gap widened by 8.1% to USD 747 billion in 2020. The pandemic stressed healthcare systems, particularly in emerging markets.
- With the increase in the global health protection gap, the global SRI Health Resilience Index declined in 2020. Governments absorbed the bulk of the pandemic shock with emergency spending on health. Emerging markets with lower health resilience scores were most vulnerable to the COVID-19 hit.
- Mortality resilience weakened due to a drop in financial assets and growing household debt. The global SRI Mortality Resilience Index slipped to 45.8% in 2020 from 47.5% in 2019. The decline was most noticeable in emerging markets.
- Resilience against natural catastrophe remains lowest. The global index reading was 24% in 2020, indicating that 76% of all associated protection needs across the world are uninsured.

# Macroeconomic resilience: higher resilience cushions the economic blow

In our assessment, the COVID-19 crisis reduced global macro resilience by 18% in 2020 from 2019. The advanced economies with higher levels of macro and health insurance resilience before the onset of the pandemic were more resilient to the subsequent global downturn than the emerging markets. This reflects their greater capacity to deploy more macro resilience resources, notably fiscal stimulus, to mitigate the economic fallout. However, the massive fiscal and monetary policy responses actioned to mitigate the downturn were also the main drivers of last year's near-fifth weakening in global macro resilience. The stimulus drained advanced economies fiscal buffer capacity by more than half, which in turn led to a more-than-20% decline in those economies' overall macro resilience in 2020.

Those advanced economies with higher levels of macro resilience pre-pandemic such as Switzerland and Norway saw stronger growth performance during the last year's global downturn than others with lower levels of resilience before the crisis hit (eg, Greece and Italy). We expect global macro resilience will benefit from the anticipated cyclical rebound in growth in 2021, which will have the effect of supporting fiscal space. Monetary policy space, however, will likely remain highly restricted as central banks will need to ensure the sustainability of very high levels of debt.

Even with strengthening this year from the 2020 lows, world macroeconomic resilience will still be weaker than it was in 2007 before the global financial crisis (GFC). This weakness will make recovery in economic growth itself vulnerable to set-backs. From a next steps perspective, structural reforms to improve long-term growth prospects and replenish macro resilience must remain top of the policy agenda

## Macroeconomic resilience: higher resilience cushions the economic blow

### SRI Macroeconomic Resilience Index (E-RI)

**Table 1: Scores and rankings**

	2020 ranking	2020 Resilience Index level	Fiscal space	Monetary policy space	Low-carbon economy	Insurance penetration	Financial market development	Human capital	Economic complexity	Labour market efficiency	Banking industry backdrop	Income inequality	2021 E-RI (tentative)	2021 ranking vs 2020	2019 ranking	
Switzerland	1	0.71 ▼	0.83 ▼	0.03 ▼	1.00 =	0.67 =	1.00 =	0.81 ▼	1.00 =	1.00 =	0.93 =	0.96 =	0.76 ▲	1	-	1
Norway	2	0.67 ▼	0.86 ▼	0.06 ▼	1.00 =	0.28 ▲	0.73 ▲	0.74 =	0.36 ▼	0.81 =	0.90 =	1.00 =	0.70 ▲	2	-	4
Denmark	3	0.68 ▼	0.95 ▼	0.03 ▼	1.00 =	0.96 ▲	0.33 ▼	0.85 ▼	0.52 ▼	1.00 =	0.74 ▼	0.94 =	0.69 ▲	3	-	5
Finland	4	0.64 ▼	0.62 ▼	0.03 ▼	0.62 ▼	0.91 ▲	0.88 ▼	0.99 =	0.82 =	0.73 ▲	1.00 =	0.94 =	0.69 ▲	5	-1	3
Netherlands	5	0.66 ▼	0.88 ▼	0.03 ▼	0.58 ▲	0.80 ▼	0.73 =	0.85 ▼	0.57 ▼	0.87 =	0.83 ▲	0.92 =	0.68 ▲	4	1	7
Sweden	6	0.66 ▼	0.91 ▼	0.03 ▼	1.00 =	0.57 ▲	0.79 =	0.82 =	0.89 ▼	0.64 ▼	0.66 ▼	1.00 =	0.68 ▲	6	-	6
Canada	7	0.53 ▼	0.27 ▼	0.06 ▼	0.49 =	0.62 ▲	1.00 ▲	0.93 =	0.44 ▲	0.88 ▼	0.96 ▼	0.58 =	0.68 ▲	9	-2	2
New Zealand	8	0.63 ▼	0.86 ▼	0.06 ▼	0.85 ▼	0.32 =	0.08 ▼	0.78 =	0.07 =	0.95 ▼	0.91 ▼	0.89 =	0.65 ▲	8	-	9
Australia	9	0.63 ▼	0.87 ▼	0.06 ▼	0.01 ▲	0.31 ▼	0.85 ▼	0.81 =	0.00 =	0.63 ▲	0.97 ▼	0.62 =	0.66 ▲	7	2	10
United States	10	0.55 ▼	0.45 ▼	0.06 ▼	0.46 ▲	1.00 =	1.00 =	0.79 ▼	0.84 ▼	1.00 =	0.80 ▲	0.23 =	0.65 ▲	11	-1	8
Germany	11	0.59 ▼	0.77 ▼	0.03 ▼	0.78 =	0.47 ▲	0.75 ▲	0.84 ▼	1.00 =	0.78 ▼	0.54 =	0.64 =	0.64 ▲	12	-1	11
South Korea	12	0.63 ▼	0.97 ▼	0.08 ▼	0.16 ▲	0.98 ▲	0.79 ▼	1.00 =	1.00 =	0.37 ▲	0.56 ▲	0.64 =	0.64 ▲	10	2	13
Ireland	13	0.60 ▼	0.99 ▲	0.03 ▼	1.00 ▲	0.60 ▼	0.48 =	0.90 ▼	0.69 ▼	0.92 ▼	0.22 ▲	0.83 =	0.61 =	13	-	15
Austria	14	0.47 ▼	0.33 ▼	0.03 ▼	0.35 =	0.25 =	0.40 ▲	0.80 ▼	0.83 =	0.55 =	0.82 ▲	1.00 =	0.57 ▲	14	-	14
Japan	15	0.43 ▼	0.03 ▼	0.03 ▼	0.49 ▲	0.76 ▲	0.90 ▼	1.00 =	1.00 =	0.73 ▲	0.75 ▼	0.67 =	0.55 ▲	16	-1	12
United Kingdom	16	0.42 ▼	0.00 ▼	0.04 ▼	0.84 ▲	0.92 ▼	1.00 =	0.78 =	0.78 ▼	0.88 ▼	0.62 ▼	0.81 =	0.43 ▲	17	-1	16
Chile	17	0.54 =	0.95 ▲	0.32 ▼	0.28 ▲	0.28 =	0.00 =	0.32 ▼	0.00 =	0.37 ▼	1.00 =	0.00 =	0.55 =	15	2	19
France	18	0.35 ▼	0.00 ▼	0.03 ▼	0.92 ▲	0.80 =	0.63 ▼	0.69 =	0.75 =	0.37 ▲	0.70 ▼	0.84 =	0.47 ▲	19	-1	17
China	19	0.48 ▼	0.99 =	0.26 ▼	0.20 ▲	0.24 ▲	0.52 =	0.25 =	0.38 =	0.22 =	0.24 =	0.33 =	0.48 =	18	1	22
Spain	20	0.30 ▼	0.00 ▼	0.03 ▼	0.33 ▲	0.33 ▼	0.96 ▼	0.73 =	0.38 =	0.30 ▲	0.49 ▲	0.83 =	0.40 ▲	20	-	18
Belgium	21	0.30 ▼	0.00 ▼	0.03 ▼	0.17 =	0.42 =	0.27 ▼	0.79 =	0.39 =	0.41 ▼	0.57 =	0.81 =	0.37 ▲	21	-	20
Portugal	22	0.20 ▼	0.00 ▼	0.03 ▼	0.80 =	0.40 ▼	0.44 ▼	0.77 ▼	0.11 ▲	0.39 ▼	0.00 =	0.65 ▼	0.31 ▲	22	-	21
Italy	23	0.25 ▼	0.00 ▼	0.03 ▼	0.95 =	0.70 =	0.79 ▼	0.70 ▼	0.66 =	0.11 ▼	0.10 ▲	0.76 =	0.31 ▲	23	-	23
India	24	0.25 ▼	0.33 ▼	0.23 ▼	0.53 ▼	0.18 ▲	0.19 ▲	0.00 =	0.17 =	0.00 ▼	0.30 =	0.32 =	0.27 ▲	28	-4	25
Hungary	25	0.24 ▼	0.01 ▼	0.23 ▼	0.18 ▼	0.02 =	0.00 =	0.72 ▼	0.75 ▼	0.20 ▲	0.60 ▲	0.88 =	0.24 =	27	-2	24
Russia	26	0.25 ▼	0.44 ▼	0.22 ▼	0.16 ▲	0.00 =	0.00 =	0.85 ▼	0.21 ▲	0.30 ▲	0.00 =	0.53 =	0.32 ▲	25	1	27
Mexico	27	0.32 =	0.00 =	0.57 ▲	0.14 ▼	0.02 ▲	0.00 =	0.06 ▼	0.51 ▼	0.08 ▲	0.75 ▲	0.00 =	0.33 =	24	3	26
South Africa	28	0.32 ▲	0.30 ▲	0.26 ▼	0.03 ▲	1.00 =	0.31 ▲	0.00 =	0.00 =	0.29 =	0.77 ▲	0.00 =	0.27 ▼	26	2	28
Brazil	29	0.23 ▼	0.00 =	0.14 ▼	0.34 =	0.20 ▲	0.46 ▲	0.00 =	0.19 ▼	0.00 =	0.83 ▲	0.00 =	0.23 =	29	-	29
Turkey	30	0.20 =	0.00 =	0.59 ▼	0.22 =	0.00 =	0.33 ▼	0.35 ▲	0.17 ▲	0.00 =	0.30 =	0.37 =	0.20 =	30	-	30
Greece	31	0.13 ▼	0.00 =	0.03 ▼	0.41 ▼	0.01 =	0.17 ▼	0.41 =	0.02 =	0.00 =	0.00 =	0.64 =	0.14 =	31	-	31
<b>World</b>		<b>0.44 ▼</b>	<b>0.50 ▼</b>	<b>0.16 ▼</b>	<b>0.42 =</b>	<b>0.51 =</b>	<b>0.63 =</b>	<b>0.54 =</b>	<b>0.55 ▼</b>	<b>0.48 ▼</b>	<b>0.52 =</b>	<b>0.43 =</b>	<b>0.49 ▲</b>			
Advanced		<b>0.50 ▼</b>	0.39 ▼	0.05 ▼	0.56 ▲	0.80 =	0.88 =	0.82 =	0.78 =	0.77 =	0.70 ▲	0.54 =	<b>0.59 ▲</b>			
Emerging		<b>0.37 ▼</b>	0.62 ▼	0.28 ▼	0.27 =	0.19 ▲	0.36 ▲	0.23 =	0.30 ▲	0.15 ▼	0.32 =	0.30 =	<b>0.38 ▲</b>			

The table shows the unweighted scores of all components as of 2020 (or 2019 when 2020 data is unavailable at the date of publication). Ranks are determined by taking a three-year average of the overall E-RI score so as to minimise the impact from data revisions year-on-year. This means that index scores may not necessarily run in chronological order. Symbols represent the direction of change from 2019 to 2020 (or the latest available data point relative to the prior year). Latest data release: 2019 for the insurance penetration, labour market efficiency, banking industry backdrop and income inequality; 2018 for financial market development and economic complexity; all other indicators are reported as of 2020. This year's fiscal and monetary policy space are computed based on expected developments over the year and are therefore tentative figures. Overall resilience scores are determined by weighting the scores according to the weights outlined in sigma 5/2019 – Indexing resilience: a primer for insurance markets and economies. The primer work on the E-RI was a collaboration between Swiss Re Institute and the London School of Economics. For more visualisations of the E-RI, visit the *sigma explorer*  
Source: Swiss Re Institute

Global economic resilience is set for a mechanical rebound from last year's unprecedented slump.

The main driver of last year's sharp weakening in global macro resilience was the large reduction in fiscal buffer capacity in advanced economies.

Advanced economies with greater levels of resilience pre-pandemic better withstood last year's downturn.

The COVID-19 crisis has weakened global resilience significantly, with our global macroeconomic index reading for the end of 2020 falling by 18% from the year before, to 0.44. As a barometer of the severity of last year's decline in resilience is the experience of the global financial crisis (GFC), when a same near-fifth degree of weakening took two years to materialise. In last year's exceptional circumstances resulting from the sudden halt to global economic activity on account of lockdown measures imposed to contain virus spread, policy makers in advanced markets in particular actioned extraordinary levels of fiscal stimulus to cushion the economic blow of the pandemic. For instance, in terms of GDP, as of January this year, both the US and UK had allocated roughly 30% of GDP to spending and liquidity support for the economy.<sup>1</sup> We forecast a strong cyclical recovery in global economic growth in 2021 from last year's health-crisis induced lows. In terms of our model, this will prompt a mechanical and partial rebound in the global macroeconomic resilience index reading to 0.49. However, cyclical recovery does not mean sustainable, structural recovery. The reality is that overall global macro resilience is weaker than before the onset of the pandemic (0.54 in 2019), and even more so than before the GFC in 2007 (0.62).

Last year's weakening in global macro resilience was primarily driven by a contraction in fiscal space,<sup>2</sup> on account of both the massive spending stimulus in advanced markets and large contractions in economic activity. The unprecedented levels of government stimulus to counteract the adverse economic fallout from the pandemic, while necessary, reduced our reading of fiscal buffer space in these economies to 0.39 in 2020 from 0.82 in 2019. As a consequence, government debt levels in advanced economies rose by more than 16%, the largest annual increase since the turn of the century.<sup>3</sup> The large increases were accommodated for by extremely loose monetary policy, which kept a lid on debt servicing costs.<sup>4</sup> Across advanced economies,<sup>5</sup> the fall in fiscal space was most acute in Portugal, Spain, France and Belgium. The sharp falls were primarily driven by respective large contractions in real GDP (all greater than 6%), and also deteriorating current account balances and accumulation of government debt. Conversely, the fiscal space index readings for some other countries -- South Africa, Chile and Ireland -- all improved in 2020. This was due to current account deficits in these countries turning into surpluses over course of the year, which in terms of fiscal space more than offset the negative impact of contractions in economic activity.<sup>6</sup>

The strongest economic recession of our lifetimes emanated from the COVID-19 health crisis that forced lockdown and other containment measures, bringing the global economy to a near stand-still for many months. For all countries, the pandemic has been a balancing act between minimising the humanitarian crisis and cushioning the economic blow. As reflected in their stronger aggregate indices' readings from 2019 before the pandemic hit, advanced regions benefitted from both stronger levels of macro and health insurance resilience than their emerging counterparts (see Figure 1 and *Health resilience: governments absorbed the pandemic shock*). We believe this allowed advanced economies to focus more heavily on minimising the economic impact of the crisis by putting more of their macro resilience capacity (notably fiscal spending) to work than in their emerging

<sup>1</sup> See *IMF Database of Fiscal Policy Responses to COVID-19*, January 2021; the announced USD 1.9 trillion stimulus package in the US added manually.

<sup>2</sup> Fiscal space aims to quantify an economy's room to use fiscal policy. Broadly speaking, it measures how likely a country is to face fiscal distress in times of funding difficulty/loss of market access. The less likely a country is to face fiscal distress, the more fiscal space it has.

<sup>3</sup> Across the advanced economies, general government gross debt rose from 104% of GDP as of 2019 to 120% of GDP in 2020, according to the IMF's April 2021 *World Economic Outlook* database.

<sup>4</sup> Net interest cost incurred by the US government for example were at 2.2% of GDP in 2000 and stood at 1.6% of GDP in 2020 based on calculations using CBO and IMF data. Meanwhile, government debt levels have risen substantially from around 50% of GDP to nearly a 130% of GDP over the same period.

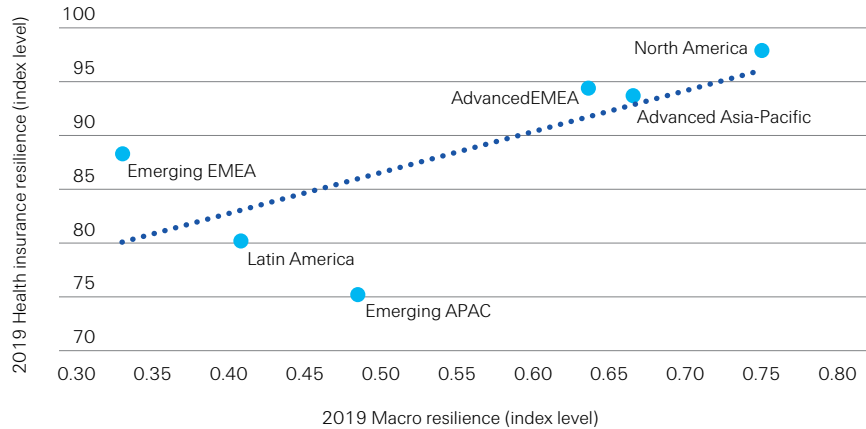
<sup>5</sup> The macroeconomic resilience index covers 31 countries, 22 of which are advanced economies.

<sup>6</sup> South Africa's current account surplus was mainly driven by larger trade surplus and smaller income deficit versus 2019; in Chile, exports of goods was robust although partly offset by rising imports; in Ireland, the trade surplus increased substantially which supported the current account surplus.

# Macroeconomic resilience: higher resilience cushions the economic blow

market peers. We therefore expect that overall macro resilience across advanced economies will behave in a much more cyclical manner relative to emerging markets. Advanced markets experienced a deeper drop in their resilience between 2019 and 2020 (index down from 0.66 to 0.50), and we expect a stronger recovery in 2021 (to 0.59) than will be seen in the emerging markets, in line with the ongoing pick-up in economic activity. The recovery in resilience in advanced economies is partly driven by the unprecedented fiscal stimulus that is supporting economic activity.

**Figure 1**  
Pre-pandemic levels of macro and health resilience, by region

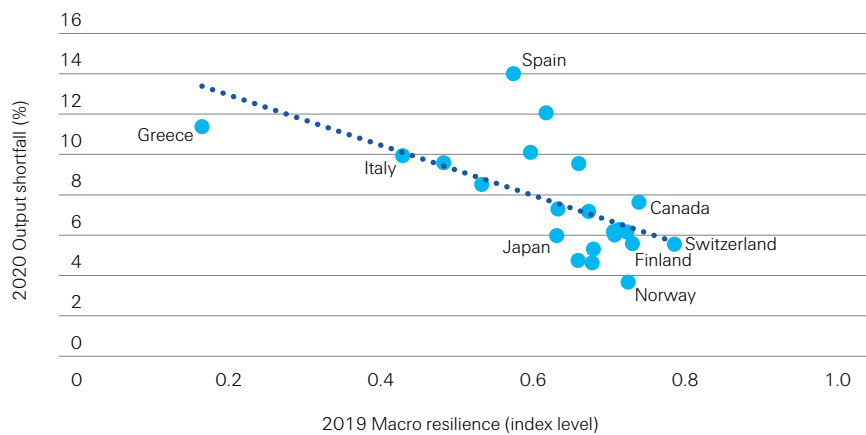


Source: Swiss Re Institute

Higher macro resilience translated into lower output shortfalls in advanced economies.

In addition to benefitting from higher health insurance resilience, we find that among the advanced markets, last year's GDP growth performance relative to historical long-term trends (the "output shortfall") of those economies with higher levels of macro resilience pre-pandemic (eg, Switzerland and Norway) was stronger than in peers with less shock-absorbing capacity (eg, Greece and Italy, see Figure 2). For emerging markets, the relationship between resilience and output shortfalls is not as clear. There was significantly less stimulus response in these economies, meaning that monetary and fiscal space were much less reduced than in advanced markets, despite output shortfalls. The reason is twofold: 1) in China, the largest emerging economy, less stimulus was needed given the rapid imposition of measures to contain virus spread, enabling a higher degree of "normality" through most of 2020; and 2) emerging economies benefitted from looser international and USD financing conditions that resulted from easy monetary policy across key advanced economies.

**Figure 2**  
Pre-pandemic levels of macro and resilience and subsequent output shortfalls



Source: Swiss Re Institute

Economic recovery will replenish fiscal stocks...

Improvements in economic activity from last year's lows should support fiscal space, which is also cyclical in nature. We forecast that our global fiscal buffer index reading will rebound to 0.65 by end-2021 (from 0.50 in 2020), mostly driven by the advanced economies (from 0.39 to 0.65). The improvement in fiscal space in 2021, however, will not be a full return to pre-pandemic levels, leaving global macro resilience short of the 2019 level. For example, the fiscal space index reading for the US should increase to 0.77 this year (from 0.45 in 2020), driven by strong recovery in economic activity (we forecast US real GDP growth to come in at 6.5% for 2021). However, the fiscal space value will still be below the 2019 reading of 0.88. Our model indicates that only Chile will have more capacity to absorb shocks this year (2021 macro resilience index reading of 0.55) than it did before the pandemic (2019 macro index 0.54). A main driver will be continued accumulation of fiscal space (0.97 in 2021 versus 0.90 in 2019) based on cyclical rebound and a still positive current account balance.<sup>7</sup>

...but monetary policy space will not benefit from the cyclical rebound in economic growth.

Monetary policy, however, will not benefit from the cyclical rebound in a similar way. Instead, central banks will remain in accommodative territory to ensure the massive government debt loads that have been accumulated remain sustainable. This will leave the authorities, especially in advanced markets, with very little room to ease monetary policy further should another shock occur. Our index reading for the global monetary policy space in 2021 is 0.16, which is less than half pre-GFC levels (for advanced economies, monetary policy space is virtually exhausted at 0.05 versus 0.38 pre-GFC). Other factors like insurance penetration and human capital are structural in nature and much slower moving. We expect there will be an increase in income inequality on account of COVID-19. However, this is not yet reflected in the available data (for 2019) and should show in next year's index update instead.

The world economy needs structural policy reforms to build long-term growth prospects and replenish resilience.

Without doubt, the global economy is in a better place today than a year ago when it was on the cusp of an unprecedented slump. However, a large part of the associated improvement in macro resilience will be mechanically driven by the anticipated strong bounce back in economic activity. Beyond this year's expected growth highs, improving long-term prospects and replenishing economic resilience must remain top policy priorities. With monetary policy space still largely exhausted and with government debt levels at record highs, the focus must turn to structural reforms. This should include targeted investments into sustainable and quality infrastructure, the digital economy and the transition to a low-carbon economy.

We have updated the construct of our macroeconomic resilience index.

As part of a three-year review of the methodology for the construct of our resilience index, we have expanded the focus to also capture the impact of income inequality and cross-border spill-overs on economic resilience.<sup>8</sup> We have also revised how we assess fiscal policy buffer space. See Appendix for more.

<sup>7</sup> We expect Chile's macro resilience to remain relatively stable over the period 2019 to 2021. This despite the country's central bank having put to work some of the monetary policy space, enabled also by an improvement in the economy's fiscal space given a strengthened current account balance.

<sup>8</sup> Cross-border spill-overs aim to capture that resilience is ultimately global and countries stand to benefit from each other's resilience. Last year highlighted the dependence of emerging economies on USD financing conditions and therefore their exposure to US resilience. Supply chain disruptions also emphasised the dependence in terms of goods trade.

# Insurance resilience: rising risk awareness to support insurance demand

We expect economic recovery and rising risk awareness due to the COVID-19 experience to underpin a strengthening of global insurance resilience in 2021. This after the global insurance protection gap for health, mortality and natural catastrophe risks combined increased by 6.3% to USD 1.4 trillion in 2020 amidst the pandemic crisis. The global composite SRI Resilience Index fell slightly to 54.1 % in 2020, driven by weakening of health and mortality resilience amidst the pandemic shock. Emerging markets with lower health resilient scores/less robust health infrastructure were most vulnerable. Resilience against natural catastrophe risks remains the lowest of all.

## SRI Insurance Resilience Indices (I-RIs)

**Table 2: Scores and protection gaps**

	SRI Insurance Resilience Indices in % (I-RIs)			Protection gaps (in USD billion)		
	2009	2019	2020	2009	2019	2020*
<b>SRI Composite Insurance Resilience index</b>	<b>55.8</b>	<b>54.7</b>	<b>54.1</b> ▼	<b>895</b>	<b>1 304</b>	<b>1 386</b> ▲
<b>SRI Health Resilience index</b>	<b>93.1</b>	<b>92.5</b>	<b>92.3</b> ▼	<b>430</b>	<b>691</b>	<b>747</b> ▲
North America	97.3	97.9	97.8 =	73	89	99 ▲
Latin America	78.1	80.2	79.5 ▼	71	93	100 ▲
Advanced EMEA	94.8	94.4	94.4 =	95	113	115 ▲
Emerging EMEA	86.6	88.3	87.6 ▼	45	56	62 ▲
Advanced Asia-Pacific	94.2	93.7	93.5 ▼	41	60	64 ▲
Emerging APAC	69.8	75.2	75.7 ▲	106	279	306 ▲
<b>SRI Mortality Resilience index</b>	<b>49.1</b>	<b>47.5</b>	<b>45.8</b> ▼	<b>307</b>	<b>385</b>	<b>408</b> ▲
North America	57.6	55.1	55.1 =	53	64	65 ▲
Latin America	34.5	44.5	43.2 ▼	29	30	28 ▼
Advanced EMEA	52.5	54.4	53.9 ▼	69	71	74 ▲
Emerging EMEA	48.5	43.8	42.9 ▼	89	93	90 ▼
Advanced Asia-Pacific	54.2	60.0	58.7 ▼	30	31	32 ▲
Emerging APAC	25.3	29.9	27.0 ▼	36	97	120 ▲
<b>SRI Natural Catastrophe Resilience Index</b>	<b>25.1</b>	<b>24.1</b>	<b>24.0</b> =	<b>158</b>	<b>227</b>	<b>231</b> ▲
North America	40.1	39.8	40.0 ▲	35	59	60 ▲
Latin America	22.7	6.5	6.1 ▼	16	22	20 ▼
Advanced EMEA	35.5	43.0	43.9 ▲	22	18	18 =
Emerging EMEA	10.0	8.5	8.6 =	31	34	37 ▲
Advanced Asia-Pacific	19.1	23.2	22.7 ▼	36	43	44 ▲
Emerging APAC	4.2	3.5	3.6 =	18	51	53 ▲

Note: I-RIs are based on research into protection gaps and measure the relation between protection needed and available. The value ranges from 0-100%. The greater the value, the greater the protection relative to the needs and the higher the resilience. Some historical values changed due to data revision or revised estimates. For Latin America, the revised estimates are based on a broader sample of countries. Protection gaps are measured in premium equivalent terms; the red up arrows denote widening protection gaps in 2020 vs 2021. See *sigma* 5/2019, Indexing resilience: A primer for insurance markets and economies, for the methodology. For this update, we have revised our modelling for the health protection gaps estimates. See Appendix for more.  
Source: Swiss Re Institute



## The global insurance protection gap hits new record

Health and mortality risks accounted for 83% of the USD 1.4 trillion global protection gap in 2020.

The combined world protection gap for health, mortality and natural catastrophe risks reached a new high of around USD 1.4 trillion in 2020. The rise from USD 1.3 trillion in 2019 came amidst the pandemic crisis. In 2020, health risks contributed more than half of the total gap (USD 747 billion, 54% of the total gap). Emerging markets are generally more vulnerable to the negative economic and other fallout from the COVID-19 crisis. Emerging EMEA, emerging APAC and Latin America have a combined gap of USD 816 billion and accounted for 59% of the total global gap. The SRI Global Composite Insurance Resilience Index (I-RI), which aggregates the three resilience sub-indices, slipped to 54.1% from a revised 54.7% in the previous year (and down from 55.8% at the time of the GFC). We expect overall resilience to improve in 2021, with rising risk awareness after, and economic recovery from, the pandemic-induced systemic shock.

The health protection gap rose 8.1% to USD 747 billion in 2020, of which 63% came from emerging markets.

### Health resilience: governments absorbed the pandemic shock

The global health protection gap widened by 8.1% to USD 747 billion in 2020. The pandemic has stressed healthcare systems across the world, particularly in emerging markets. Emerging markets with lower health resilient scores or less robust health infrastructure and high levels of out-of-pocket spending on health are most vulnerable to emergency circumstances such as presented by COVID-19. Affordable health insurance can play a central role in enhancing protection and reducing the financial risks entailed. Of last year's global health protection gap, 63% emanated from the emerging markets. Compared to 2019, the global SRI Health Resilience Index was down just slightly, at 92.3% in 2020 from 92.5% in 2019. Governments absorbed much of the shock with increased spending on emergency health needs. Nevertheless, the pandemic has spurred rising demand for health insurance. For example, health insurance premiums in emerging markets grew by 17% in real terms, despite the recession, in 2020. We expect this to support strengthening of global health resilience in the coming years.

The global mortality protection gap widened to USD 408 billion and remains dominated by emerging Asia.

### Mortality resilience weakened amidst the pandemic hit

The global mortality protection gap widened by 5.9% to USD 408 billion globally in 2020. The gap increased mainly as a result of a drop in financial assets and growing household debt amidst the pandemic crisis. The gap translates into a global SRI Mortality Resilience Index of 45.8%, meaning that less than 46% of households have the funds needed to maintain living standards in the event of the death of the primary breadwinner. These funds can take the form of life insurance, social security survivor benefits, household savings and other assets. Compared to 2009, this represents a more than 3-percentage point (ppt) decline. The COVID-19 experience has reinforced public perception of the importance of mortality protection.

Natural catastrophe resilience remains low, with 76% of global exposures unprotected.

### Natural catastrophe resilience remained the lowest of all

The global SRI Natural Catastrophe Resilience Index remained low at around 24% in 2020, meaning that 76% of global natural catastrophe exposures are unprotected.<sup>9</sup> In essence, 4 billion people around the world are highly under-protected against natural catastrophes risk. By country, the populations of Denmark, France, New Zealand, Australia and UK are most protected. By region, resilience is highest and improved most in advanced EMEA last year. The region's 44% index score reflects the degree of annual modelled expected losses from wind, flood and earthquake risks covered by private insurance. The index score of emerging Asia-Pacific is lowest at 3.6%, meaning that more than 96% of potential natural catastrophe losses in the region are unprotected.

<sup>9</sup> Based on modelled exposure of the key perils storms, earthquakes and floods.

## Insurance resilience: rising risk awareness to support insurance demand

Take up of insurance has lagged property asset accumulation in high-growth emerging economies.

The global natural disaster protection gap was more than USD 230 billion in 2020. Global resilience against natural catastrophes has not improved over the last 10 years. This is mainly because insurance penetration in high-growth emerging economies has remained low, alongside higher take-up rates in slow-growth advanced markets.

### SRI Natural Catastrophe Resilience Index (NatCat I-RI)

**Table 3: Scores, rankings and protection gaps**

	NatCat I-RI		Protection Gap, USD bn		NatCat I-RI		Protection Gap, USD bn
	Index (%)	Rank			Index (%)	Rank	
Denmark	83	1	0.1	Japan	21	17	31
France	79	2	0.8	Portugal	21	18	0.2
New Zealand	73	3	0.2	Colombia	19	19	0.4
Australia	69	4	0.5	Canada	16	20	2.0
UK	69	5	1.0	Mexico	16	21	4.5
Poland	60	6	0.1	Ecuador	15	22	0.3
Switzerland	59	7	0.6	South Africa	15	23	0.3
Israel	53	8	0.3	Italy	12	24	4.2
Belgium	51	9	0.5	Taiwan	10	25	4.2
Czech Republic	50	10	0.1	Peru	10	26	0.6
Austria	41	11	0.4	Uruguay	10	27	0.1
US	41	12	46	Philippines	7	28	2.9
Germany	36	13	2.1	Brazil	6	29	0.4
Netherlands	31	14	0.9	China	5	30	21
Turkey	30	15	2.3	India	5	31	2.6
Chile	29	16	0.9	Indonesia	5	32	3.0
				Greece	3	33	0.6

Resilience index score (%)			
<25%	25–50%	50–75%	>75%

Source: Swiss Re Institute

# Appendix: methodology update for SRI Macroeconomic Resilience Index (E-RI)

As part of a three-year update cycle to the methodology of our construction of the macro resilience index, we have expanded the focus of the index to also capture the impact of income inequality and cross-border spill-overs on economic resilience.<sup>10</sup> We also implemented a small update to the methodology for fiscal space.

The macro resilience index is now comprised of a total of 10 indicators following this year's inclusion of income inequality (see Table 1 for an overview of the 10 components that constitute the Macroeconomic Resilience Index). In order to accommodate for this new indicator, the weights assigned across all components have been revised, as summarised in Table 4 below. In addition to the 10 indicators that drive a country's economic resilience, the index now aims to also capture cross-border impacts. The goal is to account for the notion that resilience is ultimately global and that countries stand to benefit from each other's shock absorbing capacity. For advanced economies, spill-overs onto a country's resilience are determined by the resilience of that country's main export trading partners. Spill-overs into emerging economies also account for the high dependency of these economies on USD financing conditions, which in turn are heavily influenced by macroeconomic resilience in the US itself.<sup>11</sup>

Beyond these changes, we have also revised the fiscal space methodology. The fiscal space, an estimate of a country's fiscal leeway, is now computed based on current year forecasts for variables such as the level of government debt as a percent of GDP, the current account balance, and materialised and potential real GDP growth rates (see Table 4 for a detailed list of indicators included). Fiscal space is still estimated in a two-step process. (1) Using realised annual data from 1995 to 2020 and forecasts for 2021, we estimate distress probabilities through a panel-probit estimation. The methodology slightly differs for advanced vs emerging economies as we include FX valuations for emerging markets only, as this can cause significant stress for their governments. (2) We construct the fiscal space by taking the inverse of the fiscal distress probabilities. Following our analysis of previous fiscal distress episodes, we consider that countries with probabilities of around 30% or higher have very constrained fiscal space. At these levels, distress likelihoods become highly non-linear and exposed to shifts in economic growth momentum and sentiment, as evidenced during the euro area sovereign debt crisis, for instance. For the fiscal space indicator, this means that countries with a fiscal distress likelihood of 30% or higher get a zero score, while countries with likelihoods of 0% get a score of 1.

<sup>10</sup> The cross-border spill-overs in macroeconomic resilience are included as an additional layer. Country A's resilience is therefore computed based on the 10 indicators in a first stage. In a second stage, the spill-overs are computed. 80% of an economy's final macroeconomic resilience stems from its "internal" resilience which is driven by the 10 indicators. The remaining 20% is driven by the resilience of the economies to which that economy is most exposed through trade and USD dependency (the latter is only applied for emerging economies).

<sup>11</sup> For emerging economies, two-thirds of the spill-over layer is driven by USD dependency and a third by the largest export trading partners.

## Appendix: methodology update for the SRI Macroeconomic Resilience Index (E-RI)

**Table 4 – Components of the SRI Macroeconomic Resilience Index**

Indicator	Weight	Source	Definition of indicator	Rationale
<b>Macro buffers</b>				
Fiscal space	35%	Swiss Re, based on data from World Bank (WB)/IMF	An empirical estimate of a country's room to use fiscal policy without risking a fiscal distress situation. This includes the level of government debt as a percent of GDP, the sovereign debt rating, real GDP growth, the current account and primary balance, short-term debt as percent of GDP, and a measure of FX pressure on the real economy. <sup>12</sup> For emerging markets, we include FX reserves in terms of months of imports.	We consider fiscal policy the most important policy tool to mitigate the length and depth of an economic shock.
Monetary policy space	15%	Swiss Re, based on World Bank data	Measures the ability of a central bank to ease or tighten monetary policy. This includes the distance of short and long-term rates to the zero lower bound or to "fair-value" yield estimates. For emerging markets, a proxy of central bank independence and the policy differential against the US Federal Reserve are also included.	Monetary policy is a key policy instrument to absorb economic shocks.
<b>Macro structural elements</b>				
Banking industry backdrop	18%	World Economic Forum (WEF)	The findings of a WEF survey of executives, indicating how sound a country's banks are generally considered to be. The measure is not based on economic or accounting measures, but popular perceptions around dimensions influencing the health of the banking sector (eg. capital buffers, sustainability of business models, regulatory developments and the macro environment). <sup>13</sup>	A fragile banking industry backdrop propagates shocks given the sector's interconnectedness with the economy.
Labour market efficiency	10%	WEF	Includes flexibility of wage determination, hiring and firing practices, capacity to retain talent, female participation in the labour force, etc.	More efficient and dynamic labour markets allow for easier reallocation of workers during times of stress.
Financial market development	8%	IMF	This component is a summary of how developed financial markets are in terms of depth, access and efficiency.	Developed financial markets diversify the funding sources available for the real economy.
Economic complexity	4%	The Observatory of Economic Complexity	A holistic measure of the sophistication and variety of goods produced by and exported from an economy. It shows the breadth and depth of an economy's production capacity.	An economy producing sophisticated and a variety of goods will be less affected by shocks in specific sectors.
<b>Income inequality (new)</b>	4%	World Inequality Database	This indicator is measured as the ratio between the top 10 percentile of the income distribution to the bottom 50. It shows the distribution of income across a population between the poorest and the wealthiest. A higher ratio indicates higher inequality.	Low income inequality supports the purchasing power of lower-income households thus translating into stronger overall demand within an economy. This also ensures society can fair better in difficult times as households should be able to secure higher cash buffers.
Insurance penetration	2%	Swiss Re	Ratio of total (life and non-life) direct insurance premiums to GDP.	Insurance acts as a shock absorber and smoothens financial volatility.
Human capital	2%	WB	Assesses how health and education levels shape the productivity and social mobility.	High social mobility and skill levels make a country more dynamic, such that it can better withstand and adjust to shocks.
Low-carbon economy	2%	Maplecroft	Measures the extent to which a country already is a low-carbon economy (low fossil fuel or de-carbonized in terms of output/emissions).	Climate change has disruptive effects on global supply chains and infrastructure. This negatively impacts government finances, firms' capital, and household wealth. <sup>14</sup>

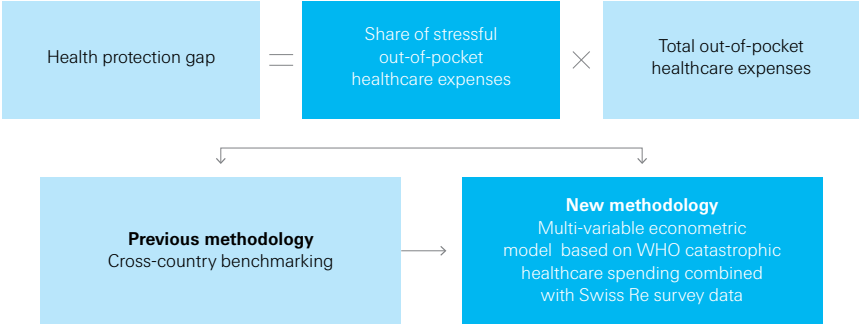
<sup>12</sup> The measure of FX pressure relates the PPP-implied exchange rate to the nominal exchange rate against the US dollar. An overvalued currency implies an economy is less competitive which increases the fiscal default probability. We include FX pressure in the fiscal space indicator instead of the monetary policy space measure. This is because the euro area sovereign debt crisis showed that a country's inability to devalue quickly has severe repercussions for its fiscal position. In a currency union like the euro area, overvaluation can only be restored by devaluing the real economy, for example by lowering wages and prices, which is very costly in terms of GDP and employment levels. In any case, large economies with a free-floating exchange rate can also experience severe fiscal distress and adjustment, as was the case in the UK in 1976.

<sup>13</sup> Regulatory filings such as banks capital positions are not available for all countries and for a sufficient amount of time.

<sup>14</sup> *Climate change: a core financial stability risk*, IIF, 2019.

# Appendix: methodology update for the SRI Health Resilience Index (Health I-RI)

As part of our continuous efforts to fine-tune the methodology of constructing the insurance resilience index, we have revised our model to estimate the health protection gap. The below chart outlines the concept and fundamental difference between the two methodologies:



Source: Swiss Re Institute

The previous estimation of stressful out-of-pocket (OOP) healthcare expenses was based on a cross-country benchmarking approach.

Our new model anchors around estimates from the World Health Organization (WHO) on share of population exposed to catastrophic out-of-pocket healthcare spending for a wide set of countries. For countries and years with missing data for the share of population exposed to catastrophic out-of-pocket healthcare spending from WHO, we imputed it using a multi-variable econometric model. The values were then linearly transformed to estimate the share of OOP healthcare expenses based on findings from the Swiss Re's consumer survey covering 12 Asian economies. The new methodology further expands the quality of estimation by incorporating information from the primary survey and results in a slightly higher value for the overall health protection gap.



**Published by**

Swiss Re Management Ltd  
Swiss Re Institute  
Mythenquai 50/60  
P.O. Box  
8022 Zurich  
Switzerland

Telephone +41 43 285 2551  
Email [institute@swissre.com](mailto:institute@swissre.com)

**Authors**

Lucia Bevere  
Irina Fan  
Fiona Gillespie  
Dr Thomas Holzheu  
Patrick Saner  
Rajeev Sharan  
Daniel Staib

***sigma* editor**

Paul Ronke

**Managing editor**

Dr Jerome Jean Haegeli  
Swiss Re Group Chief Economist

The authors thank Sakshi Baluja, Livia Bonato, Xin Dai, Caroline De Souza Rodrigues Cabral, Jan-Louis Zeller, Jonas Hartmann, Roman Lechner and Jan-Louis Zeller for their contributions to producing this update.

Explore and visualize *sigma* data on natural catastrophes and the world insurance markets at [www.sigma-explorer.com](http://www.sigma-explorer.com)

© 2021 Swiss Re. All rights reserved.

The editorial deadline for this study was 10 May 2021.

*sigma* is available on Swiss Re's website: [www.swissre.com/sigma](http://www.swissre.com/sigma)

The internet version may contain slightly updated information.

Graphic design and production:  
Corporate Real Estate & Logistics / Media Production, Zurich



Printing: Multicolor Print AG, Baar

The entire content of this *sigma* edition is subject to copyright with all rights reserved. The information may be used for private or internal purposes, provided that any copyright or other proprietary notices are not removed. Electronic reuse of the data published in *sigma* is prohibited.

Reproduction in whole or in part or use for any public purpose is permitted only with the prior written approval of Swiss Re and if the source reference "Swiss Re Institute, Resilience index annual update: cyclical growth recovery in 2021 to leave world economy less resilient than before COVID-19" is indicated. Courtesy copies are appreciated.

Although all the information used in this study was taken from reliable sources, Swiss Re does not accept any responsibility for the accuracy or comprehensiveness of the information given or forward looking statements made. The information provided and forward-looking statements made are for informational purposes only and in no way constitute or should be taken to reflect Swiss Re's position, in particular in relation to any ongoing or future dispute. In no event shall Swiss Re be liable for any loss or damage arising in connection with the use of this information and readers are cautioned not to place undue reliance on forward-looking statements. Swiss Re undertakes no obligation to publicly revise or update any forward-looking statements, whether as a result of new information, future events or otherwise.

Order no: 270\_2021\_EN

Swiss Re Management Ltd.  
Swiss Re Institute  
Mythenquai 50/60  
P.O. Box  
8022 Zurich  
Switzerland

Telephone + 41 43 285 2551  
[swissre.com/institute](http://swissre.com/institute)