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Resilience Index 2024: encouraging resilience gains, but more is needed

Executive summary

The world economy gained resilience in 2023 as higher growth and interest rates replenished countries' fiscal and monetary buffers, and the impact of shocks, such as the war in Ukraine and inflation surge, subsided. Insurance resilience either increased or was stable across the four perils we track, of crop, natural catastrophe health and mortality. This reflected a general focus on the shock-absorbing role of insurance for households, farms and businesses. In 2023 we saw signs of individuals and policymakers worldwide recognising the benefit of higher insurance protection and taking steps to increase insurance coverage, and hence resilience.

Higher insurance resilience is associated with positive economic outcomes for a country, studies show. For example, a large-scale natural catastrophe is found to have a smaller negative impact on a country's GDP if there is higher insurance cover. Food security can benefit from higher crop insurance, which reduces the financial burden of loss events and stabilises income and so crop production for farmers. Private medical insurance can complement public health systems and offer faster access to services when health stresses hit, resulting in stronger health and economic outcomes. However, uncertainty is elevated globally, and unforeseeable shocks beyond baseline scenarios are more frequently impacting economies at both macro and micro levels than in the past. As a result, we believe it is vital to understand what drives risk absorption, the contribution of insurance, and the actions we can take to strengthen resilience.

Our macroeconomic resilience index captures the extent to which an economy can withstand a shock such as a recession. Our insurance resilience indices measure how insurance contributes to maintaining households' and businesses' financial stability by transferring or absorbing risks to life, health and property. The protection gap is the uninsured or unprotected portion of the resources needed to fully mitigate risk.

The key findings from our latest resilience index research are:

Macroeconomic resilience

- Global macroeconomic resilience improved in 2023, our index increasing by 7% year-on-year, and fully recouped all losses incurred during the COVID-19 pandemic and recession in 2020.
- The primary driver was greater monetary policy headroom, as inflation in many economies declined while central banks kept interest rates elevated. Fiscal headroom also benefited from economic growth that was above consensus expectations.
- Advanced economies' resilience increased by 11%, predominantly from strengthening monetary headroom as interest rates were kept high while inflation fell. Emerging economies' resilience was flat yoy as most tightened monetary policy in 2022, and in 2023 faced a challenging climate of a strong US dollar and capital outflows.
- We expect macroeconomic resilience to grow by only 1% in 2024, driven by still-sticky inflation and increasing debt levels in many regions, slowing US growth and expected declines in interest rates.
- The medium-term outlook may be still more challenging. We expect a less favourable growth/inflation mix than in the pre-pandemic decade. Government debt to GDP levels are still rising, which is likely to pressure fiscal resilience and fiscal consolidation measures could pose headwinds to growth.
- To prepare for future shocks, policymakers may consider strategies to support macroeconomic resilience in the long term, for example by investing in areas such as capital markets depth and greater insurance penetration.

Insurance resilience

- Global insurance resilience was stable at 58% in 2023. The year saw gains in mortality resilience due to higher life insurance take-up, and in emerging markets' health resilience, supported by greater private health insurance, partly offset by weaker health resilience in some advanced regions.
- We estimate the global protection gap across perils reached a new high of USD 1.83 trillion in premium equivalent terms in 2023. This is up by 3.1% in nominal terms from a restated USD 1.77 trillion in 2022.
- The global protection gap has grown by 3.6% annually in nominal terms since 2013, roughly matching nominal GDP growth trends.
- The global crop resilience index was marginally higher yoy at 43.5%. The last decade has seen enormous progress, as advanced markets and China led contributions to growing crop resilience. The crop protection gap stood at USD 77 billion in 2023.
- Natural catastrophe resilience rose to 25.7% in 2023. The year featured a high proportion of severe convective storms, especially in the US, a peril that is relatively more insured than others. However, three quarters of global disaster exposure is not protected by insurance. The protection gap was USD 385 billion, up by 5.2% yoy.
- Our health resilience index was stable at 77.7% in 2023, implying about 22% still-untapped global coverage of additional private medical insurance. The global health protection gap grew by 5.4% to USD 940 billion.
- Global mortality resilience improved yoy in 2023, to 44.4%, but is still slightly below the 46.5% score of 10 years ago. The mortality protection gap was flat yoy at USD 414 billion in 2023 after China's protection gap declined.

Macroeconomic resilience: all COVID-19 losses recovered, but a more challenging outlook

Our Macroeconomic Resilience Index increased by 7% in 2023, recouping all of the resilience list during the COVID-19 crisis. The gain in 2023 was principally due to greater monetary policy headroom, as inflation decreased while interest rates remained high. Countries' fiscal buffers also expanded as economic growth surpassed consensus expectations and labour markets resisted the monetary tightening cycle to stay robust. The gains centre on advanced markets, which increased resilience by 11% due to monetary tightening, while emerging markets began their hiking cycle earlier and saw most of their gains in monetary resilience in 2022. As such, emerging markets resilience was broadly flat yoy in 2023, in line with the average for the past five years.

In 2024, we expect global macroeconomic resilience to be only about 1% higher, as monetary and fiscal resilience see declines. Monetary resilience is weakening due to expected interest rate cuts alongside persistent inflation in many regions. We expect US growth to slow from its strong 2023 levels which, given the importance of the US to the world economy, will likely pressure global fiscal resilience. The unwind of fiscal stimulus in France and the US will also likely negatively impact fiscal resilience in 2024. However, we expect gradual strengthening in economic growth in China and Europe, which should support fiscal resilience in these markets. The outcome of global resilience in 2024 will depend on the interaction of these countervailing forces.

We expect the medium-term outlook for macroeconomic resilience to be more challenging. We forecast slightly lower GDP and higher inflation on average in the coming years, which may test resilience. We expect global real GDP growth to average 2.6% through 2031, 0.4% lower than the average prior to the COVID-19 pandemic in 2019, and inflation to average 3.3%, 0.7% higher than the pre-COVID-19 average. This is driven by rising geopolitical tensions and geoeconomic fragmentation, which represent key risks to global macroeconomic resilience. Research has shown that the best resilience-strengthening economic policy measures are those that balance flexibility and credibility without short-term thinking. By taking a long-term view on resilience, policymakers can prepare for future shocks and enhance the economy's ability to withstand them by deepening financial markets and/or addressing vulnerabilities such as income inequality.

SRI Macroeconomic Resilience Index (E-RI)

Table 1
Scores and rankings

	2023													2024 prediction		
	Rank 2023	**2023 vs 2022 rank difference**	**Resilience index level**	Monetary policy resilience	Fiscal resilience	Income inequality	CO_2 emissions	Insurance penetration	Financial market development	Human capital	Economic complexity	Banking industry backdrop	Labour market efficiency	**Resilience index level**	Rank 2024	Rank difference (24 predicted vs 23)
Switzerland	**1**	**=**	**0.81** ▲	0.28 ▲	0.99 ▼	0.99 ▼	1.00 –	0.52 ▼	1.00 –	0.79 ▼	1.00 –	0.96 –	1.00 –	**0.82** ▲	1	=
Netherlands	**2**	**=**	**0.76** ▲	0.43 ▲	0.99 ▼	0.82 ▼	0.71 ▲	0.68 ▼	0.77 ▲	0.83 ▼	0.54 ▼	0.85 –	0.87 –	**0.77** ▲	2	=
Norway	**3**	**=**	**0.75** ▲	0.44 ▲	1.00 ▼	1.00 –	1.00 –	0.24 ▲	0.64 ▼	0.76 ▲	0.20 ▼	0.93 –	0.81 –	**0.77** ▲	3	=
Canada	**4**	**6**	**0.74** ▲	0.46 ▲	0.91 ▲	0.56 ▲	0.25 ▲	0.64 ▲	0.76 ▼	0.94 ▼	0.41 ▼	0.99 –	0.88 –	**0.76** ▲	4	=
Sweden	**5**	**-1**	**0.73** ▲	0.40 ▲	0.99 ▼	0.86 ▼	1.00 –	0.58 ▼	0.82 ▼	0.82 ▼	0.82 ▼	0.68 –	0.64 –	**0.74** ▲	5	=
Denmark	**6**	**-1**	**0.73** ▲	0.38 ▲	1.00 ▼	0.52 ▲	1.00 –	1.00 ▲	0.36 ▼	0.83 ▼	0.49 ▼	0.77 –	1.00 –	**0.74** ▲	6	=
Australia	**7**	**-1**	**0.72** ▲	0.41 ▲	0.98 ▼	0.63 ▲	0.30 ▼	0.22 ▼	1.00 –	0.80 ▼	0.00 –	1.00 –	0.63 –	**0.73** ▲	7	=
Finland	**8**	**-1**	**0.70** ▲	0.43 ▲	0.69 ▼	1.00 ▼	0.72 ▲	0.86 ▲	0.55 ▼	0.96 ▼	0.75 ▼	1.00 –	0.73 –	**0.70** ▼	9	1
US	**9**	**2**	**0.70** ▲	0.47 ▲	0.84 ▲	0.10 ▼	0.38 ▲	1.00 –	1.00 –	0.77 ▼	0.76 ▼	0.82 –	1.00 –	**0.72** ▲	8	–1
UK	**10**	**5**	**0.68** ▲	0.46 ▲	0.79 ▼	0.76 ▲	1.00 ▲	0.84 ▲	0.97 ▼	0.81 ▲	0.75 ▼	0.64 –	0.88 –	**0.69** ▲	13	3
Germany	**11**	**1**	**0.68** ▲	0.43 ▲	0.93 ▲	0.74 ▲	0.53 ▲	0.36 ▼	0.76 ▼	0.82 ▼	0.98 ▼	0.55 –	0.78 –	**0.70** ▲	10	–1
South Korea	**12**	**-3**	**0.68** ▲	0.39 ▲	0.96 ▼	0.89 ▲	0.22 ▲	0.97 ▼	0.76 ▼	1.00 –	0.96 ▼	0.58 –	0.37 –	**0.69** ▲	12	=
Austria	**13**	**1**	**0.68** ▲	0.43 ▲	0.92 ▼	0.85 ▲	0.72 ▲	0.24 ▲	0.33 ▼	0.75 ▼	0.81 ▼	0.85 –	0.55 –	**0.69** ▲	11	–2
New Zealand	**14**	**-6**	**0.67** ▲	0.47 ▲	0.81 ▼	0.66 ▼	0.72 ▲	0.15 ▲	0.16 ▼	0.80 ▲	0.12 ▲	0.93 –	0.95 –	**0.67** ▼	14	=
Ireland	**15**	**-2**	**0.65** ▲	0.43 ▲	0.98 ▼	0.43 ▼	1.00 –	0.35 ▲	0.51 ▼	0.86 ▼	0.67 ▼	0.23 –	0.92 –	**0.66** ▲	15	=
France	**16**	**1**	**0.62** ▲	0.43 ▲	0.75 ▲	0.74 ▼	0.94 ▲	0.72 ▼	0.75 ▲	0.72 ▲	0.70 ▼	0.72 –	0.37 –	**0.62** ▲	18	2
Belgium	**17**	**-1**	**0.61** ▲	0.43 ▲	0.86 ▲	1.00 ▲	0.59 ▲	0.36 ▼	0.19 ▲	0.79 ▼	0.67 ▼	0.59 –	0.41 –	**0.61** ▲	19	2
Japan	**18**	**=**	**0.60** ▲	0.20 ▲	0.70 ▲	0.38 –	0.38 ▲	0.74 ▲	0.97 ▼	1.00 –	1.00 –	0.77 –	0.73 –	**0.63** ▲	17	–1
Spain	**19**	**1**	**0.58** ▲	0.43 ▲	0.95 ▲	0.77 ▼	0.53 ▲	0.34 ▲	0.86 ▼	0.72 ▼	0.36 ▼	0.51 –	0.30 –	**0.63** ▲	16	–3
Portgual	**20**	**2**	**0.49** ▲	0.43 ▲	0.96 ▲	0.68 ▼	0.60 ▲	0.20 ▼	0.33 ▼	0.74 ▼	0.21 ▼	0.00 –	0.39 –	**0.54** ▲	20	=
China	**21**	**-2**	**0.49** ▲	0.40 ▲	0.94 ▼	0.27 –	0.04 –	0.19 ▲	0.51 ▼	0.16 –	0.48 ▼	0.25 –	0.22 –	**0.49** ▼	21	=
Italy	**22**	**-1**	**0.47** ▲	0.43 ▲	0.72 ▲	0.42 ▼	0.60 ▲	0.54 ▼	0.82 ▼	0.64 ▼	0.64 ▼	0.10 –	0.11 –	**0.49** ▲	22	=
India	**23**	**=**	**0.38** ▲	0.42 ▲	0.76 ▲	0.12 –	0.01 –	0.17 ▼	0.40 ▼	0.00 –	0.19 ▼	0.31 –	0.00 –	**0.40** ▲	23	=
Mexico	**24**	**1**	**0.31** ▼	0.36 ▲	0.00 –	0.00 –	0.22 ▼	0.03 ▲	0.00 –	0.07 ▲	0.53 ▼	0.78 –	0.08 –	**0.30** ▼	24	=
Chile	**25**	**-1**	**0.29** ▼	0.60 ▲	0.00 –	0.00 –	0.26 ▲	0.19 ▲	0.00 ▼	0.28 ▼	0.00 –	1.00 –	0.37 –	**0.29** ▼	27	2
Hungary	**26**	**3**	**0.26** ▲	0.31 ▲	0.18 ▲	0.83 ▼	0.30 ▲	0.00 –	0.00 –	0.66 ▼	0.73 ▼	0.62 –	0.20 –	**0.29** ▲	26	=
Greece	**27**	**3**	**0.26** ▲	0.43 ▲	0.52 ▲	0.74 ▼	0.34 ▲	0.02 ▲	0.22 ▼	0.40 ▼	0.03 ▼	0.00 –	0.00 –	**0.29** ▲	25	–2
South Africa	**28**	**-1**	**0.26** ▲	0.33 ▲	0.00 –	0.00 –	0.00 –	1.00 –	0.21 ▼	0.00 –	0.00 –	0.79 –	0.29 –	**0.25** ▼	29	1
Brazil	**29**	**-1**	**0.26** ▲	0.34 ▼	0.00 –	0.00 ▲	0.38 ▲	0.18 ▲	0.55 ▼	0.00 –	0.00 ▼	0.85 –	0.00 –	**0.26** ▼	28	–1
Russia	**30**	**-4**	**0.23** ▼	0.18 ▼	0.00 ▼	0.26 –	0.00 –	0.00 –	0.09 ▼	0.72 ▼	0.10 ▼	0.00 –	0.30 –	**0.15** ▼	31	1
Turkey	**31**	**=**	**0.17** ▲	0.23 ▼	0.00 –	0.20 –	0.23 ▲	0.00 –	0.36 ▼	0.42 ▲	0.21 ▼	0.31 –	0.00 –	**0.17** ▼	30	–1
World			**0.53** ▲	**0.40** ▲	**0.74** ▲	**0.32** ▼	**0.30** ▲	**0.47** ▼	**0.65** ▼	**0.50** ▼	**0.54** ▼	**0.53** ▼	**0.47** ▼	**0.54** ▲		
Advanced			**0.67** ▲	0.42 ▲	0.85 ▲	0.44 ▼	0.51 ▲	0.76 ▼	0.88 ▼	0.81 ▼	0.74 ▼	0.72 ▲	0.77 ▲	**0.68** ▲		
Emerging			**0.39** ▲	0.37 ▼	0.64 ▼	0.20 ▼	0.07 ▲	0.16 ▼	0.41 ▼	0.17 ▼	0.34 ▼	0.33 ▼	0.15 ▼	**0.39** ▼		
Euro area			**0.62** ▲	0.43 ▲	0.86 ▲	0.70 ▼	0.67 ▲	0.49 ▼	0.73 ▼	0.76 ▼	0.72 ▼	0.53 ▼	0.51 ▼	**0.64** ▲		
Latam			**0.28** ▲	0.37 ▲	0.00 –	0.00 ▲	0.31 ▲	0.12 ▲	0.28 ▼	0.05 ▼	0.22 ▼	0.83 ▼	0.06 ▼	**0.28** ▼		
N. America			**0.70** ▲	0.47 ▲	0.85 ▲	0.14 ▼	0.37 ▲	0.97 ▲	0.98 ▼	0.78 ▼	0.74 ▼	0.84 ▼	0.99 ▲	**0.72** ▲		
Ocasia			**0.49** ▲	0.38 ▲	0.87 ▲	0.30 ▲	0.09 ▼	0.28 ▼	0.56 ▼	0.28 ▼	0.48 ▼	0.36 ▼	0.25 ▼	**0.50** ▲		

Note: The table shows the unweighted scores of all components as of 2023 (or latest available data point if 2023 was not yet released at the time 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 2022 to 2023 (or the latest available data point relative to the prior year). This year's fiscal and monetary policy space are computed based on expected developments over the year and are therefore tentative figures. The primer work on the E-RI was a collaboration between Swiss Re Institute and the London School of Economics.
Source: Swiss Re Institute

More resilient economies can better withstand and recover faster from shocks.

Macroeconomic resilience, the ability of an economy to withstand shocks and recover promptly, is a critical concept in today's volatile economic environment. Studies have highlighted that resilient economies not only better withstand adverse shocks but also return more rapidly to their pre-shock growth paths, minimising cumulative GDP loss relative to potential output.[1, 2] However, macroeconomic resilience involves inherent trade-offs, as policies that benefit resilience in the short term may inadvertently increase vulnerabilities in the long term. For example, accommodative monetary policy can prevent a financial collapse, such as after the global financial crisis, but may prolong economic weakness if it is coupled with actions such as a large expansion of central bank balance sheets.[3, 4] Similarly, fiscal policy can mitigate downturns,[5] but failure to maintain sound public finances constrains future fiscal responses. Our Macroeconomic Resilience Index (E-RI) is a comprehensive measure of an economy's ability to withstand shocks through monetary and fiscal resilience, and other structurally important factors.

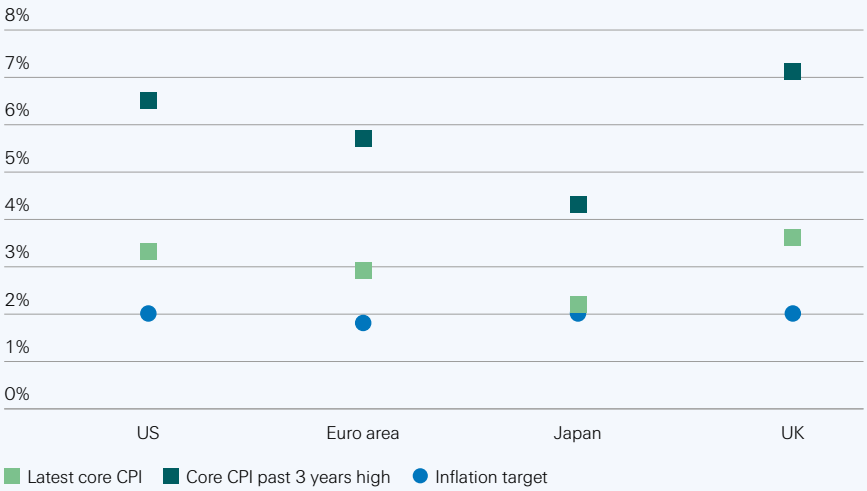
Our index shows the world economy has recovered all the resilience lost during the pandemic recession.

In 2023, our index shows that the world economy regained all the sharp loss in resilience created by the pandemic recession in 2020 and its recovery. However, the world ended 2023 still less resilient than prior to the global financial crisis (– 11%), as monetary and fiscal resilience remain below 2007 levels. In 2023, the index rose by 7% compared with 2022, replenishing countries' macroeconomic buffers against future shocks. Monetary resilience increased by 7% (+0.03) and fiscal resilience by 2% (+0.02).

Countries' monetary resilience has strengthened due to falling inflation while interest rates remained high.

Countries' monetary resilience has strengthened as inflation declined but central banks kept interest rates high (see Figure 1). Fiscal resilience was supported by real economic growth, which exceeded expectations in 2023, particularly in the US, with labour markets robust despite monetary tightening. The global gain was entirely generated by higher resilience in advanced markets, with no gain in emerging markets resilience in 2023. Since current fiscal resilience is effectively bought at the expense of future resilience, as fiscal deficits have to be unwound, there is a risk that the fiscal gain in 2023 may hamper growth and fiscal resilience in future years.

Figure 1
Core consumer price index inflation and central bank inflation targets in major economies



Source: BLS, Eurostat, SBJ, ONS, Macrobond, Swiss Re Institute

[1] R. Duval, J. Elmeskov, L. Vogel, *Structural Policies and Economic Resilience to Shocks,* OECD Economics Department Working Papers, no. 567, 2007.
[2] D. Sutherland, P. Hoeller, *Growth-promoting Policies and Macroeconomic Stability,* OECD Economics Department Working Papers, no. 1091, 2013.
[3] C. Borio, *The financial cycle and macroeconomics: What have we learnt?,* BIS Working Papers, no. 395, 2012.
[4] R. Bouis et al., *The Effectiveness of Monetary Policy since the Onset of the Financial Crisis,* OECD Economics Department Working Papers, no. 1081, 2013.
[5] X. Debrun, R. Kapoor, *Fiscal Policy and Macroeconomic Stability: Automatic Stabilizers Work, Always and Everywhere,* IMF Working Papers, no. 2010/11, 2010.

Advanced markets increased their resilience by 11% in 2023.

Advanced markets' resilience increased by 11% (+0.06) yoy, considerably stronger than the five-year average of a 1% increase, due to strengthening monetary resilience from falling inflation but still-high interest rates. Greece and Portugal saw the largest percentage increases, of 38% and 32% respectively. Greece's gain was primarily due to significant disinflation, to 3.4% from 9.6% in 2022. Portugal's increase was driven by economic growth of 2.3% in 2023, above the euro area average of 0.5%. The euro area experienced the largest gain in resilience of any region, rebounding from 2022's energy crisis and increasing by 13% (+0.07).

Emerging markets resilience was flat on the year.

Emerging markets saw no resilience gains in 2023. This is not unusual as these markets' resilience has been flat yoy on average for the past five years. China's macroeconomic resilience increased marginally in 2023, up by 0.3% compared to 2022. The strength of the US dollar was the key headwind for emerging markets in 2023. Despite falling back from its 2022 peak, the US dollar was about 12% above the 2013 – 2019 average when measured against a global currency basket. This weakened economies' growth, in turn putting pressure on their resilience.[6] Foreign direct investment to emerging markets decreased to 1.9% of global GDP in 2023 (versus an average of 2.5% since 2000).[7] This was attributed to investor risk aversion and the strength of the US dollar, which makes investments in emerging markets relatively less attractive and lowers their growth.[8] However, domestic demand generally held up well and proactive monetary policies to address inflation ensured stable monetary resilience.[9]

The biggest resilience climbs and falls of 2023

The UK and Canada were the top upward movers in the index in 2023.

The UK and Canada were the top upward movers in our macroeconomic resilience index in 2023. Canada rose to fourth place in 2023 from 10th in 2022, driven by a 10% increase in monetary resilience as the policy rate ended the year at 5% while inflation fell to 3.4%. Canada's fiscal resilience increased by only 0.1% but this was relatively better than the countries it overtook in the ranking, which saw decreasing fiscal resilience. The UK advanced to 10th place from 15th, with a 17% increase in overall macroeconomic resilience, primarily due to a 19% boost in monetary resilience as inflation fell from 10.5% to 3.9% and the policy rate rose to 5.25%.

The largest fall in ranking was New Zealand, to 14th place from 8th.

The largest fall in ranking was New Zealand, to 14th place from 8th, despite a 1% increase in macroeconomic resilience. New Zealand saw a decline in fiscal resilience of 3%, compared to an average increase of 2% for the countries that overtook it. Russia dropped from 26th to 30th place with a 14% decrease in macroeconomic resilience, driven by a 40% decline in monetary resilience due to 7.5% inflation at year end, and a significant drop in fiscal resilience to 0 as the current account balance fell from 10% to 2% and its primary balance weakened.

In 2024, resilience is likely to be tested as central banks cut interest rates while inflation remains sticky and debt levels rise in many regions.

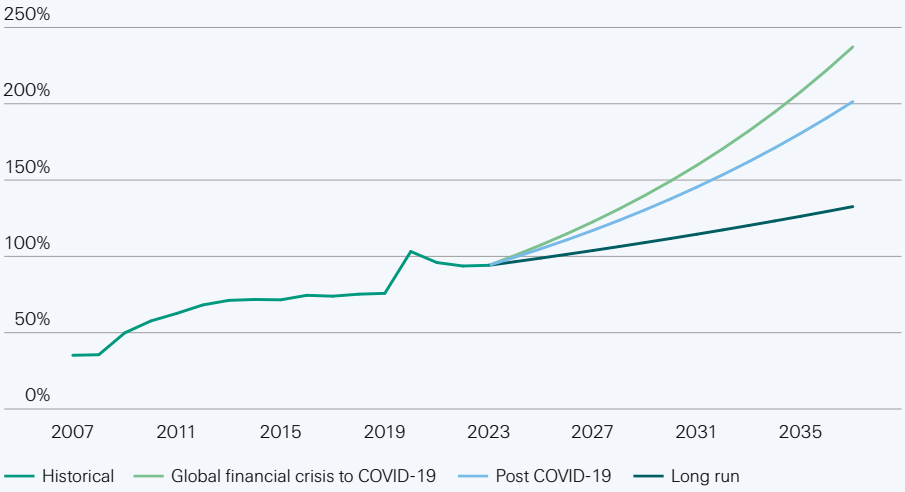
Our initial view of 2024 suggests a slowing rate of increase in global macroeconomic resilience, and declining monetary and fiscal resilience. We estimate a 1% increase in the global macroeconomic resilience index. Monetary resilience is expected to decrease by about 3% and fiscal resilience by 5%. Lower monetary resilience is driven by the combination of expected central bank interest rate cuts, and still sticky inflation in many regions. Fiscal resilience is expected to decline due to high debt levels in many countries, and lower US economic growth,[10] given the importance of the US to the world economy.[11]

Fiscal drag, as countries including France and the US unwind significant fiscal stimulus, will likely pressure fiscal resilience in 2024. Current US spending only leaves 14% of the budget for discretionary spending, posing headwinds to medium-term growth and

[6] Measured by the DXY, an index of the dollar against a basket of major currencies, for 2013 – 2019. M. Estevao, *Three ways a strong dollar impacts emerging markets,* World Bank, 4 August 2022.
[7] *EM BOP Capital Flows Monitor,* IMF, January 2024.
[8] Ö. Karahan, M Bayir, *The effects of monetary policies on foreign direct investment inflows in emerging economies: some policy implications for post-COVID-19,* Future Business Journal, no. 8, 2022.
[9] *2023: Domestic Demand Perseverance,* S&P Global, December 2023.
[10] *US economic outlook: cooling economy sets the stage for easing policy in 2H24,* Swiss Re Institute, 21 May 2024.
[11] M. Stocker et al., *Understanding the global role of the US economy,* Centre for Economic Policy Research, 27 February 2017.

forcing future policy trade-offs (see Figure 2).[12] In China and Europe, we expect a gradual strengthening in growth that should increase fiscal resilience.[13] The interaction of these countervailing forces will determine the path of global resilience.

Figure 2
The trajectory of US federal debt as a share of GDP under different assumed debt growth rates



Source: OMB, Federal Reserve Bank of St. Louis, Swiss Re Institute

Geoeconomic fragmentation can lead to structurally lower real GDP growth and higher inflation in the long term.

In the long term, rising geopolitical tensions and geoeconomic fragmentation represent key risks to global macroeconomic resilience. Estimates of the cost of geoeconomic fragmentation vary widely, but generally, studies indicate that deeper fragmentation is linked to deeper costs. According to the IMF, losses could range from 0.2% to 7% of world GDP, depending on the severity of the fragmentation and the time horizon.[14]

We expect the growth and inflation outlook to be less favourable than pre-pandemic.

We expect the outlook for global GDP growth and inflation to be less favourable than in the years prior to the COVID-19 pandemic. We forecast lower global real GDP growth and higher inflation on average in the next eight years (2024 – 2031) as geoeconomic fragmentation likely reverses the gains of past decades of economic integration. As many countries become more protectionist, more restricted movement of trade and capital would reduce private sector investment, growth and risk diversification. We forecast real GDP growth at 2.6% annually on average, compared with 3% annually on average in 2013 – 2019, and inflation at 3.3%, up from 2.6% on average previously. Lower growth typically necessitates lower policy rates to spur demand, yet higher inflation demands higher rates to weigh on demand. The challenge of navigating this trade-off highlights the importance of building resilience in economies.

Governments can proactively assess and address economic vulnerabilities.

To prepare for future shocks, governments can proactively assess vulnerabilities and invest in resilience with a long-term perspective. This could mean addressing income inequality, increasing insurance penetration or deepening financial markets. Such steps can fortify the structure of an economy, making it more resilient. Our previous *sigma* research has found that economic shocks disproportionately impact the lowest-income households, highlighting the need for policies that promote inclusive growth to mitigate these unequal outcomes.[15] Additionally, deeper financial markets correlate with higher insurance penetration and more efficient labour markets. And greater insurance penetration lessens the impact of shocks on public finances, thereby preserving fiscal space. Monetary and fiscal frameworks that balance flexibility and credibility are

[12] See *Budget and Economic Data*, Congressional Budget Office, accessed 5 June 2024.
[13] *Economic and financial risk insights*, Swiss Re Institute, May 2024.
[14] S. Aiyar et al., *Geoeconomic Fragmentation and the Future of Multilateralism*, IMF Staff Discussion Notes, no. 2023/001, 2023.
[15] *sigma no.3: Reshaping the social contract*, Swiss Re, May 2022.

optimal.[16,17] While minimal public policy intervention in private markets ensures that risk signals more accurately reflect reality, strategic interventions during crises remain crucial. However, setting clear timelines for exiting such policies can ensure economies return to self-sufficiency.

Uncertainty trends reinforce the need for resilience

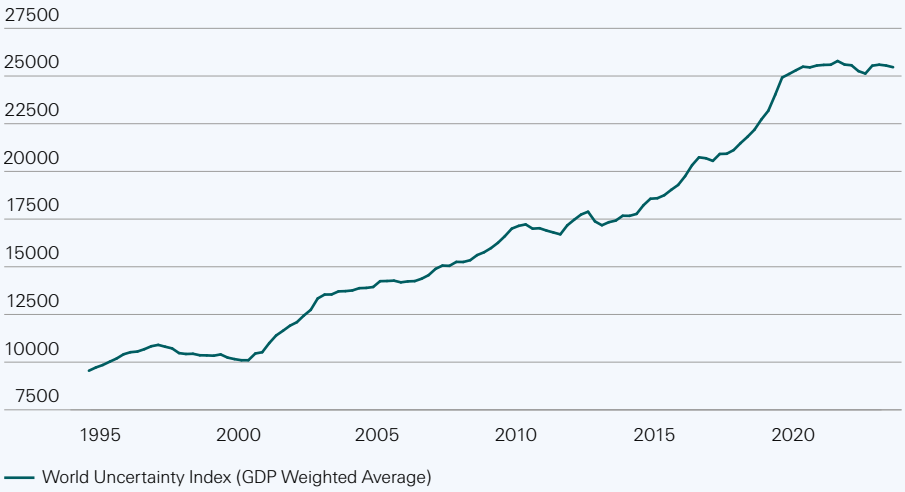
Insurance seeks to reduce the impact of the uncertainty inherent in daily life.

Insurance seeks to reduce the uncertainty inherent in daily life by protecting lives, incomes or assets from financial shocks. Resilience is the capacity to mitigate the impact of uncertainty with protection tools including insurance. Uncertainty has measurably risen substantially in the past 30 years (see Figure 3),[18] driven by fundamental economic, societal and physical climate changes.

We expect uncertainty to remain high due to structural trends.

We expect uncertainty to remain high in future years due to the structural trends impacting most countries, including geo- and domestic political tensions, deglobalisation, demographics, digitalisation, and climate change. This matters greatly to the insurance industry. Academic research has shown that higher economic uncertainty can lead to higher non-life insurance premium volumes, particularly in the long term, as households and businesses respond with heightened risk awareness.[19]

Figure 3
The World Uncertainty Index, 10y moving average



Source: Macrobond, Swiss Re Institute

In a world of increasing uncertainty, insurance resilience matters more than ever.

In a world of increasing uncertainty linked to growing geo-economic multi-polarity and tensions, insurance resilience matters more than ever. This is why we provide an update of our various insurance resilience indices and protection gap estimates across perils, regions, and time in the subsequent sections.

[16] A. Schick, *Post-Crisis Fiscal Rules: Stabilising Public Finance while Responding to Economic Aftershocks, OECD Journal on Budgeting*, vol. 2010/2, 2010.
[17] N. Pain, O. Roehn, *Policy Frameworks in the Post-Crisis Environment, OECD Economics Department Working Papers*, no. 857, 2011,
[18] See here for more information: *Home – World Uncertainty Index*. The index captures the frequency of the word "uncertainty" (or its variants) in quarterly EIU country updates for 143 countries. We view this as also relevant for insurance markets. Underlying paper for the methodological approach is from The World Uncertainty Index, H. Ahir, N. Bloom and D. Furceri. NBER Working Paper 29763, February 2022, available here: *The World Uncertainty Index (nber.org)*
[19] R. Gupta et al, *Asymmetric dynamics of insurance premium: The impacts of output and economic policy uncertainty*, 8 October 2016.

Insurance resilience: stable or gaining across perils as focus on insurance grows

Global insurance resilience was stable at 58% in 2023. The year saw gains in health resilience in emerging markets, higher life insurance coverage in mortality resilience, and higher incidence of more-insured storms among natural catastrophe losses. Still, more than 40% of risks were unprotected or uninsured across the crop, health, mortality and natural catastrophe perils. We estimate the global protection gap for all perils reached a new high of USD 1.83 trillion in 2023, up by 3.1% in nominal terms year-on-year from our revised estimate of USD 1.77 trillion for 2022. Since 2013, the global protection gap has grown at 3.6% annually in nominal terms, roughly matching global nominal GDP growth. Though the insurance resilience indices have improved encouragingly over the past 10 years, global composite and individual peril protection gaps remain very large. Much more is needed. Given substantially higher uncertainty than 10 years ago, further addressing factors that affect resilience is of key importance.

Insurance resilience stable despite risks in 2023

Our estimates indicate the insurance industry has kept pace with growing loss potential over the last decade.

SRI insurance resilience research assesses the contribution of insurance in helping households and businesses to better withstand financial shock events. The SRI Global Composite Insurance Resilience Index (I-RI) aggregates four resilience sub-indices: crop, natural catastrophes, health and mortality (death). Our estimated composite I-RI indicates that in relative terms, the insurance industry has kept pace with growing loss potential over the past 10 years, in both advanced and emerging regions (see Table 2). However, on a global level, the protection gap is still widening.

Global insurance resilience for all perils remained stable in 2023.

In 2023, the I-RI stayed stable at 58% compared to the previous year, helped by improvements in mortality and emerging markets' health resilience, offset by declines in health resilience in advanced markets. This implies that about 42% of global risks remain unprotected or uninsured, across the four perils. Emerging regions are still much less resilient than advanced, at 35% vs 70%, with slow progress in several areas. The key to improving global resilience lies in unlocking emerging economies' potential to catch up in the development of their public welfare systems and private insurance markets.

Table 2
SRI Global Composite Insurance Resilience Index and total protection gaps, by region

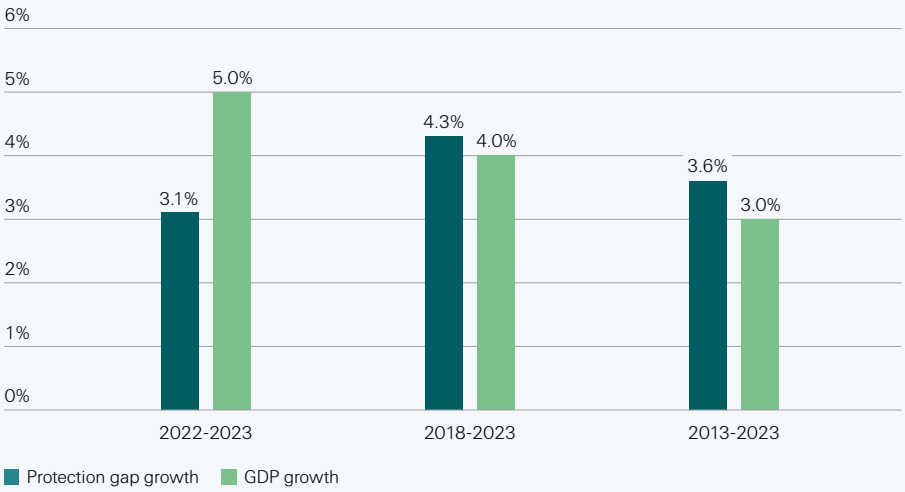
	Resilience index, %					Protection gap, USD bn				
	2013	2022	2023	1 year change	10 year change	2013	2022	2023	1 year change	10 year change
SRI Composite Insurance Resilience index	**56.7**	**57.5**	**57.9**	→	↑	**1 280**	**1 770**	**1 825**	↑	↑
North America	66.3	66.1	66.2	→	→	241	326	349	↑	↑
Latin America	41.8	50.4	50.5	→	↑	171	140	151	↑	↓
Advanced EMEA	72.2	71.5	72.3	→	→	166	197	198	→	↑
Emerging EMEA	35.8	33.7	34.8	↑	→	185	217	217	→	↑
Advanced Asia Pacific	51.6	51.0	49.7	↓	↓	147	157	165	↑	↑
Emerging Asia Pacific	23.1	28.9	30.2	↑	↑	370	727	740	↑	↑
Advanced markets	68.1	69.2	69.4	→	↑	554	677	711	↑	↑
Emerging markets	33.7	35.1	35.9	→	↑	726	1 092	1 113	↑	↑

Note: The global I-RI is weighted based on the share of protection gap for each peril in total protection gap. The value of I-RI ranges from 0–100%. The greater the value, the greater the protection relative to the needs and the higher the resilience. Protection gaps are measured in premium equivalent terms, which indicate the uninsured or unprotected portion of total protection needs. Crop insurance RI starts from 2014 due to data availability. Some historical values changed due to data revision or revised estimates.
Icons in the resilience index: ↑ improved; → almost unchanged; ↓ deteriorated. Icons for protection gap changes: ↑ widened; → almost unchanged; ↓ narrowed.
Source: Swiss Re Institute

We estimate the protection gap increased more than 3% last year, reaching USD 1.83 trillion.

We estimate the global protection gap reached a new high of USD 1.83 trillion in 2023. This is up bymore than 3% in nominal terms yoy from our revised estimate for 2022, and a cumulative 43% increase from 10 years ago. The protection gap has widened alongside economic development and inflation over the years. Since 2013, the global protection gap has grown at 3.6% annually in nominal terms, slightly above that of global nominal GDP growth (see Figure 4). Increases in both protection gap and resilience index indicate there is more to protect, yet an increasing share of the protection need is covered by private resources including insurance coverage and government-sponsored programmes. In 2023, the global protection gap increased by less than nominal global GDP, driven by declines in China's mortality protection gap and in India's crop protection gap.

Figure 4
Annual growth rates of the global protection gap and global GDP, in nominal terms



Source: Swiss Re Institute

Crop insurance increases food security, which is in turn beneficial for multiple economic factors.

Crop resilience supports food security and positive economic outcomes

Food security is positively linked with multiple economic development indicators, such as life expectancy, employment, poverty reduction and economic growth.[20] Crop insurance can reduce the financial burden from risks such as weather events and pests, reduces the need of farmers to borrow, stabilises production and farmers' income, and allows farmers to recover after a shock.[21]

Food security has international implications and is increasingly pressured by climate change.

Crop insurance has the potential to improve food security, both in domestic markets and globally as production of commodities such as cereals, sugar, palm oil and vegetables is highly concentrated in markets such as China, Brazil and Ukraine, with many countries depending on those flows.[22] The possible extent of damage to the agricultural sector due to climate change further highlights the need to build crop resilience today. For example, the US Department of Agriculture found that in a scenario of ongoing increases in greenhouse gas emissions, the cost of the US crop insurance programme would rise by 22% by 2080, even if farmers adapt their cultivation processes.[23]

[20] "Food security [...] has a positive relationship with economic growth at a coefficient of 2.8817", N. M. A. Manap et al, *Food Security and Economic Growth.* International Journal of Modern Trends in Social Sciences, 2(8), pp.108 – 118, 2019.

[21] For example, in a field study conducted in an Indian region, "a majority of farmers (87%) [...] found crop insurance beneficial and attribute it, at least partially, to their recovery from crop loss." D. S. Solomon et.al, 3. *Agriculture insurance in India: stakeholder perspectives on associated costs and benefits. Case studies in insurance effectiveness: Some insights into costs and benefits,* 2017.

[22] M. Al-Saidi, *Caught off guard and beaten: The Ukraine war and food security in the Middle East,* Front Nutr, 21 February 2023.

[23] A. Crane-Droesch et.al, *Climate Change and Agricultural Risk Management Into the 21st Century,* ERS, July 2019.

Increases in both the crop protection gap and resilience index show there is more to protect, but a rising share is insured.

A global crop protection gap of about USD 77 billion in 2023

The 10 years since 2014 have seen enormous progress on crop resilience (see Figure 5). The global crop protection gap is estimated at USD 77 billion for 2023, in US dollar premium equivalent terms. This is up by more than 40% in total since 2014 (USD 54 billion), or about 4% per year on average. Overall, protection needed and protection available have both risen strongly since 2014, with the latter doing so at a faster pace due to rising insurance penetration and more generous public insurance schemes. While there is more to protect, an increasing share of that amount is insured.

The parallel increases are caused by inflation and growth in the agricultural sector.

This apparent contradiction is in part driven by inflation, as rising prices for commodities and other farming inputs, and the growth of the agricultural sector, have increased protection needs in absolute terms. In the meantime, insurers usually do not immediately adjust capacity provided to price fluctuations. Agriculture in emerging markets such as China and India has also become more sophisticated. This has boosted both the quantity and value of what has to be covered and so the protection gap widened.

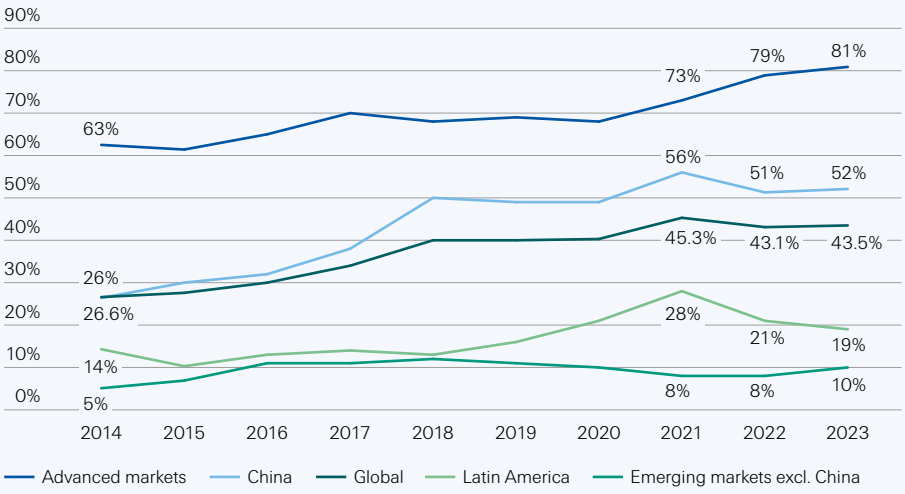
Crop insurance resilience was broadly unchanged in 2023 versus 2022, but rose by 17ppts since 2014.

The crop insurance resilience index is now valued at about 43%, a marginal increase versus 2022, but below its 2021 peak of 45%, with both annual moves mainly driven by China. This means about 57% of the insurable value of crop production is unprotected. The crop protection gap declined by 15% versus 2022. This was driven by India and was unrelated to economic factors. Removing India, the protection gap rose by 14% yoy.

We expect a renewed increase in the crop insurance resilience index in 2024.

We expect a renewed increase in the crop insurance resilience index in 2024, driven by expected strong agroinsurance premium growth in China (~ 20%) and ongoing impacts from the recently-reformed public agroinsurance programme in India.[24]

Figure 5
SRI Crop Insurance Resilience Indices



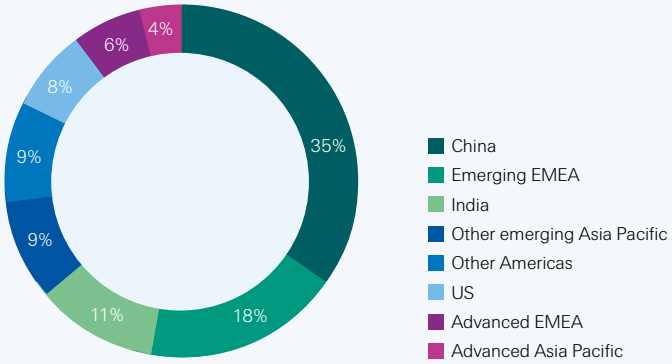
Source: FAO, Swiss Re Institute

[24] *India's insurance market: growing fast, with ample scope to build resilience,* Swiss Re Institute, 16 January 2024.

China and other big emerging markets are the key drivers of global crop resilience trends.

We added crop resilience – the main component of agroinsurance systems – to our resilience research in 2023.[25] More than 80% of global crop industry protection needs – which are directly proportional to the value of crop output – are located in emerging markets, which also typically suffer from lower insurance penetration. China alone accounts for more than a third of the total (see Figure 6).

Figure 6
Shares of global gross crop output by market, 2020-2022



Source: FAO, Swiss Re Institute

China has driven most of the global change in crop resilience.

Most of the global resilience gains of the past decade are due to improvements in China, where the government has made a coordinated and sustained push to support agroinsurance penetration.[26] In 2022, crop resilience in China registered an unusual decline of 5 percentage points (ppts), but that came after an outsized gain in 2021. This also explains the global fluctuations in resilience in that period. All the main regions we estimate have improved compared to 2014 except advanced EMEA, where resilience was already strong in 2014.

Table 3
The five largest global markets for crop output, and their SRI Crop Insurance Resilience Indices and protection gaps

Country	Rank by crop output	Share of global crop output (%), 2020 – 22	Protection gap (USD bn), 2023	Resilience index (%), 2023	Resilience index (%), 2014
China	1	34.9	11	52.1	26.4
India	2	10.9	25	13.1	7.2
US	3	7.5	0	100	74.2
Brazil	4	4.0	8	12.5	10.5
Indonesia	5	3.0	2	0.7	0.4

Source: FAO, Swiss Re Institute

There are other important nuances in the development of crop insurance schemes across countries.

In the US, the Federal Crop Insurance Program is widespread and includes generous subsidies, meaning that the protection gap in terms of production value fell to zero from an already limited amount in 2022 and 2023.[27] In India, the government has struggled to raise the penetration of its main crop insurance scheme, due to a lack of coordination between the central government, states and improperly informed farmers. However, the scheme was revamped in 2023 and this led to a sizeable increase in take-up, suggesting

[25] *Restoring resilience: the need to reload shock-absorbing capacity,* pp.16 – 20, Swiss Re Institute, 21 June 2023. The methodology is broadly unchanged but we reduced the number of markets in the sample from 28 to 13, focusing on large markets with robust data. This enables us to take a direct, premium-based approach to sums insured, to extend estimates back to 2014, and to strengthen their validity. However, several subregions such as Emerging EMEA cannot be proxied accurately anymore.
[26] *Fostering Rural Resilience: A Closer Look at China's Agricultural Insurance Pilot,* World Bank, 16 July 2020.
[27] *Crop Insurance at a Glance,* USDA, consulted 1 May 2024. Importantly, the USDA usually refers to protection gaps in terms of surface insured, yielding a lower share of protection needs being covered, compared to value-based Swiss Re Institute estimates.

further upside in crop resilience in India in the coming years.[28] Some big emerging markets in our sample, such as Indonesia, Colombia and Nigeria, have almost negligible crop insurance penetration, highlighting that resilience would benefit from even modest innovations and improvements.

Crop resilience and the El Niño-Southern Oscillation in Latin America

ENSO and its three phases impact rainfall and temperatures in Latin America, to varying degrees.

El Niño-Southern Oscillation (ENSO) and its three phases (El Niño, La Niña and Neutral) are fluctuations in sea surface temperatures of the Pacific Ocean. Typically, ENSO impacts rainfall patterns around the world to different degrees, sometimes resulting in extremes – floods (excess rainfall) and droughts (rainfall deficit). Latin America is particularly exposed to the extreme weather conditions that ENSO can trigger. For example, El Niño is associated with droughts in northern South America, while La Niña is associated with droughts in other parts of the continent.[29,30]

Droughts that may have been partly caused by La Niña had major consequences for crop production.

Droughts have major consequences for crop production, increasing crop losses and raising food security concerns. The rainfall deficit between 2019 and 2022 driven by La Niña affected most of central South America, including Argentina, Brazil, Chile and Uruguay.[31] This dry period coincided with the lowest observed soybean yields in the decade in Uruguay, for the 2022 – 2023 season. Soybean exports in May 2023 were reduced to 65% of what was recorded a year before. Brazil, the world's largest soybean exporter, experienced persistent drought from La Niña conditions during 2020 – 2022, affecting crop production. The associated yield shortfalls have contributed to rising food prices globally. In Brazil, food inflation was reported at 8% in 2021.

The severe weather can exacerbate Latin America's already-high crop protection gaps.

The severe weather events brought by El Niño in 2023 – 2024, and potentially also by La Niña this summer, can exacerbate the already-high agriculture protection gaps across Latin America. We estimate the region's crop protection gap at USD 15 billion in premium equivalent terms. The crop resilience index (19% in 2023) has improved since 2014 due to higher insurance penetration and government policies to promote uptake. However, the index is still well below the global average (43.5% in 2023).

Insurance losses reported during ENSO episodes can be severe and disruptive for re/insurance.

Insurance losses reported during ENSO episodes can be severe and disruptive for the agriculture re/insurance business.[32] The financial impact can be immediate, with liquidity reduced for reserves and the payment of future losses. Adaptation and mitigation measures are needed to safeguard agriculture production from effects caused by ENSO. This means that then insurance can compensate for random and unpredictable losses caused by events that the industry can model explicitly. Those measures include, but are not limited to, crop diversification, water conservation, early warning systems and the use of drought-resistant crop varieties.

Higher insurance penetration improves crop resilience, with several levers that can be pulled.

Crop resilience needs strengthening further in almost all markets to offset evolving risks such as from climate change or geopolitics. Rising insurance penetration can contribute to this. This could be facilitated by stronger coordination between stakeholders, including public-private partnerships. Additional actions to improve crop resilience can include further usage of relevant products such as parametric insurance, which is already widely in use; more reinsurance coverage, investments into relevant infrastructure and into educational programmes and digitalisation of underwriting, risks management and product distribution.

[28] *Number of farmers under PM's crop insurance scheme rises by 27% in 2023 – 24*, BFSI, 6 March 2024.
[29] *Climate impacts of the El Niño–Southern Oscillation on South America | Nature Reviews Earth & Environment*
[30] *ENSO and agriculture: exploring the risks for insurance portfolios*, Swiss Re, 26 February 2024.
[31] Vulnerability and high temperatures exacerbate impacts of ongoing drought in Central South America, World Weather Attribution, 16 February 2023.
[32] *ENSO and agriculture*, op. cit.

Natural catastrophe resilience: aided by a year of better-insured storms

Large natural disasters can cause significant asset and output losses.

Floods, earthquakes and severe storms are major threats to society. In addition to loss of life and bodily injury, natural catastrophes can inflict damage to property, reducing both wealth and productive capacity, potentially resulting in significant financial losses on both macro and micro levels. The total cost typically reflects both the severity of the initial damage and how swiftly reconstruction can be completed. This is why insurance can play a protective role.

Insurance can enable faster reconstruction and recovery.

By providing compensation for losses, insurance can help households and businesses to better endure post-catastrophe disruption and underpin reconstruction. This promotes economic growth and contributes to a country's overall financial resilience to major disruption. The European Insurance and Occupational Pensions Authority (EIOPA) estimates that a large-scale disaster, causing direct losses of more than 0.1% of GDP, can reduce a country's GDP growth by around 0.5 ppts in the quarter of impact if the share of insured losses is low, e.g. below 35% of the total.[33]

The protection gap rose 5.2% to a record USD 385 billion in 2023.

The global natural catastrophe protection gap rose by 5.2% yoy to USD 385 billion in premium equivalent terms in 2023, reflecting economic growth and inflation.[34] Global protection available increased by 10.1% yoy in 2023, greater than the 6.3% yoy rise in protection needed, resulting in improved resilience, an encouraging underlying trend in risk protection. These growth rates indicate that although there are more, or more expensive, assets to protect, an increasing share of them are covered by insurance. This is a positive trend for global resilience if it continues in the long term.

The global natural catastrophe resilience index rose to 25.7% in 2023, 90 bps higher yoy.

Overall, catastrophe loss activity in 2023 featured a high proportion of severe convective storms, especially in the US, a peril that is relatively more insured than others such as tropical cyclones or floods. As a result, the global natural catastrophe resilience index rose to 25.7%, 90bps above 2022 and 190bps above its level in 2013. Still, global resilience to natural disasters is low, with almost three quarters (74%) of exposures not protected by insurance.

Table 4
SRI Natural Catastrophe Insurance Resilience Indices and protection gaps

	Resilience index, %				Protection gap, USD bn			
	2013	2022	2023	1 year change	2013	2022	2023	1 year change
SRI Natural Catastrophe Resilience Index	**23.8**	**24.8**	**25.7**	↑	**258**	**366**	**385**	↑
North America	39.1	38.7	39.1	↑	67	119	129	↑
Latin America	10.7	8.7	9.4	↑	26	27	30	↑
Advanced EMEA	41.1	46.3	47.3	↑	23	24	26	→
Emerging EMEA	6.3	6.0	6.2	→	40	48	48	→
Advanced Asia Pacific	23.2	27.1	28.2	↑	42	40	39	→
Emerging Asia Pacific	4.1	4.6	4.8	↑	60	109	113	↑
Advanced markets	35.2	37.6	38.4	↑	133	183	194	↑
Emerging markets	6.2	5.6	5.9	↑	125	184	190	↑

Icons for resilience index changes: ↑ improved; → almost unchanged; ↓ deteriorated. Source: Swiss Re Institute

By region, resilience is highest in advanced EMEA.

By region, resilience remains highest in advanced EMEA, followed by North America and advanced Asia Pacific (see Table 4). This reflects the existence of robust private insurance and/or national disaster protection sectors, which help businesses and homeowners to manage the financial fallout from natural catastrophes. In all these regions the index was higher last year than in 2022. This was primarily due to a higher frequency of storms, which are relatively more insured than other perils. Though the I-RI for advanced Asia Pacific improved by 110bps to 28.2%, about 72% of potential natural catastrophe losses in the region were uninsured.

[33] *Policy options to reduce the climate insurance protection gap*, EIOPA discussion paper, April 2023.
[34] Please refer to the Appendix for details of the methodology.

France has the highest index score.

By country, the populations of France, Denmark, the UK, Norway, Australia and New Zealand were most protected against natural catastrophe risks in 2023 (see Table 5). It is also encouraging to see that the list of the countries with resilience at 75 or higher has increased to six, from three in 2022.

Table 5
SRI Natural Catastrophe Insurance Resilience Indices: scores, rankings and protection gaps by country

	Natural Catastrophe I-RI		Protection gap, USD bn
	Index (%)	Rank	
France	83	1	0.9
Denmark	82	2	0.1
UK	81	3	0.7
Norway	79	4	0.1
Australia	76	5	1.1
New Zealand	75	6	0.4
Luxembourg	71	7	0.02
Sweden	65	8	0.1
Hong Kong	63	9	0.1
Ireland	63	10	0.1
Switzerland	61	11	1.2
Belgium	58	12	0.8
Israel	53	13	0.4
Czech Republic	50	14	0.2
Poland	50	15	0.4
Canada	47	16	2.1
Germany	47	17	4.9
Austria	45	18	1.5
US	39	19	120
Netherlands	36	20	1.5
Turkey	30	21	1.4
Chile	29	22	2.5
Japan	25	23	29.6
Portugal	20	24	1.9
Colombia	19	25	0.8
Mexico	18	26	4.8
South Africa	18	27	0.5
Italy	16	28	8.1
Ecuador	15	29	0.5
Taiwan	12	30	7.7
Thailand	12	31	2.9
Brazil	10	32	1.0
Peru	10	33	0.9
Uruguay	10	34	0.4
India	7	35	8.3
Indonesia	7	36	5.3
Philippines	7	37	19.1
China	5	38	59.8
Greece	5	39	1.2

Resilience index score (%)

<25	25–50	50–75	>75

Source: Swiss Re Institute

Natural catastrophe resilience globally has improved over the past 10 years.

The past 10 years have seen slow improvement in the global natural catastrophe I-RI, to 25.7% in 2023 from 23.8% in 2013. However, the key driver has been a strong rise in advanced markets resilience, which increased to above 38% in 2023 from around 35% in 2013. In emerging markets, resilience is still very low, with some regions almost entirely unprotected from natural catastrophe risk. The emerging markets aggregate I-RI has actually marginally declined over 10 years, to 5.9% last year from 6.2% in 2013. This primarily reflects the rapidly growing index weight of China, which has rising but still low resilience, as well as the quality of data in emerging markets.

Affordability may become more acute.

Increasing natural catastrophe insured losses are leading to rising prices for insurance cover and diminishing capacity in some countries. For consumers, this worsens insurance affordability, which may eventually lead to widening of protection gaps. In the past three years, in countries such as the US, the UK and Australia, rises in personal property insurance premiums have significantly outpaced CPI inflation and disposable income growth.[35] So far there has been little evidence that a lack of affordability of property catastrophe insurance is jeopardising resilience gains, but it is yet to be seen if this remains so in the future.

[35] *sigma* 3/2024, World insurance in 2024: Upgrading global resilience with a new lease of life, Swiss Re Institute, 16 July 2024.

An efficient and modern health system alongside private medical insurance is conducive to economic prosperity.

Health resilience: emerging markets and Europe are stronger

Comprehensive, efficient and digitalised healthcare systems are conducive to long-term economic prosperity. There is widespread evidence that public healthcare spending is associated with stronger economic outcomes and more productive societies.[36] Post-pandemic, governments are taking action to address health system vulnerabilities, including infrastructure expansion, primary care modernisation, addressing staff shortages and digitalising health services.[37] But public resources are limited. Consumers increasingly need to have complementary private medical insurance (PMI) to cover catastrophic out-of-pocket (OOP) healthcare expenses. PMI can also enable faster access to services when health stresses hit. We capture this additional protection needed in our health resilience index and protection gap.[38]

Table 6
SRI Health Insurance Resilience Indices and protection gaps

	Resilience index, %				Protection gap, USD bn			
	2013	2022	2023	1 year change	2013	2022	2023	1 year change
SRI Health Resilience Index	**76.4**	**77.7**	**77.7**	→	**706**	**892**	**940**	↑
North America	92.7	94.1	93.9	↓	114	130	140	↑
Latin America	61.0	73.3	73.1	↓	88	55	56	↑
Advanced EMEA	78.7	78.7	79.8	↑	115	130	127	↓
Emerging EMEA	55.0	55.3	55.4	↑	81	80	82	↑
Advanced Asia Pacific	63.2	60.4	57.0	↓	74	84	94	↑
Emerging Asia	28.5	34.5	36.5	↑	235	413	441	↑
Advanced markets	86.8	88.6	88.6	→	303	344	361	↑
Emerging markets	45.7	46.4	47.0	↑	403	548	579	↑

Note: Health I-RI methodology is updated to reflect the level of protection needed and available provisioned by the private sector. Current and historical estimates were also updated with new incoming data. Icons for resilience index changes: ↑ improved; → almost unchanged; ↓ deteriorated. Icons for protection gap changes: ↑ widened; → almost unchanged; ↓ narrowed. Source: Swiss Re Institute

The global health protection gap rose 5.4% to a record USD 941 billion in 2023.

The global health protection gap increased by 5.4% to a record USD 940 billion in 2023 (see Table 6). The growth rate in 2023 was above the historical trend (CAGR 2013 – 2022: 2.9%), driven by structural factors (medical technology progress, utilisation and economic development) and cyclical ones (medical inflation) that affected both advanced and emerging regions.[39]

Global health resilience is stable at 77.7% in 2023.

Our global health I-RI was stable at 77.7% in 2023, 130bps above its level of 10 years ago. This implies a still untapped global coverage of about 22% to be met by additional private medical insurance. On net, advanced markets maintained a high level of healthcare resilience at 88.6% in 2023, but with different trajectories in the regions. Emerging markets continued to gain resilience, a long-term trend driven primarily by the fast growth in protection available in emerging Asia.

Emerging markets are seeing rapid take-up of affordable online private medical insurance.

Emerging Asia has the highest regional protection gap worldwide, and accounts for 76% of the emerging markets gap in 2023. Still, resilience in the region is improving as a result of healthcare system development, including the swift take-up of affordable online private medical insurance and government-endorsed inclusive medical products. Much more is still needed, though. Some states in eastern Europe stand to benefit from EU funding to improve their healthcare systems (eg, Bulgaria, Estonia) that may benefit PMI.

[36] V. Raghupati and W. Raghupathi, "Healthcare Expenditure and Economic Performance: Insights From the United States Data", Front Public Health, 2020.
[37] *Health-related measures in the national recovery and resilience plans,* European Parliamentary Research Service, September 2023.
[38] For our methodology: *sigma 2/2023, Restoring resilience: the need to reload shock-absorbing capacity*
[39] Medical inflation tends to be higher than general inflation and materialise with up to 13-month lags. Source: *Milliman, "Medical inflation: Drivers and patterns", 2 February 2023*

North America's resilience marginally declined due to faster growth in price and use of private health insurance.

Health resilience in North America declined marginally in 2023 but remains the highest globally. In the US, Medicaid enrolment declined but direct-purchase insurance, particularly Marketplace plans, increased. Private health insurance spending in 2023 should have grown 7.7% (vs 3% in 2022), related to faster growth in use and prices. This increases the growth of OOP health spending and the health protection gap. Still, we expect the peak to be temporary as some of the Inflation Reduction Act provisions should help to lower OOP expenses from 2024.

Advanced EMEA is more resilient due to regulatory changes and rises in compulsory PMI schemes.

The advanced EMEA region became more health resilient in 2023 and its health protection gap declined. Regulatory changes and gradual shifts in healthcare system functioning and capacity have slowly lowered stressful OOP spending and increased the available protection, for example through a rise in compulsory private insurance schemes such as in the Netherlands, France, Germany, and Switzerland.[40] Digital health capacity is being bolstered by national strategies to optimise use of medical resources, increase care quality and improve access. This is positively impacting public and private medical protection available, and thus resilience.

Advanced EMEA markets will likely adopt value-based healthcare schemes to help contain rising costs.

Advanced EMEA countries also face rising health expenses over the medium term. To help contain these, we expect to see incremental adoption of value-based healthcare schemes – a health delivery model that compensates providers based on health outcomes rather than delivery fees – with Spain likely to be in the frontline.[41] This should help slow protection gap growth, amid ageing demographics facing more chronic diseases, co-morbidities, and costlier medical treatments.

Ageing and price pressures weighed on advanced Asia Pacific in 2023.

Health resilience declined in advanced Asia Pacific in 2023, as protection gap growth outpaced that of available protection. Growing elderly populations and staff shortages are putting strain on healthcare capacity in some markets, while higher inflation in Japan added to its health protection gap. Healthcare reform in South Korea should increase private medical insurance take-up in the coming years.

Global mortality resilience: improved, but still weaker than in 2014

Mortality protection helps to strengthen household financial resilience and can support economic growth.

Mortality protection is one of the key value propositions of life insurance, helping to absorb death risk and strengthen household financial resilience. In addition to savings products, life insurers are among the largest institutional investors globally, and so are providers of long-term finance to the economy. One study found that a 1% increase in life premium could raise real GDP growth by 0.06%.[42] Thus, the growth of life insurance can both improve global mortality resilience and further stimulate economic growth.

Global mortality resilience improved in 2023, our index rising to 44.4%.

Global mortality resilience improved in 2023, our index rising to 44.4% from 43.4% in 2022. However, households still lack more than half (about 56%) of the assets they require to fully offset the impact of the unexpected death of a breadwinner. Global mortality resilience is also still below the 46.5% level of 10 years ago, driven mainly by declines in advanced markets in North America and Western Europe. The prolonged period of low interest rates from 2008 until the inflation surge after 2021 put huge strain on the traditional life insurance business model and made saving products in particular less attractive.[43]

[40] Most Western European countries either have universal healthcare or are very close to achieving universal healthcare. A range of funding models exist. Most funding for universal healthcare comes from public sources, either via taxation or compulsory insurance schemes. Some countries, such as France and Germany, employ a split public-private healthcare system, while a few, such as Switzerland, rely heavily on private institutions. Co-payment systems (eg, Switzerland, South Korea) create a market for insurance.

[41] "Europe Healthcare Key View", BMI FitchSolutions, 13 May 2024.

[42] C. Lee, C. Lee, Y. Chiu, *The link between life insurance activities and economic growth: some new evidence,* Journal of International Money and Finance, vol. 32, February 2013.

[43] *sigma 2/2024:* Life insurance in a higher interest rate era, Swiss Re Institute. 27 May 2024.

The global mortality protection gap remained flat at USD 414 billion, on the back of a drop in China.

The global mortality protection gap stayed flat at USD 414 billion in premium equivalent terms in 2023, as a rebound in life insurance premium growth helped to raise protection available even as higher inflation and strong nominal wage growth increased protection needs. China in particular saw a significant reduction in its protection gap, due to slower growth in income replacement and a decline in debt as households deleveraged amid a property market downturn (see *Mortality resilience in China: life insurance is a key driver*). This reduction largely offset the protection gap rises seen in other regions. The gap is now USD 106 billion (about 34%) larger than in 2013.

We expect the global mortality protection to narrow in 2024.

The global mortality protection gap is likely to narrow in 2024, given progressive disinflation and robust momentum in life insurance. We estimate that global risk premiums will rise by above 2% in real terms this year, which in turn increases the protection available. Higher interest rates have reshaped the business environment for the life insurance industry, while making products more attractive to consumers.[44] We expect that higher interest rates will gradually improve pricing of protection business, positively impacting the mortality resilience index.

Table 7
SRI Mortality Resilience Index and protection gaps

	Resilience index, %				Protection gap, USD bn			
	2013	2022	2023	1 year change	2013	2022	2023	1 year change
SRI Mortality Resilience Index	**46.5**	**43.4**	**44.4**	↑	**308**	**414**	**414**	→
North America	55.0	51.5	51.6	→	60	76	79	↑
Latin America	36.7	46.1	46.6	↑	49	38	42	↑
Advanced EMEA	70.7	64.4	63.6	↓	27	40	42	↑
Emerging EMEA	33.7	27.3	30.1	↑	65	81	79	↓
Advanced Asia Pacific	58.8	59.2	60.4	↑	31	31	30	↓
Emerging Asia Pacific	23.2	27.6	28.3	↑	76	147	142	↓
China	31.0	36.0	38.3	↑	39	82	74	↓
Advanced markets	60.8	57.4	57.4	→	118	147	151	↑
Emerging markets	30.7	30.9	32.5	↑	189	267	263	↓

Icons for resilience index changes: ↑ improved; → almost unchanged; ↓ deteriorated. Icons for protection gap changes: ↑ widened; → almost unchanged; ↓ narrowed. Source: Swiss Re Institute

In advanced markets, mortality resilience remained flat last year, while improvements were in all regions in emerging markets.

Advanced markets' mortality resilience was flat at 57.4% in 2023, with varying trajectories across regions. Stable resilience in North America and improvements in advanced Asia Pacific both helped by growth of life insurance were partially offset by a deterioration in advanced EMEA, which reflected a rise in household debt. Euro area debt volumes reached an all time high of EUR 5.2 trillion at the end of 2023.[45] Standing at 32.5% in 2023, emerging markets' mortality resilience improved in all regions, while the protection gap decreased due to the decline in China. In emerging Asia excluding China, the protection gap continued to increase as income has grown faster than insurance coverage.

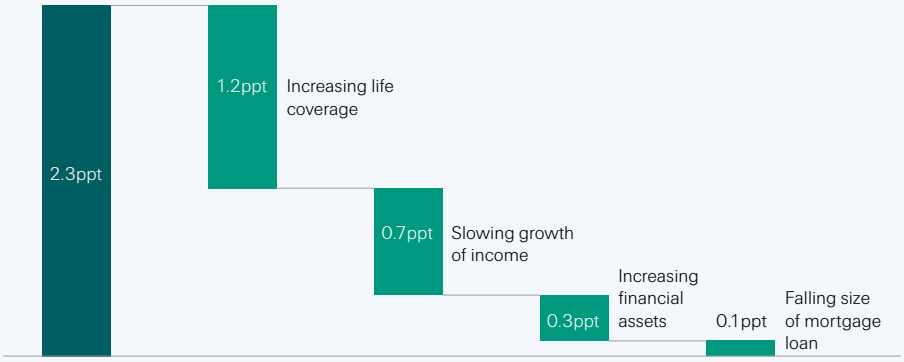
[44] Ibid.
[45] *2.1 Loans to households (euro-area-statistics.org)*

China's mortality protection gap narrowed by 6% to USD 73.6 billion in 2023, we estimate.

Mortality resilience in China: life insurance is a key driver

China's mortality protection gap narrowed by 6% yoy to USD 73.6 billion in 2023, raising its resilience index to 38.3% from 36.0% in 2022. We estimate that greater life insurance coverage contributed 1.2ppts of the 2.3ppts improvement in China's mortality resilience. Slowing growth in household income and a decline in the size of mortgages, due to economic weakness and structural headwinds, especially in the property market, resulted in lower growth in protection needed than protection available (see Figure 7). We expect China's protection gap to remain stable or decline slightly in the near term due to the weaker economic backdrop. This is expected to contribute to stabilising the overall protection gap in Asia, and so a steady level of resilience as a result.

Figure 7
Key drivers of the improvement in mortality resilience for China, 2023



Source: Swiss Re Institute

The strengthening of mortality resilience in 2023 is seen across 31 provinces of China.

The strengthening of mortality resilience in China is seen across its 31 provinces,[46] on the back of robust growth of the life sector. For instance, life insurance nominal premiums in Beijing and Shanghai rose notably by 21% and 25%, respectively, driving the resilience index to increase by almost 5ppts and 4ppts to 53%/43% respectively, as the highest improvement across all regions. However, we also found significant disparity in mortality resilience across provinces, ranging from less than 15% to more than 50%, and in 21 provinces (or 68% of China) the index is lower than the national level. The average index of provinces below the 40th percentile is around 30%, about 9 percentage points lower than the national level.

Life insurance is a key factor affecting mortality resilience among regions.

Life insurance is a key factor affecting mortality resilience among regions, with a significant positive relationship between the penetration of life insurance and their resilience scores. Southeast China has the highest per capita GDP (USD 15 394), and the resilience index is around 4ppts lower than that of North China, in which the life insurance penetration is higher (2.7%). Similarly, Northeast China (including Heilongjiang, Liaoning and Jilin provinces) has a lower per capita GDP than the other regions, but its insurance penetration (2.9%) is the highest in the country, thanks to government promotions for the development of private insurance products, such as small amount life insurance. This suggests life insurance is becoming an effective financial tool to address mortality risk, especially in less economically developed areas.

[46] China's provinces are classified into five regions: North, Northeast, Northwest, Southeast and Southwest China, reflecting their geographic proximity, economic development and social cultural similarity.

Table 8
SRI Mortality Resilience Indices and protection gaps, and macroeconomic indicators of China's provinces, 2023

Regions	Provinces	GDP (USD trn)	GDP per capita (USD)	Life insurance penetration, %	Mortality protection gap (USD bn, premium equivalent)	Resilience index, %
North	Beijing, Tianjin, Hebei, Shanxi, Henan, Shandong	4.0	11 537	2.7	16.4	44
Southeast	Hubei, Hunan, Jiangxi, Anhui, Jiangsu, Shanghai, Zhejiang, Fujian, Guangdong, Hainan	9.0	15 394	2.2	34.4	40
Northeast	Heilongjiang, Liaoning, Jilin	0.8	8 763	2.9	4.9	34
Northwest	Inner Mongolia, Ningxia, Gansu, Shaanxi, Tibet, Qinghai, Xinjiang	1.4	10 850	1.8	6.4	30
Southwest	Yunnan, Guizhou, Sichuan, Chongqing, Guangxi	2.4	9 441	1.6	11.4	31

Source: National Bureau of Statistics of China, National Financial Regulatory Administration, Swiss Re Institute

In China, the contribution of life insurance to available protection against mortality risk (35%) was lower than elsewhere in Asia.

Yet we found that in China, the contribution of life insurance to available protection against mortality risk (35%) was lower than both in Asia's advanced markets (64%) and major emerging Asian markets (Malaysia: 65%, Thailand: 63%) in 2023. This is partly due to a still relatively low life insurance penetration of 2.1% in China, compared to 6.8% in Japan, 5.0% in Korea, and 3.7% in Malaysia. We expect the fast-ageing demographic structure and rising risk awareness to drive demand for life insurance products and continue to yield increases in insurance penetration over the next decade. We estimate that when life insurance penetration in China increases by 1%, the mortality resilience index could increase by 6ppts.

Appendix: Index methodologies

Table 9
Components of the SRI Macroeconomic Resilience Index

Indicator	Weight	Source	Definition of indicator	Rationale
Macro buffers				
Fiscal resilience	35%	Swiss Re, based on data from World Bank (WB)/IMF and Swiss Re forecasts	An empirical estimate of an economy's room to use fiscal policy without risking a fiscal distress situation. This includes the level of government debt and external debt as a percent of GDP, government effectiveness, the current account balance, actual real GDP growth rates over a three-year period and potential growth rates.[A] For emerging markets, we include FX pressures.	We consider fiscal policy the most important policy tool to mitigate the length and depth of an economic shock.
Monetary policy resilience	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.
Macro structural elements				
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).[B]	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.
Income inequality	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 fare 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.
CO_2 emissions[C]	2%	International Energy Agency (IEA)	Relates CO_2 emissions to GDP.	Climate change has disruptive effects on global supply chains and infrastructure. This negatively impacts government finances, firms' capital, and household wealth.[D]

[A] 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 resilience indicator instead of the monetary policy resilience 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.
[B] Regulatory filings such as banks capital positions are not available for all countries and for a sufficient amount of time.
[C] This indicator replaces the Low Carbon Economy time series from Maplecroft that was previously used.
[D] *Climate change: a core financial stability risk,* IIF, 2019.
Source: Swiss Re Institute

The SRI Composite I-RI is a weighted average of I-RIs of the four perils.

SRI Composite Insurance Resilience Index and protection gap

The SRI Composite I-RI aggregates the four I-RI for Crop, NatCat, Mortality and Health for any country or region. It a weighted average of the I-RIs of the four perils with the average respective protection gaps used as weights. In years prior to 2016 for which crop I-RI is not available, the 2016-2022 numbers are back-casted assuming it evolved proportionally to the average of the other three indices.

The composite protection gap sums the protection gaps for the four perils, in premium equivalent terms.

Similarly, the composite protection gap is the aggregation of protection gaps for the four perils, in premium equivalent terms. To create this we sum the protection gaps of all four perils from 2016 till 2022. For years prior to 2016, the composite protection gap is the summation of protection gaps of the three perils, excluding crop, because the numbers are only available from 2016.

The SRI Crop insurance protection gap is the difference between protection needed and available.

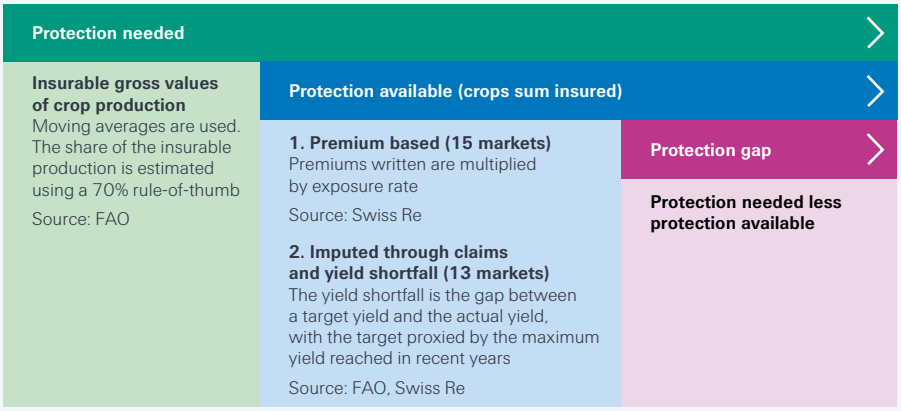
SRI Crop Insurance Resilience Index

We calculate the crop insurance protection gap as the difference between the insurable market value of the gross crop production (the "protection needed") and maximal losses covered by the crop insurance, that is sums insured (the "protection available"). Although agroinsurance market structures vary widely, sums insured include both private and public covers, as long as premiums are collected and protection allocated through insurers. The 28 countries in our sample cover around 75% of global crop production.

The gap shows how much of crop production may not be recovered from insurance.

From a farmer's point of view, the gap indicates how much of the overall insurable gross market value of the production would not be recovered from insurance after an event. Perils may include natural hazards which also impact property, but the availability of insurance for property is covered in the NatCat I-RI.

Figure 8
The building blocks of the SRI Crop Insurance Resilience Index



Note: as two different approaches are combined, there may be inconsistencies in results and what drives them. In particular, premiums are determined before an event, while claims and yields are known ex-post, so the time element differs. Limited overlap meant it was not possible to cross-check conclusions.
Source: Swiss Re Institute

We use two approaches to estimate sums insured, due to data availability.

Sums insured are estimated by combining two approaches for two different groups of markets. In some markets, sums insured are obtained by combining agro insurance premiums written with premium rates. For other countries, we combine claims paid with crop yield performance. An excess of yield directly implies there was no protection gap, while a shortfall of yield combined with the attainable yield and claims paid gives an estimate of sums insured.

SRI Natural Catastrophe Insurance Resilience Index

Our natural catastrophe risk assessment model generates expected loss distributions for the major perils.

Swiss Re's proprietary global natural catastrophe risk assessment model generates expected loss distributions for the major perils: earthquakes, tropical cyclones, extratropical cyclones (winter storms in Europe), severe convective storms and floods. We use the latest updated model versions for 34 countries and recently added modeled exposures to severe convective storms for 12 countries (of the existing 34) with the largest exposures. We use these probabilities, along with estimated market portfolios of economic and insured values, to estimate the current annual expected economic and insured loss caused by each peril in a country. Based on these simulations, expected losses in 39 selected countries were calculated, extending the list in this edition from 34.

The protection gap in this report is based on expected economic and insured losses.

The protection gap in this publication is based on expected economic losses and expected insured losses derived from our modelled estimates of natural catastrophe exposures in each country in a given year. It is given in premium equivalent terms. This differs from the protection gap cited in our annual natural catastrophe *sigma* studies, which is calculated as the economic losses minus insured losses based on actual events in a year. Premium equivalent protection gaps are normally higher than those based on loss estimates, since premiums also cover insurers' costs, reserving and more.

Data inputs include country output, insurance cover and risk exposures.

Data inputs are GDP by country, insurance cover by country and peril, and risk exposure and property concentration by locality. Availability of exposure data is limited, mostly to advanced markets. Hence, we supplement the probabilistic model-based losses with expected loss estimates for another 76 countries from the United Nations Office for Disaster Risk Reduction's *Global Assessment Report* (GAR), scaled up to current level using econometric models (see GAR 2015). Regional index values back to 2000 are derived by backcasting the current loss estimates for 2023, based on changes in the share of average historic insured vs economic losses for a region, as per Swiss Re's *sigma* disaster loss data. We do this at a regional level for better historical data density resulting in good estimates of loss shares.

SRI Health Insurance Resilience Index

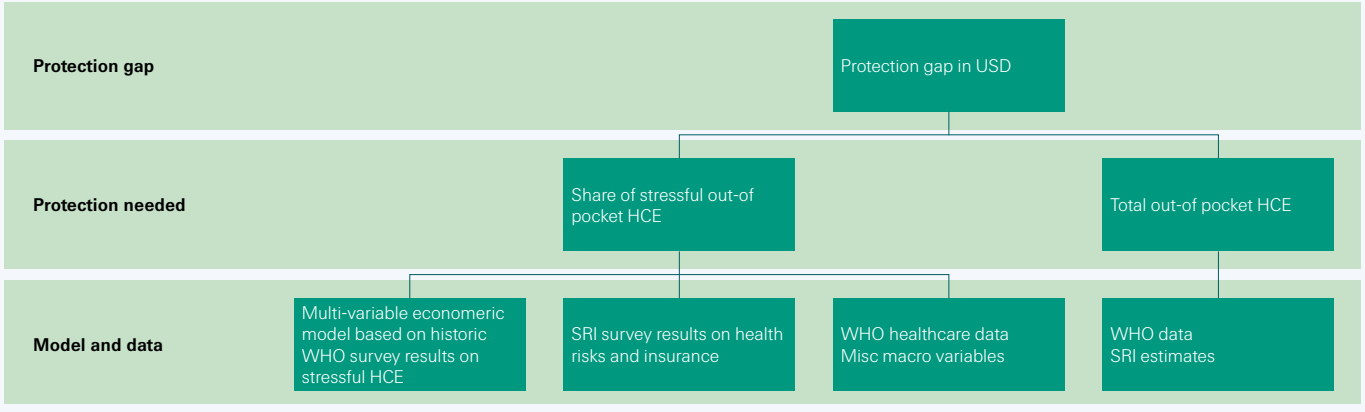
Our model is centred on the share of population exposed to catastrophic out-of-pocket healthcare spending.

Our protection and health resilience computations are based on World Health Organization (WHO) estimates for the share of population exposed to catastrophic out-of-pocket healthcare spending for a wide set of countries. We compute the level of stressful health spending on health based on the share of the population exposed to catastrophic out-of-pocket healthcare expenditure and the level of out-of-of pocket health expenditures. We consider expenditure on health as "catastrophic" for a household when they exceed 10% of the total household expenditure or income.

We supplement missing data with a multi-variable econometric model.

We developed a multi-variable econometric model to predict the share of population exposed to catastrophic out-of-pocket healthcare spending for countries and years when the original data was missing. The values were then linearly transformed to estimate the share of OOP healthcare expenses based on findings from Swiss Re's consumer survey covering 12 Asian economies.

Figure 9
The building blocks of the health protection gap



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