in | trading risk
ILS INVESTOR GUIDE

H2 2022

# INFLATION AND ILS

## RISING RATES ARE BOTH A BOOST AND CHALLENGE FOR SECTOR

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# The dual-edged inflation sword

For the ILS market, perhaps more than any other, the outcome of this year's high inflation is still to be determined. Unlike other industries that are suffering increased immediate costs, this sector's performance – as always – is ultimately driven by events no one can foresee.

Obviously, some level of routine catastrophe losses will arise over the coming year. They may prove to be more expensive than anticipated due to global supply chain disruptions and the high costs of rebuilding.

But the key influence on the market remains the risk of a major loss. Should the industry ride out this phase of turbulent inflation, without a repeat of a Hurricane Ida-type event, then much of the current fear around inflation may remain theoretical for ILS investors.

However, that's not to say ILS managers aren't hugely aware of the need to deliver on managing and pricing risk accurately in this fast-changing environment. Insurance as a sector has historically struggled to deliver on data-processing improvements and digitisation of processes.

This kind of environment will test the value of the investments that every company in the value chain, from insurer to reinsurer or ILS platform, has made in data analysis.

> *"Insurance as a sector has historically struggled to deliver on data-processing improvements and process digitisation. The inflationary environment will test the value of investments made"*

Meanwhile, the potential gain for the asset class from this environment offers a more optimistic lens on the situation.

ILS ranks among the group of inflation-linked asset classes that offer investors a defence against rising rates. This is due to yields being connected to short-term money market rates – reducing mark-to-market variation and boosting yields as central bankers push up rates.

Some institutions are already beginning to score the sector more highly as an overweight target in response to the current environment.

However, it remains to be seen how this lure operates among the investor base in the months to come. At mid-year, year-to-date allocations were only slightly up as a whole.

But when global headlines seem to get gloomier and gloomier, the dual-edged influence of inflation on the sector at least offers some room to manoeuvre to optimistic advantage.

**Fiona Robertson**
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# ILS adjusts its stride to adapt to higher inflation

The current inflationary economy is bringing challenges for ILS that the industry hasn't encountered before, since it grew up after the credit crunch of 2008 in the context of low inflation and low interest rates.

Now claims costs are subject to inflation running at 40-year highs and escalating interest rates are impacting the risk-return profiles of investment strategies of all stripes.

Investors therefore want more information and are asking ILS managers to show their working on inflation.

The first concern is how much is being loaded onto premiums to account for the impacts of higher rebuild costs if losses arise.

The consensus from multiple underwriting sources is that loading for inflation is running at a minimum of 10%, with this rising to 25%-30% in some cases, depending on geography, line of business and contract duration.

It is generally understood that housing repair and rebuild cost inflation runs at higher levels than, perhaps even double the rate of, consumer price inflation. Supply chain disruption is among the factors to have exacerbated rebuild cost inflation, with the causes of hold-ups including labour shortages, the war in Ukraine and in certain instances low water levels in shipping channels.

The US Bureau of Labor Statistics' Consumer Price Index was running at 8.5% for the 12 months to 31 July, while its trade/wholesale index, the Producer Price Index, was at 9.8%.

The US real-estate services firm CBRE's Construction Cost Index forecast a 14.1% rise in prices during 2022, with this settling back to 2%-4% for 2023 and 2024. The index considers the cost of materials and labour, among other components.

In the USA, prices of building supplies are around 50% higher than pre-pandemic levels.

## Exposure forecasting in focus

The other important data point firms are looking at when calculating the loading for inflation is insured values. The crucial focus with this is ensuring that values provided by cedants are as up-to-date as possible, as well as knowing when the data was cut.

From here, managers are doing a lot more work on forecasting than they have done in the past, whether projecting values forward to a potential catastrophe event date, to the end date of the contract, or to a possible final settlement date.

ILS managers typically focused a lot less on exposure forecasting in the past, because with inflation hovering near to 2% since the 2008 crash, the impact on loss costs from exposure changes over the life of a deal was minimal.

With US personal lines insurers reporting Q2 results that have come under pressure from auto and to some extent property loss cost-inflation – Liberty Mutual and Allstate falling to underwriting losses, for example – this will raise questions over the claims and exposure controls in place at insurers.

Reinsurance with an excess-of-loss structure, which is typically more predominant in the ILS world than quota share, is perceived as particularly vulnerable to inaccurate exposure and inflation assessments from cedants, as the cliff-edge of reinsurance attachments could be reached much more quickly than anticipated if data is wrong.

Within the cat bond market, this pressure is particularly acute for ILW-based retro bonds, as modelling firms typically supply

### Building supplies costs rise 52% over 18 months as a hotspot for inflation


Change in US Producer Price Index: building material and supplies dealers, Jan 2020 to Jun 2022
Source: US Bureau of Labor Statistics via FRED

industry-exposure data on a lagging basis. In some cases, deals struck in the first half of this year would have been modelled on January 2021 data, sources noted.

However, structures are beginning to try to compensate for this risk. One source noted Everest Re's latest Kilimanjaro Re cat bond as offering an "investor-friendly structural change" in the form of an inflation factor.

While a lot of focus is going on the risks of inflation in property cat risk given supply chain disruption and rebuilding costs rising, ILS expansion into longer-tailed lines could also be hindered by the current economic cycle. Inflation is potentially a bigger reserving risk for policies that may only pay out in five years' time than for shorter-tailed contracts, especially if it keeps running at its current hot levels.

*"Cat bond structures are beginning to try to compensate for lagging data"*

### Floating rate boost – but do alternatives hold more appeal?

On the other side of the equation for ILS, interest rates continue to rise, with the Federal Reserve's main funds rate up 0.75% for the second month in a row in July, to a range of 2.25%-2.5%.

The orthodoxy in ILS circles and one of the historic selling points of the asset class is that it naturally acts as a hedge against inflation, since it includes a component of collateral that is typically invested in low-risk treasuries and does not face the same mark-to-market risk of fixed-income bonds.

Meanwhile, the increased collateral yield should in theory boost total ILS returns. However, with inflation far outpacing interest rates right now, the investment boost is muted.

Some observers suggest the increased T-bill yield may not be enough to attract investor interest, and/or that the higher T-bill rate could drive a risk-off mentality amongst investors. There is a question around whether the potential return on ILS over and above the risk-free rate is big enough to justify assuming the insurance risk that comes with it, relative to other opportunities.

But with that said, using cat bonds as an example, gross ILS yields of around 7% are still well ahead of equivalently rated corporate debt (see graph below).

Another indirect result of the current market turmoil is that investors' attention has been in many cases pulled away from niche products such as ILS while they attended to more immediate challenges in their loss-making fixed income and equity pots.

One source said they had heard of searches being put on hold due to the amount of attention flowing to other parts of the portfolio.

The other indirect result of devaluation in traditional assets is that suddenly ILS allocations began to look overweight. In some cases, this led to a sell off-of ILS.

While the asset class's diversification credentials have been proven by these market shifts, its liquidity in times of trouble was a "doubled-edged sword", one source noted.

For others, the diversification benefit was worth holding onto. Investors such as K2 have called out inflation as a reason for over-weighting the asset class.

Felix Brill, chief investment officer at VP Bank, which added ILS to its mix a couple of years ago, and now allocates to GAM Star Cat Bonds, Schroders ILS and Twelve Capital, said: "We did not like the high duration of bonds in an inflationary environment, so we replaced some of the bond quota in the portfolio.

"We were looking for additional diversification. We were overweight and are still running ILS overweight. The H2 outlook is good in our view."

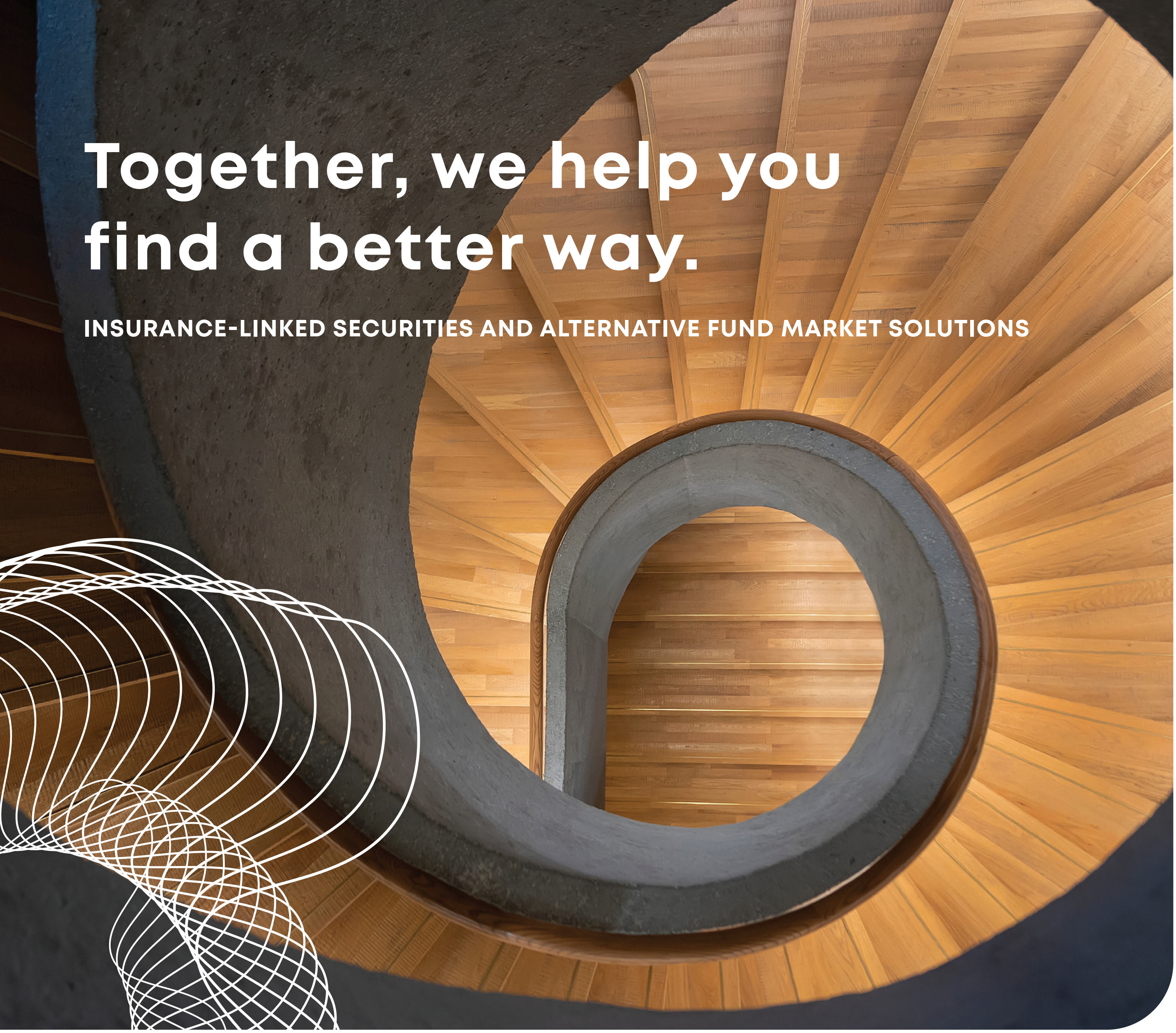
The outcome of inflationary impacts on ILS and the wider reinsurance scene depends partly on whether you think central banks' moves to raise interest rates will be enough to cool inflation over the coming months, and how this might interact with potential recession.

One factor that will help propel returns upwards is that inflation is expected to lead to increased catastrophe reinsurance demand, rising in line with insured values. The market is anticipating \$10bn-\$20bn of new demand largely from US buyers – around a 10% hike - for 2023.

Amidst this demand boost, ILS writers and reinsurers will be carefully monitoring the situation and looking for ways to ensure they are not left picking up the tab for an unanticipated inflation in loss costs.

## High yield debt on rise, but lagging cat bond spreads


Change in option-adjusted spread on corporate debt in the ICE BofA High Yield Index, 3 Aug 2021 to 3 Aug 2022
Source: FRED

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# ILS AuM broadly level, with several strong gainers in H1

The top tier of managers with $2bn or more of assets under management (AuM) kept combined assets largely level in H1, as Fermat Capital moved to first on the industry leaderboard.

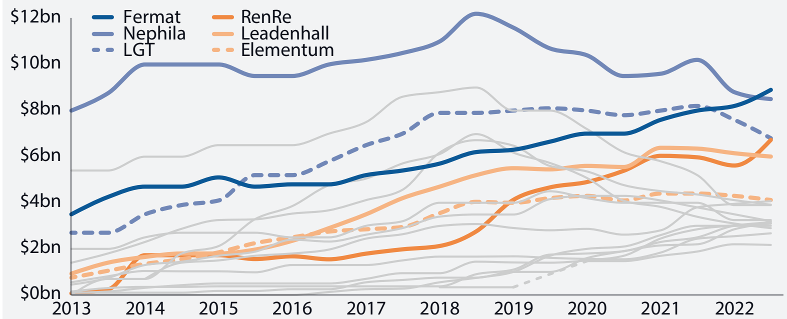
With $80bn of combined estimated assets across the group at 1 July, up 1% from January, the outcome is a recovery from the prior six-month period, when they dropped by 6%.

However, the aggregate top line remains below the mid-year 2021 figures. This highlights some of the ongoing fundraising headwinds facing the sector, and the total figures mask some notable shifts at individual manager level during the past six months.

Fermat Capital Management posted an 8.5% increase on its January AuM to $8.9bn, taking the number-one spot and pushing historic industry leader Nephila into second.

Nephila reported $8.5bn of AuM at mid-year, down $1.3bn year on year after a significant drop at year end 2021 and falling from $8.6bn at Q1 22.

## Change in estimated ILS AuM, Jan 2013 to Jul 2022




Data is updated in January and July
Source: Trading Risk

### Fundraising at mid-year

RenaissanceRe rose one place to fourth position, with AuM of $6.7bn, helped by the launch of its $475mn Bermuda-based casualty and specialty vehicle Fontana Re in the spring, which accounted for 44% of its additional $1.1bn AuM.

The second major growth firm in the past half was recent start-up Integral ILS, which gained a further $825mn, although much of this had already been raised at 1 January but not disclosed until February.

Additionally, Hiscox Re & ILS reported net inflows of $561mn in H1 2022, which took AuM to $1.9bn as of 1 July, up $300mn from the $1.6bn reported in January.

Hiscox said its inflows allowed it "to step up to the opportunity in the distressed market".

Fundraising at mid-year was characterised by some fast moves to deploy capital in a hardening rate environment in distressed markets such as Florida and Louisiana.

As well as vehicles recently reported on raised by Aeolus and Hiscox, it is understood that Elementum also had raised funds for a similar high-risk-type strategy as of mid-year.

### Growth slows at cat bond strategies

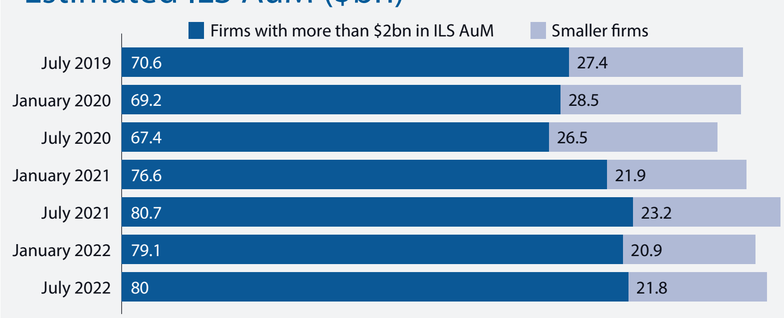
Relative outperformance among cat bond strategies has been one of the fuelling factors behind Fermat's growth in the past couple of years, and also among broader European liquid UCITS funds.

However, in the past half the number for AuM held in UCITS cat bond funds rose 2% to stand at $7.1bn as of July, compared to $6.9bn at the start of the year.

Growth in this segment was significantly slower compared to last year's booming cat bond market, when AuM growth hit 22% between January ($5.2bn) and July ($6.4bn).

For a full listing of ILS managers, please see pages 26-27.

## Estimated ILS AuM ($bn)




Source: Trading Risk

# ILS rate increases outpace market-wide risk premia rise

Rising interest rates are expected to boost the returns available both on cat bonds and private ILS placements

Over 2022 there have been significant shifts in investment markets. The Ukraine war, the emergence of inflation, tightening by central banks, the squeeze on real incomes and the increased risk of recession have weighed on traditional assets. Given these movements, we therefore analyse the current risk premia available on traditional assets classes and compare them to that available on non-life ILS. **What is found is that even though the risk premia on many assets have increased, the potential returns available on ILS are more favourable still.**

With H1 2022 now behind us, in investment markets there are hopes that inflation may have peaked. Oil prices have recently declined, although it will likely be some time before inflation comes back down to central banks' targets. With prices squeezing consumer spending and increasing companies' input costs, GDP estimates show economies contracting in both the US and UK over Q2 2022.

Central banks remain focused on reining in inflation given its potential to constrain spending and increase the risk of a recession. Base interest rates have increased sharply this year and falls have been seen in traditional equity, sovereign bond and credit markets. All of these markets are now offering increased risk premia for those investors willing to take investment risk. However, for differing reasons, **the risk premium available on non-life ILS has also continued to increase, but even more so than for traditional asset classes.** With ILS markets continuing to harden through mid-year renewals, **the no-loss returns now available on both cat bonds and private placements have also become particularly attractive** – a trend that is expected to continue.

This can be seen in the first chart which compares the yields available on a range of asset classes with no-loss returns on ILS (including money market rates but net of expected losses, defaults, downgrades and fund costs for all asset classes). For reinsurance private placements a range of expected returns is shown depending on the level of risk that end investors may wish to target.

## The outlook is bright for non-life ILS

### Cat bonds

**Cat bond issuance reached $8bn in the first half of 2022, taking the outstanding market to a new record high. There was positive net new issuance of around $2.9bn.** The range of (re)insurance sponsors continued to expand, helping push yields and no-loss returns higher.

The prospects for investors improved due to this advantageous supply-and-demand imbalance. **Spreads both at issuance and in the secondary market rose for every peril, opening a window for investors to deploy capital at higher yields.**

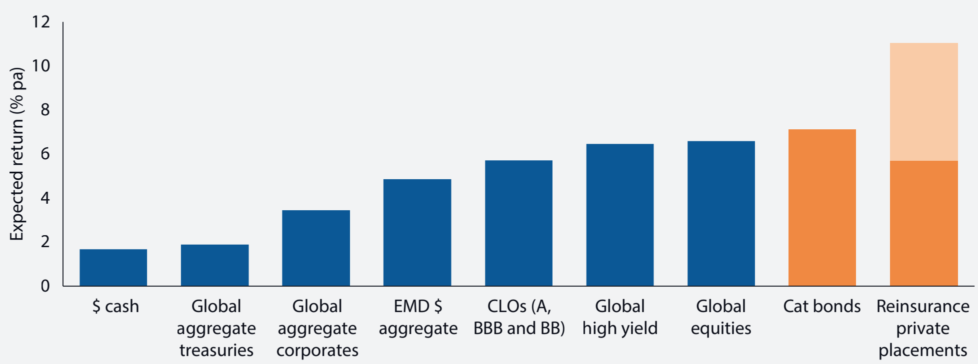
The average spread at issuance for 2022 stands at 7.3% per annum compared with 5.82% per annum in 2021. This is with average expected losses being unchanged at 2.5% per annum. Average secondary market spreads also rose in 2022 with cat bonds yielding roughly 8.5% per annum over money market rates at the end of H1 2022 (represented by the Swiss Re Global Cat Bond Index) compared to around 6% per annum at the end of 2021.

**Looking ahead, these attractive market conditions are expected to remain in place with the current dynamic in the cat bond market continuing to be supportive for investors.**

### Private placements

During the recent mid-year renewals we saw **reinsurance premiums rise markedly with the**

The expected returns on ILS are attractive compared to the yields across wider markets (% pa)




Source: Leadenhall Capital Partners aggregation of different sources. Bloomberg fixed income index yields as at 31 July 2022 adjusted for expected long-term defaults, recoveries, upgrades downgrades and fund costs. The Palmer Square CLO Debt Index is used for CLOs. For ILS no-loss net returns including money market rates have been used adjusted for expected losses and fund costs. Swiss Re Global Cat Bond Index used for cat bonds (excluding distressed bonds less than 80 in price and over 30% in yield). For reinsurance private placements expected returns are shown across a range of potential non-life ILS portfolios. For equities the MSCI World Index is used: dividend yield plus inflation expectations and expected growth is shown (a dividend discount model)

**Authors**

**Lorenzo Volpi**
Deputy CEO

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Managing Director

**Guy Carpenter US Property Cat Rat-On-Line Index going up by almost 15% over the year to June 2022.** International also hardened but lagged peak zones.

This situation has resulted in **the current outlook for private placements also being very positive.** As a general trend, traditional reinsurers continue to diversify out of property cat risk into casualty and specialty lines, **pushing up the price of property cat reinsurance. This, in turn, has been passed onto the private placement market in the form of higher yields.** In addition, inflationary pressure is expected to result in increased exposure values. This is likely to result in **more risk being passed to ILS markets, further sustaining higher ILS rates.** We expect these trends to continue into 2023.

**Rising interest rates are further expected to boost the returns available both on cat bonds and private placements** due to the floating rate nature of the underlying instruments. In comparison, rising rates usually act as a headwind in more traditional asset classes where increased discount rates can bring down valuations.

## The re-pricing of market risks and returns further favours ILS in strategic asset allocations

There has been a wholesale shift in the pricing of market risks and expected returns in 2022. In particular inflation, the risk of recession and tightening by central banks have seen the risk premia available on many assets shift significantly. Interest rates have risen with central banks reacting to inflation, credit spreads are now more elevated with the risk of a recession and dividend yields have risen with share prices falling.

As mentioned, **the potential expected returns on ILS have gone up even more than most other asset classes.** However, **comparing asset classes across both potential risk and return, the opportunity in ILS looks even more appealing still.** In the second chart, potential expected net returns are compared versus moderate levels of downside risk typically used by institutional investors when setting investment strategies – unlike (re)insurers which commonly use 1-in-200-year levels of risks. Yields, net of expected costs, are compared below against expected 1-in-20-year value-at-risk.

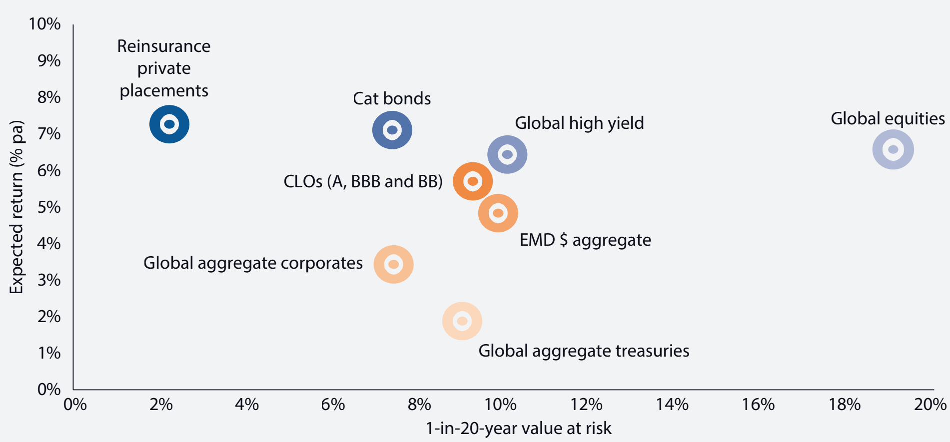
For the ILS strategies shown, no-loss target returns net of expected losses and costs are plotted versus 1-in-20-year value-at-risk for the cat bond market and for an example portfolio of private placements (with a similar target return). **ILS have an attractive potential level of risk and expected return having moved more towards the top left of the chart recently.** Consequently, when asset allocators are building diversified strategic asset allocations, **ILS now offers a particularly efficient building block within their wider investment strategy.**

As well as offering an attractive level of risk-adjusted return, non-life ILS also offers investors an extra diversification benefit. Investors now face an increased risk of a recession. When economies slow down performance across traditional asset classes often correlates and can struggle at the same time. Assets such as listed equities, corporate credit and commercial property can all come under pressure when companies' earnings falter.

**As well as ILS now offering an attractive potential return profile the asset class offers a considerable diversification benefit that is much sought-after when there is the prospect of a recession and traditional markets falling.** With (re)insurance often running on a different cycle to investment markets and being subject to different fundamental drivers of return, **now is a particularly attractive time for investors to make a strategic allocation to Insurance Linked Strategies.**

*Leadenhall Capital Partners grants investors access to ILS as an alternative diversifying source of income. Leadenhall has a track record of more than 13 years and manages around $6bn of AUM (2022 Q2).*

### Current Expected Risks And Returns Across Asset Classes




Source: Leadenhall Capital Partners aggregation of different sources. Bloomberg for non-ILS assets (except for CLOs which use the Palmer Square CLO Debt Index), the Swiss Re Global Cat Bond Index for cat bonds and Leadenhall Capital Partners for reinsurance private placements. Yields (net of expected losses, costs, defaults, downgrades and upgrades) are shown from the previous chart versus expected downside risk. 1-in-20 downside Value at Risk shown for cat bonds and reinsurance private placements from Leadenhall Capital Partners' proprietary modelling. For other asset classes Value at Risk is based on realised volatility from 30 Sept 2000 (and from 31 Dec 2011 in the case of CLOs) to 31 July 2022

# Rising market offset by mark-to-market impacts for H1 ILS returns

ILS returns averaged 0.34% by the half-year point, according to the Eurekahedge ILS Advisers Index, as mark-to-market write-downs among cat bond strategies have weighed down performance.

After several years of cat bond segments outperforming private ILS strategies in the aggregate, this has led to private ILS fund gains running ahead of cat bond funds in H1.

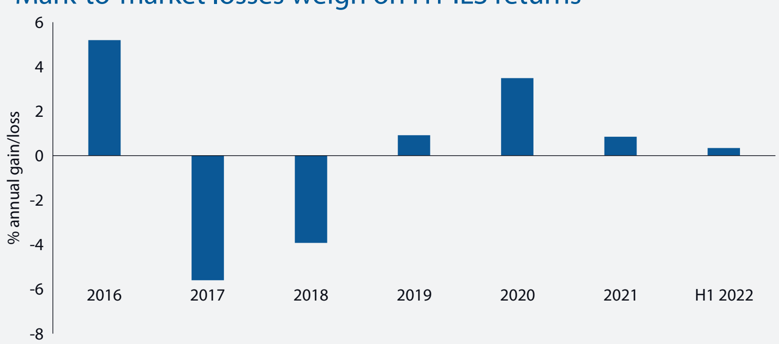
Private ILS gains reached 0.89% for H1, versus an 0.47% loss among cat bond strategies. This estimate is based on initial reported monthly data from ILS Advisers.

The cat bond segmental loss outpaced the figure recorded on Swiss Re's global cat bond indices. The reinsurer's ILS price index fell 3.57% in the first half, versus an 0.35% total return.

Among all funds tracked by ILS Advisers, performance ranged in a narrower grouping than last year, when catastrophe events such as the Bernd floods and Winter Storm Uri led to more divergence. On average, there was a 2.8-point spread in monthly performance in H1, compared to 5.6 points in the prior-year period.

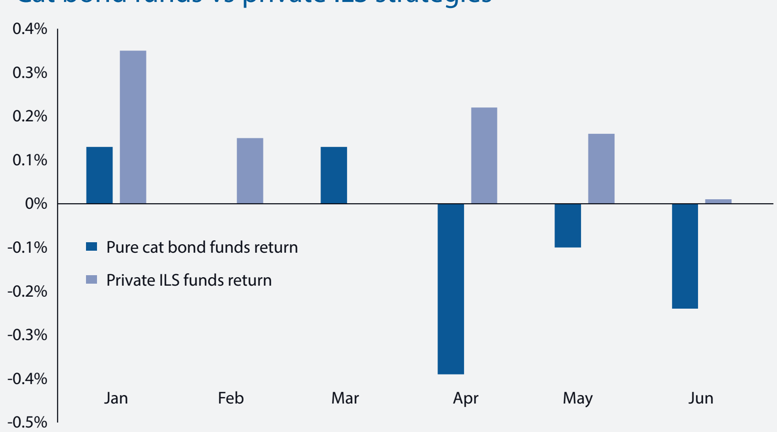
June was the only loss-making month for the index in the first half, although April's performance was flat and February-to-May returns were sluggish.

## Mark-to-market losses weigh on H1 ILS returns




Source: Eurekahedge ILS Advisers

## Cat bond funds vs private ILS strategies




Source: Eurekahedge ILS Advisers

## Key metrics

| | % |
|---|---|
| Annualised return | 3.94 |
| Return since inception (2006) | 89.8 |
| Sharpe ratio | 0.62 |
| % of positive months | 84.9 |

Source: Eurekahedge ILS Advisers

Some 2022 disaster events will have made their mark on the ILS sector.

Overall, Swiss Re pegged H1 nat cat losses at $35bn – 22% above the average of $29bn during the past decade. Among the most significant cat losses were the February series of winter storms striking Europe, causing insured losses of $3.5bn, and torrential rains and flooding in Australia during February and March, setting a record for insured flood losses in the country, also at around $3.5bn.

Swiss Re said the Australian flood was one of the country's costliest natural disasters, and the most expensive event globally for insured losses during H1.

The ILS market is still active in taking aggregate cat risk from the major Australian insurers – although to a lesser extent than in prior years following repeated losses in the country. Its market share in France is low.

ILS Advisers noted that losses may erode some annual aggregate deductibles.

On the cat bond market, a World Bank transaction was triggered in January resulting in a $52.5mn loss connected to Typhoon Odette/Rai.

The Ukraine war will also drive significant insured losses for the traditional (re)insurance market, primarily in lines of business including aviation, political risk and marine. There is limited ILS market exposure via specialty retro deals to such risks.

# Cat bond market perseveres through macroeconomic pain

The cat bond market persevered through macroeconomic headwinds in the second quarter, to post $4.9bn of new issuance.

This was the third highest ever in a second quarter and puts 2022 on track to be one of the largest years ever in terms of volume.

This was achieved through rate hardening that gave investors additional momentum, helping to offset the threats of rapidly increasing inflation, rising interest rates and costly currency hedges.

ILS investors paused to re-evaluate their view of overall asset allocation during a period of geopolitical, macroeconomic, and financial markets volatility.

Overall, rates widened approximately 10 – 20% during Q2, dependent on the peril and structure of the transaction, moving in tandem with traditional and other alternative reinsurance markets.

On top of wider spreads, investors pushed for more favourable terms such as the inclusion of franchise deductibles and wider reset factors.

Despite a more constrained catastrophe bond market, many insurers and reinsurers, supported by expert advisors, were able to close transactions within expectations. Existing sponsors tended to fare better, and experienced brokers were able to leverage investor relationships and adjust structures to secure investor support and more favourable terms and conditions for clients.

Approximately one-third of the new transactions offered protection against perils in Florida or within the Southeast region of the United States, continuing to prove the market as a valuable alternative source for capacity for cedents, especially during difficult June renewals.

**Paul Schultz**
CEO of Aon Securities

## Uncertainty to be short-lived

Looking ahead, the pipeline remains robust. Midway through 2022, the catastrophe bond market remains on track to match last year's record issuance.

Demand for catastrophe bonds currently outpaces supply, as insurers and reinsurers increasingly turn to alternative capital markets to supplement traditional reinsurance and maximize placements in a challenging environment.

We expect the current uncertainty in the ILS market to be relatively short-lived, and that new investors and fresh capital will be attracted to the market, which continues to offer value and diversification throughout the financial markets cycle.

## Broader reinsurance market faces "near-perfect storm"

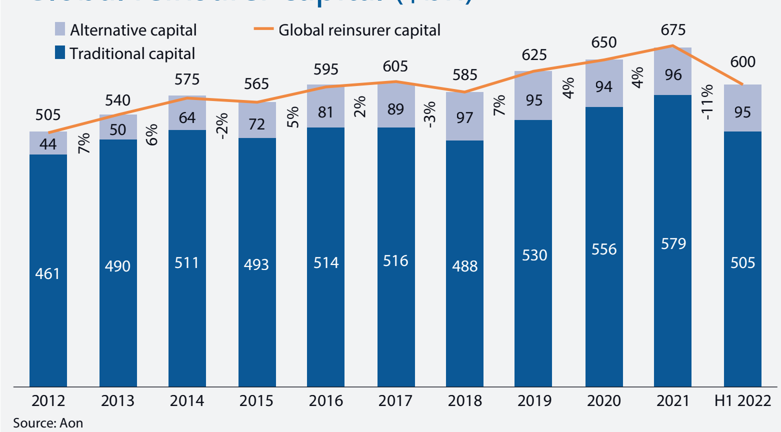
Reinsurance buyers faced a near-perfect storm in June and July, as capacity constraints collided with rising demand for reinsurance protection. Despite these challenges, the majority of insurers were ultimately able to satisfy their reinsurance needs.

Following several years of above-average catastrophe claims, reinsurers reduced their appetite for catastrophe exposure at the June and July renewals. For the first time since the US hurricanes of 2004 and 2005, property natural catastrophe capacity contracted materially.

Industry capital decreased in the first quarter of 2022, driven principally by unrealized losses on bonds, linked to rising interest rates.

Total reinsurer capital stood at $600bn at June 30, a $75bn reduction relative to the end of 2021. Alternative capital, however, remained more stable at $95bn, as investors recognised the value of diversification and increased margins amid more turbulent financial markets.

Global reinsurer capital ($bn)



# Cat bond pricing came under ever closer scrutiny in H1

The cat bond market has cooled considerably after a hectic H1, but ILS industry insiders have their eyes trained on the post-September period when a rush of deals are expected to enter the pipeline.

"Property prices have gone up, so cedants need more cover," said one fund manager.

Volumes and prices may depend on the geopolitical climate and the outcome of this year's hurricane season.

Volumes issued in H1 totaled $7.8bn, according to data gathered by *Trading Risk*, a 9.3% fall from the previous year's $8.6bn. While a capacity crunch stemmed the flow of possible deals, one fund manager said the total was "quite impressive, considering it's been a tough year".

## Macro distractions

However, despite this activity, volatility due to the Ukraine crisis and the impacts of inflation motivated some cautious investors and pension funds to focus on the more traditional parts of their asset allocation, away from ILS.

"Investors are trying to manage other issues, they can't focus on ILS right now," a source pointed out.

While capacity may remain somewhat tight in the upcoming renewal season, this in turn could mean there are interesting opportunities for willing investors.

The non-correlation of ILS products will draw investors back, a fund manager predicted.

"Broader equity hasn't been doing well, while ILS has been doing ok. We're finding that there's interest, provided that the upcoming hurricane season isn't too severe."

"There will be a catch-up phase, the question is just when," said another.

## Changeable H1

The cat bond scene during the first half of the year featured some deals being resized or modified to get them over the line.

"We saw a pretty bumpy renewal season, with some transactions which worked, and some which had to be pulled," said one fund manager.

Primary market cat bond yields shot up in Q2, with transactions pricing above broker-dealer guidance for only the second time since *Trading Risk* began keeping records in 2014.

Final pricing was 693 basis points (bps) on a weighted average basis in H1, higher than price guidance which was 606-664 bps on weighted average, according to *Trading Risk* analysis.

The price increases reflected a squeeze in investor capacity, as deals had to compete for capital.

## Cyber cats

As a response to inflationary impacts, Everest Re added an inflation factor to its cat bond Kilimanjaro Re, meaning that if inflation rises more than a certain percentage, the attachment point will rise.

Some deal terms swung in favour of investors, for example rising redemption premiums. These are the fees cedants must pay if they wish to terminate cover early, meaning investors gain more from a closed deal.

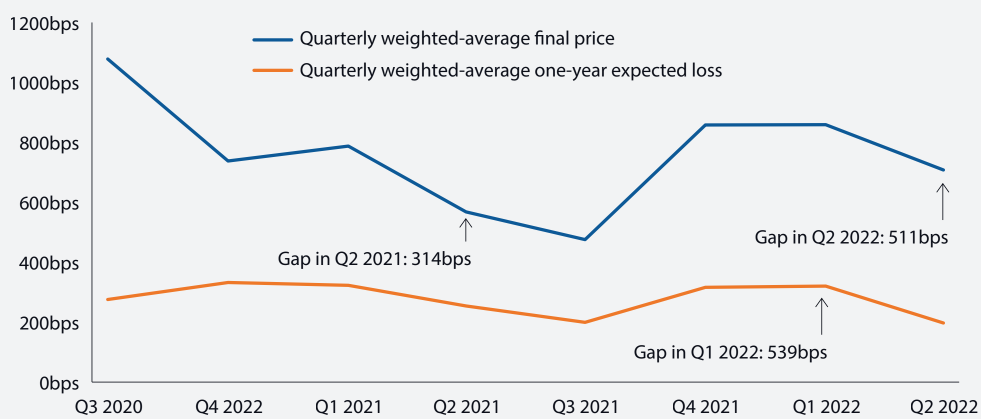
With regards to perils, investors may also be able to access a wider range of risks than natural catastrophe in the future.

Core Specialty completed one of very few standalone excess and surplus catastrophe bond issuances with its $65mn Yosemite Re transaction in H1.

Meanwhile, broker Gallagher Re attempted to bring a cyber cat bond to market and, although the deal did not cross the line this time around, it is understood that they, and other players, will seek again to place cyber cat bonds.

These would look to take advantage of what the broker predicts will be a hard cyber market worth a potential $22bn by 2025.

### Net margins of +5% on cat bonds have risen nearly 2 points from mid-2021




Deals only included in weighted average where both final spread and expected loss available
Source: Trading Risk

# Parametrics can boost ILS impact investing

Twelve Capital's managing partner, products and distribution, Nils Ossenbrink

**How do you think investor demand for ILS is evolving?**

I always saw from an investor's perspective that the ILS advantage lies in providing a diversifier in a traditional portfolio context. It's not about building complex structures, as often seen in the hedge funds world, to deliver non-correlation. Now with climate change, the demand for alternative risk capital is growing.

**What issues do you think parametric solutions can solve?**

The problem as we see it is the ILS industry underestimated the impact of trapped capital collateral in respect of cashflows and performance, and other issues such as incidental business interruption exposure in the context of Covid.

These kinds of surprises are not wanted. Investors don't like uncertainty over payouts. [After an event] they want to know how much is at stake and when you can get your money back. Collateral trapping is doing harm.

But parametrics work from a financial investment management perspective very well, [as you quickly know the size of the claim, based on the physical parameters of an event].

It's not the solution for all problems but it is from our perspective a very interesting structure that deserves to grow.

**What evolution do you see in parametric platforms?**

We see a number of people with a tech background coming in with interesting ideas and structures which have the ambition and the potential to disrupt some of the traditional insurance systems.

Some are based on digital assets and leaving out the middleman so the price is efficient and transparent. From a financial investor's perspective this is ideal.

We are following these developments very closely and support change through these kinds of platforms, clearly not acting as a passive party.

**Do you have any target for your allocation to parametric deals?**

We invest around 5% of our cat bond portfolio in parametric deals at present. But we don't have a specific target for the allocation, since there is a question of availability of deals. The [deal] count is relatively low – it is a question of demand.

We have seen deals we didn't like... if the basics such as modelling quality are not there, the solution doesn't make sense. But if they are, the parametric deals are a very compelling solution.

*"ILS can help close the protection gap. However, it is critical that the standards for making an impact are being met"*

**How do you define what makes an ILS deal an example of impact investing?**

The idea is that this impact is dependent on providing coverage to populations which are most likely facing a massive protection gap between the cost of potential disasters and insurance coverage.

ILS can help close this protection gap. However, it is critical that the standards for making an impact are being met.

The governance structures in these regions are probably not as developed and there is more complexity in identifying losses – there's a requirement to come up with outcomes that are easy to determine.

It must be clear that the ILS assets are getting to the right source if there is a payout – we need to avoid the risk that the money is funneled to other channels. It's critical to have proper organisations in between the risk-transfer chains and that the whole process is reliable – the less complex a transaction, the easier it can be dealt with.

We are evaluating the market and are in discussions with market participants on how to come up with solutions. If these are combined with an insurance structure that is clear, transparent and cannot be disputed, then it avoids other challenges such as poor farmers arguing with insurers over a payout.

**What are your ambitions for your impact investing activities?**

The ideal would be setting up a dedicated fund which does our impact investing.

However, given the status of the market and investors' requirements, it would be too ambitious to come up already with a fixed timeline or numbers. The issue is finding the right investment and partners. In this space it is also even more important to have the proper set-up and to be fully aligned with the principles of impact investing.

Generally, it is key that these kinds of vehicles are not seen as a philanthropic product. For the majority of the investors, the expectations are in line with traditional ILS products, i.e. it should be targeting similar levels of return. There are other investors which will accept somewhat lower returns [for the impact benefits] but it's still very clear it's an investment.

If you want to have a sustainable setup and model it must make sense for both sides.

It's not a fast-track product; you cannot expect the industry to change immediately, which makes it hard to specify targets.

# Florida: reinsurers drive change amid market turmoil

The Florida homeowners' insurance market has endured its most challenging year since Hurricane Andrew in 2022, even without any recent storm activity.

Multiple insurers have failed, including two with ILS backing from HSCM, with many more homeowners forced to buy cover from the state-backed Citizens Property Insurance as other carriers get far more restrictive on the risks they will accept.

State regulators were forced to expand the scope of support available to private insurers through a new subsidised reinsurance programme as well as other guarantees.

This upheaval reflects many of the underlying pressures on Florida carriers, notably excessive litigation.

However, for reinsurers and ILS risk-takers the picture is looking healthier.

Following an exceptionally turbulent reinsurance renewal at 1 June, reinsurers and ILS managers pushed through many significant gains for risk-takers as they sought to pick favoured counterparties among Floridians and minimise minor-peril exposure.

There are hopes that the clear signs of the private market failures in the state will drive politicians to bring in more ambitious legal reforms, on top of some clear wins for the industry in the mid-year 2022 state legislative session.

## Gains to rate and coverage

Lifting headline prices was a key focus for reinsurers this year. However, they also emphasised that terms and conditions moved in their favour, particularly in the final days of June renewals as insurers needed to secure capacity.

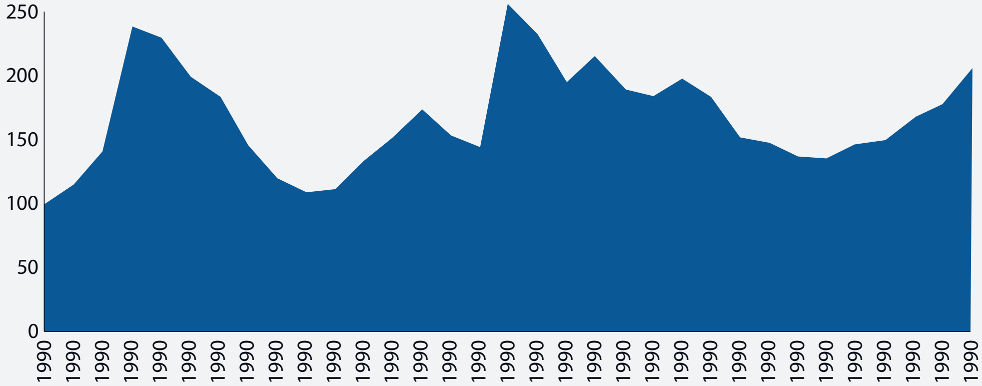
### Sunshine State reinsurance

- The 1 June renewals are a key date for ILS funds and reinsurers, as Florida insurers are heavily reliant on reinsurance
- ILS providers took about a 16% share of premiums ceded by the state's top 10 insurers in 2020 – roughly $620mn of a $4bn premium pot – according to *Trading Risk* analysis

This included increased take-up of named windstorm coverage, especially on lower layers, removing exposure to minor convective storm perils and, by extension, minimising the exposure to roof repair fraud.

Premium prepayments or other mechanisms of minimising credit risk were also a big win, although not universal. These included more favourable premium offset clauses, which now allow reinsurers to discount claims payouts for "all future premium" due, rather than

## US cat rates rise 15% in H1, in biggest shift since 2006




Source: Guy Carpenter

the prior restrictions that only allowed recognition of "premium paid or present".

This helps allay some of reinsurers' pain if they pay out claims to a carrier that has gone bust.

Some reinsurers also chose to press for loss adjustment expense caps, although private caps remain above the 10% limit enforced by the Florida Hurricane Catastrophe Fund, estimated by one source to be in the high teens.

Many reinsurers walked back entirely from lower-attaching reinsurance risk, preferring to deploy capacity to cover only major hurricane losses.

Sources suggested first-layer rates were moving up to the range of 55%-60% rate-on-line (RoL) or even up to 70%, from levels of around 45%-55% last year. RoLs capped out in the high single digits for top layers.

On top of consistent rate increases since 2019, one underwriting source suggested the margins above expected losses have now gained significant headroom, even with discounts to allow for increased risk.

Before Hurricane Irma in 2017, reinsurers would have been looking at margins of 2%-5% above expected losses, with the range now moving up to 8%-20% projected margins, without discounting for non-modelled loss cost pressures.

Likewise, on a nominal basis, top-layer RoLs that would have gone for 3%-4% in 2017 are now pricing around 6%-8%, they added.

Reinsurance broker Guy Carpenter estimated that US-wide catastrophe rates were also up 15% in H1, as gains have been widespread beyond the Florida market, even if pressure was more acute in Florida.

### Tort reform

This year's session achieved some welcome reform on the legal costs that plague Florida insurers – and by extension reinsurers when it concerns catastrophe claims.

Florida made up just 7% of homeowner claims opened nationwide in 2021, but it represented 76% of homeowner lawsuits against insurers.

The new restrictions included:

· Attorney fee awards cannot be paid to contractors in assignment of benefit cases (fees can only be paid to insured beneficiaries)

· Fee multipliers can only be awarded in "rare and exceptional" circumstances

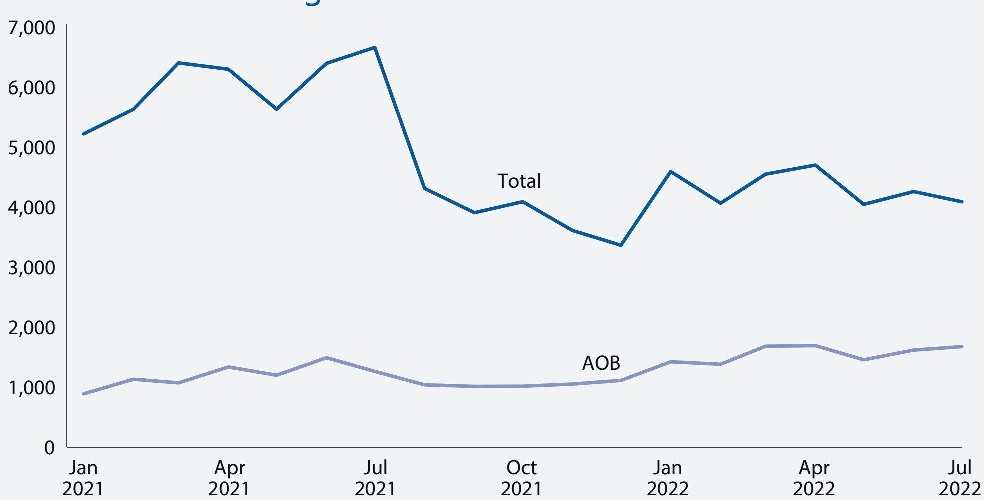
· Restrictions on the threshold at which insurers have to pay plaintiffs' attorney fees, with claimants paying their own fees if they are awarded an amount less than 20% above any pre-suit settlement they were offered

· Authorising insurers to be awarded attorney fees in certain lawsuit dismissals

The measures removing legal fee awards on assignment of benefit (AOB) claims ware seen as "game changing". One carrier estimated AOB claims could have driven as much as a third of Hurricane Irma losses, as settlement of the 2017 storm claims was a prolonged problem for (re)insurers.

However, the industry would still like more ambitious reform on fee awards and roof payout policies, as roof repair bills have escalated.

## Reforms assist Florida insurers on claims litigation, but lawsuits remain high




Implied AOB figures for January 2022 onwards based on disclosed percentage share
Source: CaseGlide

# ‘G’ in ESG a crucial financial differentiator for ILS

Industry experts told Trading Risk why underwriting guidelines and trust in counterparty management teams is essential


Many reasons have been proffered to explain the ongoing chaos in the Florida property insurance market, including heavy hurricane losses and exorbitant litigation costs.

Some in the industry also believe that better governance – the “G” in ESG (environmental, social and governance) – is likely to prove an important part of the solution to the market’s continuing problems.

“When we look at performance in Florida, you can see what a difference bad governance makes,” said Luca Albertini, CEO and founding partner of Leadenhall Capital Partners.

While the Standards Board for Alternative Investments (SBAI) has noted that “S” and “G” factors may be less financially material than “E” for most ILS instruments, industry sources stress the importance of governance factors on performance.

“Bad governance has the quickest impact on the bottom line,” said Albertini, adding that “G” is essential also for meeting wider aims.

“You can think of the ‘G’ as the priority element in ESG. Without the ‘G’ you can’t enforce the ‘E’ or the ‘S’,” said Andy Palmer, chief executive of Swiss Re Capital Markets.

“Ultimately, you don’t deliver on what you’ve told your stakeholders.”

The ILS industry has been taking steps to strengthen its culture around ESG. These include establishing a working group of six Zurich-based ILS funds to lobby for more data transparency and a standard disclosure framework, which is supported by many industry players.

Ben Fox, head of strategy and risk at Hiscox, said: “We believe that there should be a global baseline of ESG disclosures, with a focus on meeting investor information needs and a need to focus on the standardisation of ESG-related corporate disclosure.”

### What is “G”?

However, the industry is still in the process of forming a consensus

## What is the ‘G’ in ESG?

- Guidelines for robust underwriting processes
- Reserving policies that balance prudence while avoiding over-caution
- Transparency and robustness of claims processes throughout the chain
- Timely reporting on payouts or reserve releases
- Diversity of personnel at board level
- Recognition that “G” is the backbone of “E” and “S”

around what factors are, or should be, included in governance.

One of the clearer elements of "G" is underwriting-focused guidelines. The structure and management of individual deals is significant because bad terms and practices can run up losses.

"A good approach will look at typical underwriting guidelines – how they're reviewed, the way in which there is escalation, for example if a risk needs to go up to the next level of approval," said Palmer.

"Often, ILS managers focus on the individual terms of a transaction. For a cat bond it could be the extension terms, how the coverage adjusts from year to year or what jurisdiction the special purpose vehicle (SPV) is domiciled in," added Paschal Brooks, co-founder of Sustain ILS.

Sources also noted claims assessing and handling, and the transparency around this, as central to good governance.

Albertini gave the example of distressed Florida carriers, where in some cases, firms' average cost of claims adjustment was much higher compared to other companies. "If you have 5% share of the market and 10% of losses, something is wrong," he said.

Good practice could include assessing the company's internal claims-handling processes and capabilities, as well as considering any third-party service providers they may use.

Palmer points out that access to information on claims processes is a strength of cat bonds particularly, because they include "systematised claims processing" and "unambiguous payment terms".

## Claims transparency

Claims governance and transparency are vital because they form the basis for investors' trust.

Joel Smith, associate partner at Synpulse Management Consulting, said: "To be a good steward of investor money, and a fiduciary to the investors that have trusted their money with you, involves being able to assess claims and reserving effectively."

Another vital aspect for ILS managers ensuring that that their "downstream" partners – insurers and reinsurers – are capable claims handlers, is that it lets them fulfill other aspects of their ESG strategy.

"If you're a fund manager, and your ESG strategy is based around social cohesion and resilience, then it's important that the claim you're paying reaches the end-insured. This keeps your ESG positioning in balance with your delivery," Smith continued.

*"By the time a deal arrives at an ILS fund manager, data is on a macro level and often doesn't have the robustness or fidelity needed"*

"One of the reasons insurers and reinsurers go bust is not having the right reserved amounts in place. You want to make sure you're doing business with a stable partner, which isn't under reserved," Smith explained.

On the other hand, when cedants over-reserve, it can result in potentially unnecessary trapped capital, meaning investors' money is held from them.

"If underwriting platforms over-reserve with the objective of trapping collateral, that is poor governance. There are players who behave like that who we have blacklisted," said Albertini.

"G" standards have also been known to have had their edges knocked during a soft market cycle.

One investor source said: "Whenever the market softens, we've definitely noticed a weakening of 'G' in certain products. An easy conflict, or violation, of good governance is if an affiliate of the structuring agent is managing the SPV that issued the cat bond. Because if there's an issue with the bond, they won't want to do anything to threaten their revenue."

## Disclosure challenges

One hurdle for ILS managers in scrutinising counterparty governance is that data needed is often inadequately available or not standardised, complicating fund managers' ability to collect and ultimately decide on ESG data.

Furthermore, information is often distilled by the time it reaches ILS participants. "ILS sits at the very end of the risk transfer value chain for collateralised reinsurance. By the time a deal arrives at an ILS fund manager, the information from the end-insured has been transformed at several points along the value chain. It arrives on a much more macro level and often doesn't have the robustness or fidelity needed," Smith said.

This problem is partially due to some companies having limited resources.

Palmer said: "Everyone's on a different part of the journey. Smaller companies have limited resources and access to data, large multinationals have information available, and there are plenty in the middle too."

Additionally, even those firms that want to share data may not find it easy to do so. One investor reported being told by ILS funds that counterparties asked not to be named, while Brooks noted that "key factors like compensation practices are often not well detailed in the public domain and are carefully controlled by companies".

For their part, funds report that sometimes logistics or legislation prevents them from sharing information.

Albertini said: "Sometimes people want to give you information but can't. Some requests, like diversity related ones, we can't answer fully in the UK or EU due to data protection laws."

**Continued on page 18**

## Diversity targets

Beyond the challenges of dealing with counterparties and data gathering, ILS managers also face the hurdle of developing and maintaining their own internal standards.

Some suggest the ILS asset class in its early phase of development put more focus on product design and risk selection, which makes them more comfortable with counterparty scrutiny.

But for an industry made up of larger smaller asset managers, strengthening diversity representation in-house – which is another key factor in governance goals – may take more time.

"Operational aspects and due diligence are where ILS participants have experience, as this is a natural extension to the counterparty due diligence processes. It's more difficult to change the composition of your leadership or your company and to find the right talent," said Smith.

Beyond diversity, personnel representation is also about independence.

"When we invest in cat bonds, we typically seek to ensure that there's at least one independent director on the board, to make sure that proper governance is followed," said one investor.

Larry Swedroe, chief research officer at Buckingham Strategic Wealth, a Stone Ridge investor, said: "We spend a lot of time getting to know a manager before we'll work with them. That includes the culture, the people, how they treat their employees, making sure that everything they do is based on evidence."

He added that having strong interest alignment with stakeholders is a key "G" strength, including whether the fund's employees put their money in the same funds as an investor.

Although diversity is sometimes seen as falling into the "S" category, sources also stress its importance within "G".

"Management diversity has been shown to lead to better performance through offering a greater range of opinions," said Brooks.

## The road ahead

Generally, sources agreed that a shift in culture was in sight that would help firms to be more open to embedding ESG elements in their work.

In governance terms, this might include building a more diverse workforce to ensure a wider, fresher range of ideas is available.

> *"We have to establish a new culture where ESG is built in and make people understand it won't make them perform worse financially"*

Brooks suggested that hiring a wider diversity of personnel was a good route to go down. Others argued that the industry itself has work to do before it would be appealing to a broader range of talent.

"A big challenge is people sticking to the old way of doing things. We have to establish a new culture where ESG is built in and make people understand it won't make them perform worse financially," he explained.

"I do think that a diverse board is a better board, because you get a wider range of opinions. But all else being equal, we'll take the best talent," said Swedroe.

Sherman Taylor, head of capital markets at Ocorian's Bermuda office, argued that the solution lies in convincing people that achieving diversity and financial performance are not at odds.

Others have opted to set and enforce standards which their counterparties must follow in order to work with them.

An investor source noted: "Diversity is really important. For the last two years we've required companies we invest in to have a diversity and inclusion policy, and if they don't we give them a period of time to put one in place."

Overall, sources told *Trading Risk* that progress had been made on the "G" of ESG during 2022, compared to previous periods when it has been mostly overlooked.

Smith said: "Investments in operations and technology have historically prioritised creating great products for investors and delivering quality risk selection. As an inflection point is reached and investment flows to the middle office, fund managers will be enabled to implement ESG strategies and particularly the 'G' aspect."

### Challenges and benefits in ILS

- Developing more diversity in leadership may take time for smaller firms
- In counterparty assessments, information disclosure flowing through multiple steps in the risk transfer chain may be patchy
- The legal framework around ILS structures, especially cat bonds, sets outs clear expectations around claims-handling processes

**Paschal Brooks**
Co-founder of Sustain ILS

# PGGM sets up Bermudian vehicle in bid for more control over ILS investments

Major ILS investor PGGM told *Trading Risk* it hoped to scale up its investment participation in its new Bermudian reinsurance platform Nightingale Re to $2bn-$2.5bn over time.

The new vehicle has been created specially to take a more concentrated strategy compared to PGGM's previous mandates and will build strategic relationships with cedants, reflecting the greater transparency and control the Dutch fund advisor wanted over its ILS investments.

Nightingale Re appeared on PGGM's roster of ILS providers for the first time this year with an initial allocation of $50mn-$100mn to catastrophe risk.

The Dutch investor had also added new allocations in the range of $50mn-$100mn to Scor for worldwide cat risk, and $100mn-$250mn to Aeolus' remote-risk fund Spire.

The fund had earlier withdrawn from AlphaCat, with a mandate that was believed to be at the lower end of the range of EUR500mn-EUR1bn ($501mn-$1.02bn).

Meanwhile, in Australia, MLC said it had upsized its allocation to ILS due to the continuing attraction of ILS's diversifying characteristics, recent wider spreads and the profits the fund has made consistently from ILS every year, including 2017.

It does not provide specific updates on changes to its holdings, but has more than A$1bn ($726mn) invested in the sector.

In an update for the 12 months to 31 March 2022, the investor said it added reinsurance quota share deals with all three ILS managers it allocates to and "selectively upsized" certain ILS exposures, as it highlighted the benefit of the sector's floating rate nature.

MLC is known already to have employed Mt Logan Re and AlphaCat as ILS managers but did not disclose the name of the third ILS manager.

The company said entering the customised quota shares gave it co-participations on broadly diversified reinsurance portfolios.

It reported ILS returns of 0.8% for Q1 2022 and 5% for the 12 months to 31 March (hedged into Australian dollars).

## Selected major investors in ILS

| Organisation | Domicile | Current ILS allocation | ILS share of total assets | Managers employed |
|---|---|---|---|---|
| PGGM | Netherlands | 8149.4 | 2.6% | Fermat, LGT, Nephila, Elementum, Munich Re, New Ocean, AlphaCat, RenRe, Partner Re, Swiss Re, Aeolus, Scor, Integral |
| Future Fund | Australia | 1104.6 | 1% | Elementum, Hiscox Re ILS |
| Pennsylvania Schools (PSERS) | USA | 966.0 | 1.63% | Nephila, Aeolus, RenRe |
| Canada Pension Plan Investment Board (CPPIB) | Canada | 961.3 | 0.34% | Fermat, Nephila, RenRe |
| Railpen | UK | 903.5 | 2.06% | Credit Suisse ILS |
| NatWest (RBS) | UK | 762.0 | 1.05% | Nephila, Leadenhall |
| Florida Retirement System | USA | 740.0 | 0.5% | RenRe, Nephila, Pillar, Aeolus, CSAM/ILS P&C Legacy Fund |
| AP2 | Sweden | 727.8 | 1.68% | Fermat, Credit Suisse ILS, Elementum |
| AP3 | Sweden | 636.8 | 1.42% | |
| Teacher Retirement System of Texas (TRS) | USA | 600.0 | 8.33% | |
| MLC | Australia | 578.0 | 1% | Mt Logan |
| Healthcare of Ontario Pension Plan (HOOP) | Canada | 565.8 | 0.63% | DaVinci Re |
| Abu Dhabi Investment Authority (ADIA) | UAE | 550.0 | 0.07% | |
| NZ Super Fund | New Zealand | 542.1 | 1.29% | Elementum, Leadenhall |
| State of Michigan Retirement Systems | USA | 538.0 | 0.77% | SMRS |
| Maryland State Retirement and Pension System | USA | 400.0 | 0.74% | Nephila, HSCM Bermuda, ILS Property & Casualty |
| Credit Suisse | Switzerland | 387.2 | 1.97% | Humboldt Re |
| Pensionskasse SBB (PK SBB) | Switzerland | 332.7 | 1.52% | |
| Arkansas Teacher Retirement System | USA | 331.0 | 1.88% | Aeolus, Nephila |
| The Coca-Cola Company | USA | 330.0 | 3.71% | |
| Baillie Gifford & Co | UK | 318.7 | 0% | Blue Capital, Catco |

Source: Trading Risk

in | trading risk

# Trading Risk New York 2022

## ILS (Re) silience: A new horizon

**29 September 2022**

New York

Trading Risk New York's conference unites key industry players to meet in person and discuss how the alternative reinsurance market will continue to take shape in the year ahead.

Industry experts and market practitioners will debate topics such as ESG in ILS, hurricane season, the implications of this year's Florida insurance reforms and the decoupling of the cat bond market, with networking time built into the agenda.

Qualifying institutional investors may secure a free delegate place; please enquire via trading-risk@insuranceinsider.com

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#TRNY2022

# Tropical cyclone frequency and magnitude predicted to rise: research

Average wind speeds increased for a range of return periods in 14 of 18 cities studied

The chances of a tropical cyclone forming that exceeds Category 3 on the Saffir-Simpson scale more than doubled for the 2015-2050 period, research showed.

A team of researchers from the US and UK modelled intense tropical cyclones using an innovative approach, based on the STORM model and wind-speed return period maps.

They found that the probability of intense tropical cyclones more than doubled in the west, east and south Pacific; north and south India; and the North Atlantic.

The technique did not show the same effect for storms in the Gulf of Mexico or the Bay of Bengal.

The researchers from the US Treasury, Royal Netherlands Meteorological Institute, UK Met Office and the universities of Amsterdam and Southampton aimed to provide data to support insurers and municipalities in carrying out risk assessments and implementing risk-mitigation strategies.

Their findings are available as open-access datasets.

Typically, tropical cyclone impact assessments rely on projections from global climate models, but these provide limited information on how tropical cyclones may change, the researchers wrote.

The result of this approach has been that no consensus formed on the projected change in tropical cyclone frequency, or storm characteristics, under various climate-change scenarios. This was particularly true when drilling down to a more local view.

Even high-resolution global climate models do not generally capture the most intense tropical cyclones, owing to the models' limited resolution and numerical precision, the researchers noted.

Further, global climate models typically only cover 30-100 years of historical and future climate, resulting in a small sample size of tropical cyclones.

The researchers claim that their own "unique and innovative methodology enables globally consistent comparison of tropical cyclone risk in time and space", and that it "can be adapted easily to accommodate alternative climate scenarios and time periods".

The researchers used STORM to generate synthetic tropical cyclones under past conditions, covering 1980-2017, and for future conditions, 2015-2050. The synthetic storms drew on four high-resolution climate models. The researchers then derived high-resolution wind-speed return period maps of up to 1,000 years, which let them assess local-scale changes in wind-speed probabilities.

The synthetic modeling process is based on sampling and modeling historical data, and global climate model simulations, with the outcome being to generate a synthetic tropical cyclone dataset spanning thousands of years.

The results showed that, on a global level, intense tropical cyclones exceeding Category 3 rose in frequency. By contrast, the frequency of weaker storms fell.

Further, the study showed a future increase in the magnitude of tropical cyclone intensity globally, based on a rise in average maximum wind speeds per second.

The eastern Pacific was found to have the largest future increase in storms' average maximum wind speeds, at the geographic basin level.

The research looked at possible future changes to average wind speeds for a range of return periods and across 18 cities. Average speed increases were found in 14 of the 18 cities studied.

At the 1-in-100-year return period, the largest increase in wind speeds was found in Nouméa, New Caledonia, in the southwest Pacific. San Diego demonstrated the biggest average wind speed rise at the 1-in-1,000-year return period.

The researchers assessed how populations' exposure would change over time. The largest relative increase in a population exposed to Category 1 cyclones, for return periods below 1-in-100 years, was in Cambodia. The study noted that Phnom Penh was particularly exposed.

Australia was shown to have the largest relative increase in population exposed to Category 3 cyclones, for return periods below 1-in-500 years.

Five of the 10 territories predicted to be most vulnerable to climate-change impacts were in the south Pacific.

Four of them, comprising Papua New Guinea, New Caledonia, the Solomon Islands and Tonga, were small-island developing states. These are highly vulnerability to climate change and have limited financial resources to overcome such impacts.

The research team wrote: "This research represents an important step forward in global tropical cyclone wind risk assessments. Our open-access datasets can serve as forward-looking hazard maps in catastrophe models used by, for instance, academia, global stake holders, consultancy and the (re)insurance industry."

# ILS market primer: from disaster frontline to pension portfolio

What is the insurance-linked securities (ILS) market? As the name suggests, it consists of financial instruments that provide insurance cover.

But don't conflate this industry with a standard burglary or fire insurance product. If you're investing in the ILS market, your risk antennae instead need to be tuned to the kind of natural disaster that might take over CNN screens – US hurricanes or Japanese earthquakes, for example.

The ILS market first emerged in the mid-1990s but it wasn't until after the 2008 financial crisis that it began to take off.

This surge was driven by its major selling point as a source of diversifying, or non-correlating risk – acts of God that won't be triggered by financial market turmoil.

The ILS market has largely made its home within the reinsurance sector – a wholesale industry that provides insurance to insurers to help them bear claims when disasters produce a spike in losses.

The ILS sector is sometimes labelled the "alternative" reinsurance market, and contrasted with the so-called "traditional" reinsurance market, which refers to rated balance sheet companies such as Swiss Re or Munich Re, to cite two of the longest-standing industry brands.

That's because the emergence of ILS market asset managers has given investors an alternative entry route into reinsurance risk, instead of just buying equity.

However, since its early days, any simplistic distinction between the two segments has eroded as the ILS

## Why ILS?

- Diversification from financial market risks
- Catastrophe models provide a framework for analysing risk and quantifying exposures
- Purer access to insurance risks – avoiding investment exposure on the balance sheets of major (re)insurers
- Cushions against inflation risks, as premiums include a floating rate return from cash pledged against insurance liabilities
- Short-term liabilities (largely one- to three-year contracts, some tradeable)

## ILS primer: Market timeline

**1996 –** George Town Re, widely cited as the market's first cat bond, is launched by St Paul Re, followed a year later by the first Residential Re deal from USAA and a Swiss Re deal

**1997 –** Nephila Capital, which is now the industry's largest asset manager, is founded

**2005 –** The hurricane season of Katrina, Rita and Wilma sets off a spike in reinsurance rates and a spate of new start-ups

**2008 –** Lehman Brothers collapses – it had managed collateral for four cat bonds that defaulted – cat bond structures shift to invest collateral largely in Treasury money market funds

**2011 –** A heavy international loss year produces three full cat bond defaults due to the Japanese earthquake and US tornadoes

**2017-18 –** Hurricanes, wildfires and typhoon make 2017-18 the ILS market's biggest loss years to date segment has broadened and melded into the wider reinsurance markets.

For one, many traditional reinsurers have set up asset management platforms to compete with ILS managers, while a number of ILS managers have set up or are closely tied to rated reinsurance vehicles, giving them more freedom to take on a broader range of underwriting risks.

In recent years, the ILS market has expanded into segments such as marine and energy and aviation reinsurance. It has also delved into catastrophe-exposed property insurance, a step down the business chain. And for a select group of managers, life (re)insurance risk is a major part of their business.

Despite its blurring boundaries, ILS still offers investors a distinct route into taking reinsurance risk while skirting the equities market.

### Perils: US risks dominate

The ILS market portfolio is heavily skewed towards the US, led by tropical storm/hurricane risks. Other major perils are US earthquake and Japanese earthquake, with small elements of European wind or Australian catastrophe.

That's because, historically, these are the most lucrative products for reinsurers. Florida, in particular, is their peak zone of exposure, meaning more capital must be held against these potential liabilities, attracting higher rates in turn.

They are also the most well-studied risks, with third-party statistical models available to help quantify hurricane exposures.

Outside the catastrophe bond market, however, ILS managers are likely to be exposed to a wide range of catastrophe risks beyond the specific perils that are discussed here.

They typically offer "all natural peril" catastrophe cover, which may involve exposures that are unmodelled or less well-modelled – such as wildfires or floods.

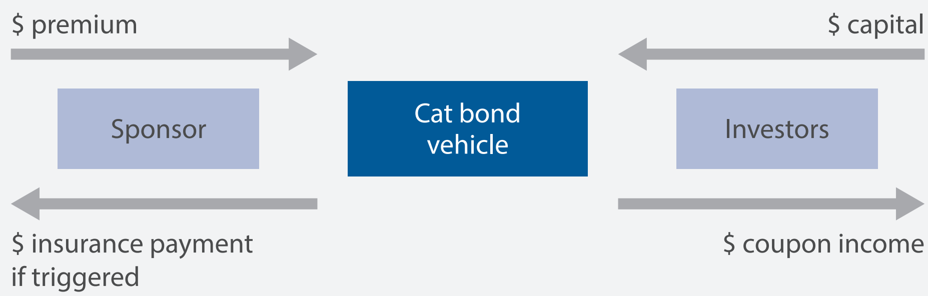
## Quantifying risks

Cat bond investors are typically given the "expected loss" of a deal to measure their risk levels, a figure that expresses the likelihood of capital loss in any given year. For example, a 1% expected loss means investors could lose that amount of their principal in any year – or looked at another way, is roughly similar to the prospect that a 1-in-100-year disaster would wipe out all their capital.

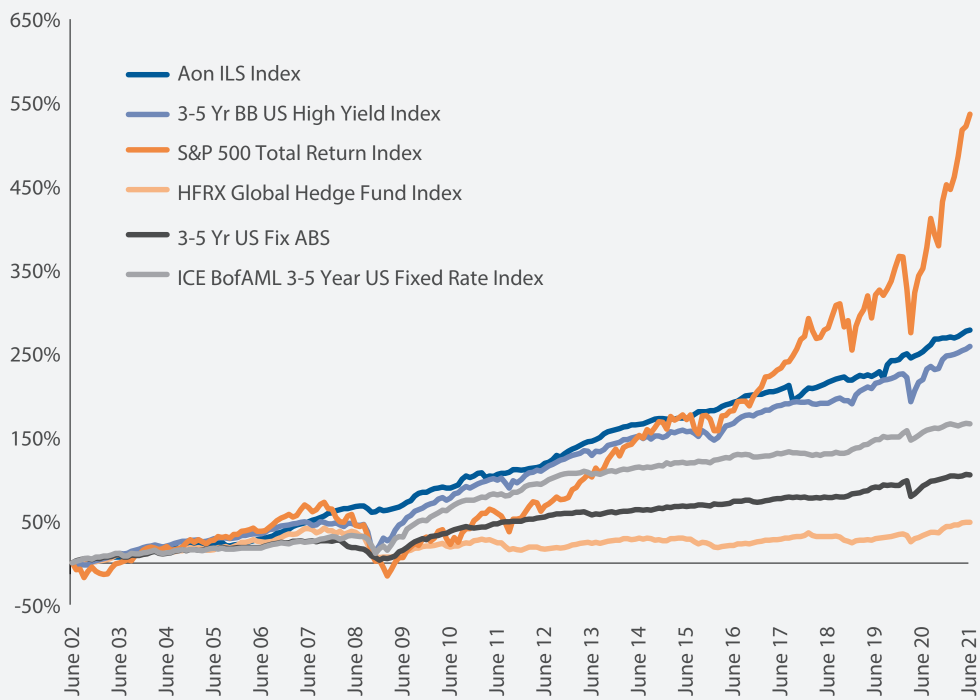
Cat bond spreads are often cited as a multiple of the deal's expected loss, which is an easy way of referencing the margin of premium earned in relation to potential losses. Typically, cat bonds in the 1%-2% expected loss range now offer investors around a 2x multiple (or spreads of 2%-4%), depending on the risk profile.

## What is a cat bond?

A cat bond transaction involves a sponsoring insurer paying investors a premium for reinsurance cover against defined catastrophe losses. If a cat bond triggers, investors' capital is used to reimburse a sponsor's losses. There is no requirement for insurers to later repay such sums to investors. However, if no qualifying event occurs, then investors recoup their capital at the end of the transaction (typically three to four years).




## Aon All Bond index versus financial benchmarks




Source: Aon

# Sizing up the market

Estimates vary, but ILS makes up around 15% of overall reinsurance capital at $95bn, according to figures from Aon. But what exactly does the ILS market's of capacity represent? There are several distinct segments within this total.

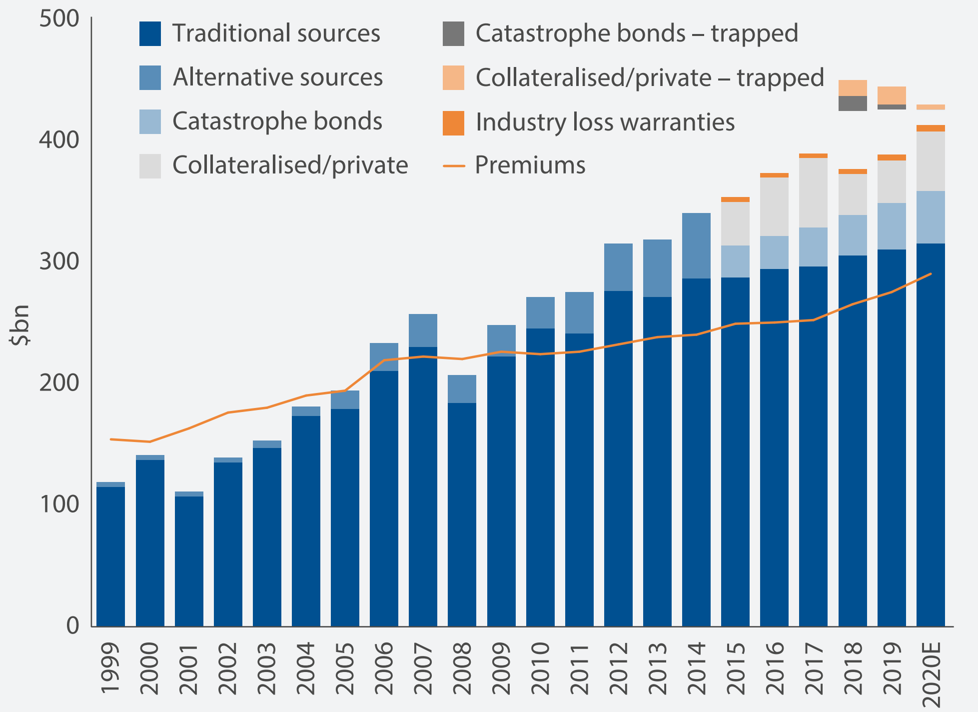
The catastrophe bond market attracts a wide range of investors looking for liquidity, although it typically presents a lower-risk, lower-return opportunity within the ILS world.

The niche industry loss warranty market is also relatively commoditised and easier to access, with a variety of risk-return options.

In contrast, the collateralised reinsurance segment is more specialised and difficult to access, but also provides a range of risk-return targets.

Finally, other small niches such as retro business can provide higher-octane strategies, while sidecars offer the chance to leverage off rated balance sheets and may introduce a range of diversifying risks.

## Dedicated reinsurance capital and global gross premiums (all lines) – 1999 to 2020




Source: HX Nova Portal, Swiss Re

## ILS market components


Source: Aon

**Catastrophe bonds**
The most liquid section of the ILS market. Reinsurance in tradeable form, typically providing slightly narrower terms of cover for specified perils.

**Collateralised re**
Effectively just traditional reinsurance contracts, providing indemnity cover for a buyer's losses, across a broad range of perils. ILS managers pledge cash collateral to back their liabilities, hence the name.

**Industry loss warranty**
Contracts that trigger not on a buyer's actual losses, but on the insurance industry's overall loss from specified disasters, e.g. a $5bn Florida hurricane.

**Sidecar**
Vehicles run by reinsurers in parallel to their balance sheets. Typically involve a reinsurer ceding a share of a set portfolio of risks to investors (via "quota share" reinsurance). Some are "market-facing", akin to a fund, where a reinsurer writes a specific portfolio for the vehicle.

# GLOSSARY OF TERMS

| Key phrase | Definition |
|---|---|
| Aggregate exceedance probability (AEP) | Probability of total annual losses of a particular amount or greater |
| Alternative risk transfer | Transferring risk through methods other than traditional insurance or reinsurance, for example utilising capital markets capacity through the issuance of insurance-linked securities |
| Attachment point | The point at which excess insurance or reinsurance protection becomes operative; the retention under an excess reinsurance contract |
| Attachment probability | Likelihood of losses exceeding the attachment point over the course of a one-year term |
| Administrator | Assumes all operating and reporting protocols for a special purpose insurer/entity |
| Basis risk | Risk that losses in a non-indemnity trigger differ from indemnity losses |
| Capacity | The largest amount accepted on a given risk or, sometimes, the maximum volume of business a company is prepared to accept |
| Catastrophe bond | Securities that transfer catastrophe risks from sponsors to investors |
| Cedant | Party to an insurance or reinsurance contract that passes financial obligation for potential losses to another party |
| Collateralised reinsurance | Reinsurance contract that is fully collateralised to the limit |
| Earned premium | The portion of premium (paid and receivable) that has been allocated to the (re)insurance company's loss experience, expenses and revenue |
| Excess of loss | System whereby a (re)insured pays the amount of each claim for each risk up to a limit determined in advance, while the (re)insurer pays the amount of the claim above that limit up to a specified sum |
| Exhaustion probability | Likelihood of losses exceeding the exhaustion point, causing a full loss on a reinsurance layer |
| Expected loss | The expected loss is the modelled loss within the layer divided by the layer size |
| Extension period | Time period after the scheduled maturity used to calculate losses for events which took place during the risk period |
| Extension spread | Spread paid during the extension period (typically a reduced rate from the initial risk spread) |
| Gross premiums | Premium before subtracting direct costs |
| Indemnity trigger | Type of trigger that most closely resembles the traditional market ultimate net loss cover, and offers ceding insurers (a.k.a. sponsors) the ability to recover based on actual losses |
| Industry loss index trigger | Type of trigger where payouts are determined by a third party estimate of industry losses |
| Industry loss warranty (ILW) | Form of reinsurance or derivative contract that covers losses arising from the entire insurance industry rather than a company's own losses from a specified event |
| Incurred losses | The total amount of paid claims and loss reserves associated with events from a particular time period |
| Insurance-linked security (ILS) | Financial instruments whose value is affected by an insured loss event |
| Limit | The maximum amount of (re)insurance coverage available under a contract |
| Loss ratio | Incurred losses divided by earned premiums (earned premiums include reinstatement premiums) |

| Key phrase | Definition |
|---|---|
| Modelled loss trigger | Type of trigger where payouts are determined by inputting event parameters into a predetermined and fixed catastrophe model to calculate losses |
| Net premiums | Premium less direct costs |
| Quota share | Reinsurance where the cedant transfers a given percentage of every risk within a defined category of business |
| Occurrence exceedance probability (OEP) | Probability that any single event within a defined period will be of a particular loss size or greater |
| Parametric trigger | Type of trigger where recoveries are triggered by a formula that uses measured or calculated parameters of an actual catastrophe event (e.g. wind speed, magnitude of an earthquake) |
| Peril | A specific risk or cause of loss covered by an insurance policy |
| Probable maximum loss (PML) | The anticipated maximum loss expected on a policy |
| Profit commission | A provision that provides the cedant a share of the profit from business ceded |
| Proportional reinsurance | System whereby the reinsurer shares losses in the same proportion as it shares premium and limit |
| Rate on line | Reinsurance premium divided by reinsurance limit |
| Reinsurance | A transaction whereby the reinsurer, for a consideration, agrees to indemnify the ceding insurer against all or part of the loss which the insurer may sustain under a policy or policies that it has issued |
| Reinsurer | Company that provides financial protection to an insurance company |
| Reset | Adjusting a layer of a multi-year catastrophe bond to maintain a bond's probability of loss at the level defined at issuance |
| Retention | The net amount of risk the ceding company keeps for its own account |
| Retrocession | A transaction whereby a reinsurer cedes to another reinsurer all or part of the reinsurance it has previously assumed |
| Risk period | Time period for which a reinsurance agreement covers events taking place |
| Sidecar | A structure to allow investors to share in the profits and losses of an insurance or reinsurance book of business |
| Special purpose insurer/ entity (SPI/SPE) | A company created by (but not owned by) a (re) insurer for the purpose of raising capital for a specified programme |
| Treaty | An agreement between a cedant and a reinsurer stating the types or classes of businesses that the reinsurer will accept from the cedant |
| Underwriting profit | Earned premium minus incurred losses and incurred commissions (earned premiums include reinstatement premiums) |
| Variable reset | Adjusting a layer of a multi-year catastrophe bond up or down within a pre-defined range of probability of loss, with a corresponding update in risk spread |
| Vendor models | Software that estimates expected loss and probability of occurrence for specified exposure sets and predefined peril scenarios. The three largest vendors by market share are AIR Worldwide, Risk Management Services and Eqecat |
| Written premiums | Premium registered on the books of an insurer or a reinsurer at the time a policy is issued |

# Manager list

| Manager by type | Total AuM in ILS $mn (estimated) | Notes | ILS strategies | Established in ILS | Base |
|---|---|---|---|---|---|
| **Specialist ILS manager** | | | | | |
| Fermat Capital Management | 8,900 | Independent ILS manager | Cat bond focus | 2001 | US |
| Nephila Capital | 8,500 | Markel-owned since Q4 2018 | Multi-instrument cat ILS and weather funds, non-cat Lloyd's syndicate | 1998 | Bermuda |
| LGT Insurance-Linked Partners | 6,800 | Former Clariden Leu ILS team moved to Swiss alternatives manager in 2012 | Various funds and bespoke mandates. Manages own rated reinsurance carrier Lumen Re | 2005 | Switzerland |
| RenaissanceRe | 6,730 | Reinsurer platform | Two funds (cat bond and collateralised re); two rated cat vehicles, one casualty/specialty sidecar; life joint venture | 1999 | Bermuda |
| Leadenhall Capital Partners | 6,005 | Majority-owned by Japanese insurance group MS&AD | Non-life and life/credit funds | 2008 | UK |
| Elementum Advisors | 4,120 | Independent manager; White Mountains owns sold 30% stake | Multi-instrument cat funds | 2009 | US |
| Schroders Capital | 4,072 | Fully owned by Schroders since July 2019 | Multiple cat bond and multi-instrument funds; life and non-life | 2008 | Switzerland |
| Securis Investment Partners | 3,917 | Northill Capital owns majority stake | Life, non-life and mixed strategy funds | 2005 | UK |
| Credit Suisse Insurance-Linked Strategies | 3,900 | Zurich-based asset manager with Bermuda reinsurance office | Various funds with different risk levels | 2003 | Switzerland |
| Aeolus Capital Management | 3,250 | Majority-owned by Elliott Management | Retro and collateralised re | 2006 | Bermuda |
| AlphaCat Managers | 3,200 | Affiliate of AIG's Validus reinsurance business | Two multi-instrument funds; cat bond tracker fund | 2008 | Bermuda |
| Scor Investment Partners | 3,158 | Asset management affiliate of reinsurer | Multi-instrument funds | 2011 | France |
| Neuberger Berman Insurance-Linked Strategies | 3,100 | Owned by Neuberger Berman since 2018 | Nat cat risk via ILWs, cat bonds and other ILS | 2009 | Bermuda |
| Pillar Capital Management | 3,100 | Management-controlled firm part-owned by TransRe | Collateralised re focus | 2008 | Bermuda |
| Hudson Structured Capital Management | 3,000 | Independent manager with financing from Eldridge | Reinsurance AuM only listed. Multi-risk ILS fund and InsurTech venture fund | 2016 | US/Bermuda |
| Stone Ridge Asset Management | 2,900 | Asset manager targeting HNW market | Mutual fund invests in cat bond and sidecars; casualty risk vehicle | 2013 | US |
| Twelve Capital | 2,676 | Independent firm; Swiss bank GKB owns 30% stake | Cat bond and multi-instrument ILS funds (insurance debt fund not tracked) | 2010 | Switzerland |
| Swiss Re | 2,170 | Reinsurer platform | Sidecars and 1863 Fund | 1990 | Switzerland |
| Amundi Investments | 2,000 | Amundi subsidiary | Pioneer ILS Interval fund and multi-strategy sleeves | 2007 | US |
| Hiscox Insurance-Linked Strategies | 1,900 | Hiscox-owned asset manager | Various diversified funds; primary sidecar | 2014 | Bermuda |
| Integral ILS | 1,500 | Independent firm collaborating with TransRe and Amwins | Open-ended in property cat risk in private (re)insurance; bespoke cat bond and retro strategies new for 2022. | 2020 | Bermuda |
| Axa XL ILS | 1,200 | Subsidiary of reinsurer Axa-XL | Multiple quota share sidecars, one algorithmic strategy | 2014 | Bermuda |
| PartnerRe | 1,100 | Reinsurer platform | Sidecars | | US |
| Aspen Capital Markets | 1,050 | Reinsurer subsidiary | Commingled funds and sidecars | | Bermuda |
| Axis ILS | 1,000 | Reinsurer subsidiary | Various sidecars. $1.5bn casualty joint venture Harrington Re not tracked | 2014 | Bermuda |
| Gildenbrook | 1,000 | New launch from Dan Brookman, ex-Axa XL manager | Assets under advisory, not management, in private quota share and collateralised reinsurance and private credit | 2021 | Bermuda |
| Axa Investment Managers | 909 | Affiliate of insurer | Various cat ILS funds | 2007 | France |
| Mt Logan (Everest Re sidecar) | 877 | Everest Re subsidiary | Quota share sidecar | 2013 | Bermuda |
| Pimco | 775 | Bond giant, part of Allianz group | Collaborates with Allianz and also takes third-party risks | 1971 | US |
| Tokio Marine Asset Management | 725 | Asset management arm of Tokio Marine Group | Largely ILS/cat bonds | | Japan |
| Plenum Investments | 687 | Independent asset manager | Cat bond focus, long only strategies. Excludes life settlements/pure debt funds | 2010 | Switzerland |
| Arch Underwriters | 600 | Reinsurer platform | Sidecars. Underwrites for Watford Re, not tracked here | 2014 | Bermuda |
| Munich Re | 590 | Reinsurer platform | Sidecars | 2006 | Germany |
| Lancashire Capital Management | 563 | Reinsurer subsidiary | Market-facing sidecar in multi-class risk | 2013 | Bermuda |
| TransRe Capital Markets | 500 | Reinsurer subsidiary | Sidecars | | US |
| PG3 | 450 | Family office; may take third-party capital | Non-life and life; legacy, life settlements, and other insurance finance | 2008 | Switzerland |

| Manager by type | Total AuM in ILS $mn (estimated) | Notes | ILS strategies | Established in ILS | Base |
|---|---|---|---|---|---|
| Tangency Capital | 415 | Independent manager | Bespoke quota share portfolio | 2018 | UK |
| Chard Re | 360 | Start-up led by ex-Aquilo, AQR reinsurance team | Diversified reinsurance fund | | UK |
| Resolute Global Partners | 300 | Formerly ILS CM; independent ILS manager | Specialty focus | 2014 | Bermuda |
| Sussex Capital | 300 | Brit Insurance subsidiary | Sidecars and Lloyd's specialty fund | 2018 | UK |
| Agile Risk Advisory | 250 | Hedge fund seeded D&F strategy, cash and crypto-collateralised assets | Special reinsurance situations | | UK |
| Azimut Investments | 230 | Affiliate of Italian asset management Azimut Group | One cat bond fund plus one multistrategy fund including small longevity exposure | 2008 | Luxembourg |
| Leine Investments | 200 | Fund run by Hannover Re which has invested $200mn | Cat bonds and collateralised re | 2013 | Germany |
| Ledger ILS | 150 | Not disclosed | Not disclosed | | US |
| Sumitomo Mitsui DS Asset Management (Tokyo) | 105 | Advised by Mitsui Sumitomo Insurance | Cat bond funds | 2014 | Japan |
| Tenax Capital | 71 | Fosun holds majority stake | Cat bond funds | 2017 | UK |
| Aizawa Asset Management | 50 | Formerly Eastpoint; backed by Japanese manager Asuka Asset Management | Cat bond focus | 2012 | Bermuda |
| Entropics Asset Management | 25 | Independent ILS manager | Cat bond focus | 2015 | Sweden |
| Solidum Partners | Not disclosed | Independent ILS manager | Cat bond and multi-instrument funds | 2004 | Switzerland |
| Entropics Asset Management | 25 | Independent ILS manager | Cat bond focus | 2015 | Sweden |
| Chard Re | Not disclosed | | | 2021 | UK |
| Solidum Partners | Not disclosed | Independent ILS manager | Cat bond and multi-instrument funds | 2004 | Switzerland |
| **TOTAL** | **99405** | | | | |
| **ILS fund of funds** | | | | | |
| K2 Advisors | 915 | Hedge fund of funds manager | Invests with multiple ILS funds; buys cat bonds directly | 2003 | US |
| City National Rochdale | 200 | City National Bank-owned advisor targeting HNW clients | Allocates to NB Re via Select Strategies ILS fund | 2017 | US |
| ILS Advisers | 181 | Part of Hong Kong-based investment manager HSZ | Fund of funds; index tracker fund tracking ILS Advisers index | 2014 | Bermuda |
| Altair Reinsurance Fund | 78 | Operated by wealth advisor First Republic Securities | Feeds into Hudson Structured ILS funds | 2018 | US |
| AIM Capital | 20 | Finnish fund of funds manager | AIM Insurance Strategies fund | 2011 | Finland |
| **TOTAL** | **1394** | | | | |
| **Select multi-strategy investors active in ILS; but not offering external ILS strategies** | | | | | |
| Challenger Life | 850 | Annuity provider and investment manager | Invests in funds and sidecars | 1900 | Australia |
| Quantedge | 350 | Hedge fund | Invests in ILS as part of multi-strategy funds | 2013 | United States of America |
| One William Street | 300 | Alternatives manager | Hired ILS portfolio manager to invest direct | 2020 | United States of America |
| Baillie Gifford | 40 | Scottish-based asset manager | Buys ILS directly | 1900 | United Kingdom |
| Aberdeen Asset Management | 25 | Scottish-based asset manager | Buys cat bonds | 1900 | United Kingdom |
| DE Shaw | Not disclosed | US hedge fund with Bermuda underwriters on staff | Writes collateralised re/retro from overall funds | 2007 | United States of America |
| TIAA | Not disclosed | Pension advisor and mutual fund manager | Buys cat bonds directly | 1900 | United States of America |
| **TOTAL** | **1565** | | | | |

**Quarter lagging disclosure
Source: *Trading Risk*

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# Insurance Linked Investments

## Life & Alternative Credit and Non-Life Insurance Linked Strategies

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