Tenax Capital ILS Market Update

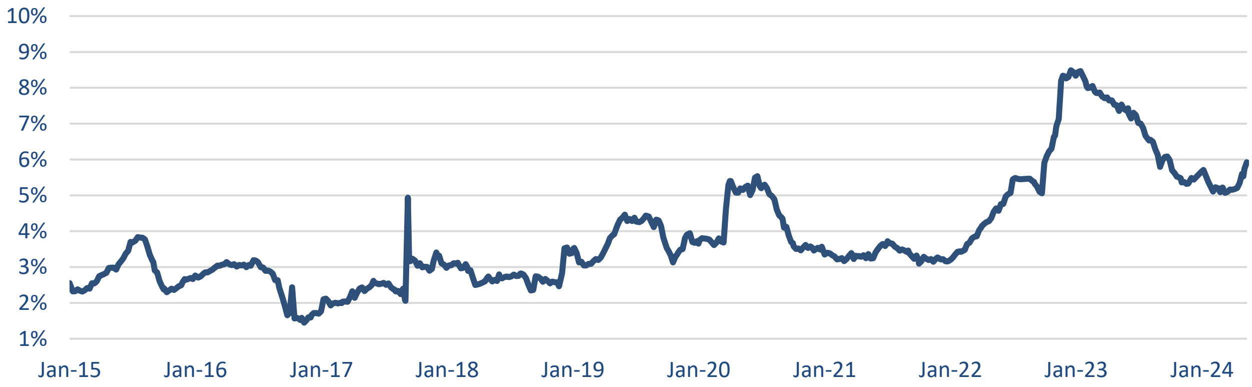
Recent Volatility in the Cat Bond Market

May 2024

After recent volatility in catastrophe bonds, we are taking this opportunity to examine the current pricing environment before the primary market quietens down ahead of the Atlantic Hurricane season. In the past two years we have experienced several situations that have impacted catastrophe bonds, and we aim to determine whether these have had any lasting effects on spreads.

We introduce the concept of Net Risk Margin (NRM), defined as the catastrophe bond spread net of the expected loss. This metric provides a clear indication of the compensation received for holding the underlying risk. Chart 1 displays the average NRM since 2015, setting the stage as we review the main events that have impacted catastrophe bond spreads.

Chart 1: **Cat Bond Market Net Risk Margin**

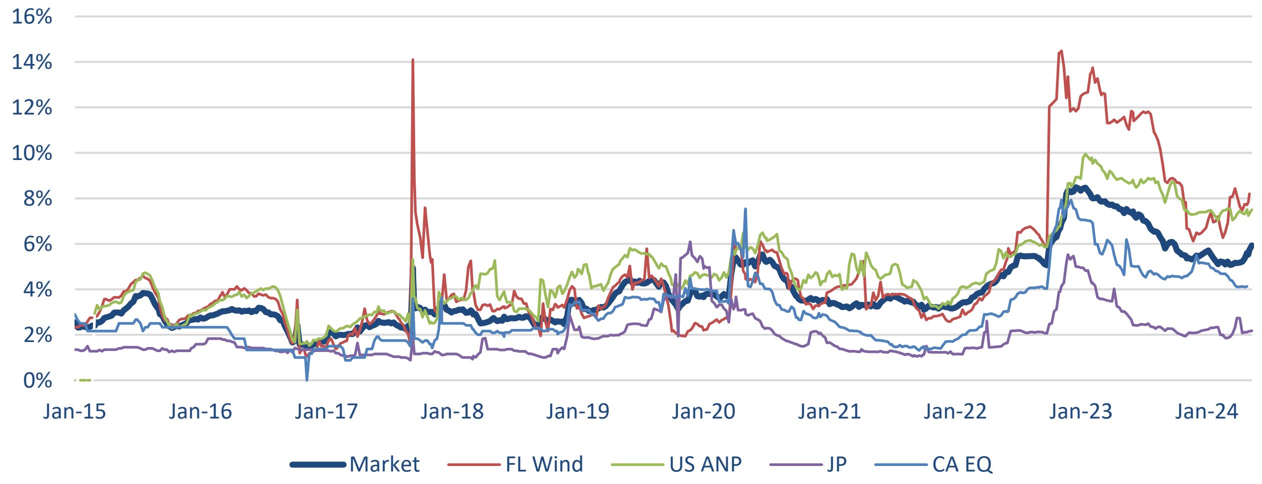


Source: Swiss Re weekly cat bond pricing, Tenax calculations.

With very few exceptions, which were event-driven and short-lived, the NRM remained range-bound between 2% and 4% until Q1 2022. Then, converging factors such as rising global inflation and shrinking reinsurance capacity in peak peril zones fuelled a sharp increase in spreads. This acceleration continued following Hurricane Ian and persisted into early 2023, as generous new issuance premia were necessary to attract investor interest. In 2023 we witnessed a relentless tightening, leading to the highest annual performance in the history of catastrophe bonds. Valuations settled well below recent highs, yet still above the average of the last decade, sparking a debate over whether the glass is half full or empty.

A general pattern we have observed across the entire catastrophe bond market is increased spread volatility, stemming from various challenges the sector faced in early 2022, which culminated with Hurricane Ian. However, upon closer examination, a greater degree of dispersion becomes apparent once we isolate specific triggers and perils.

Chart 2: **Net Risk Margin by Peril**



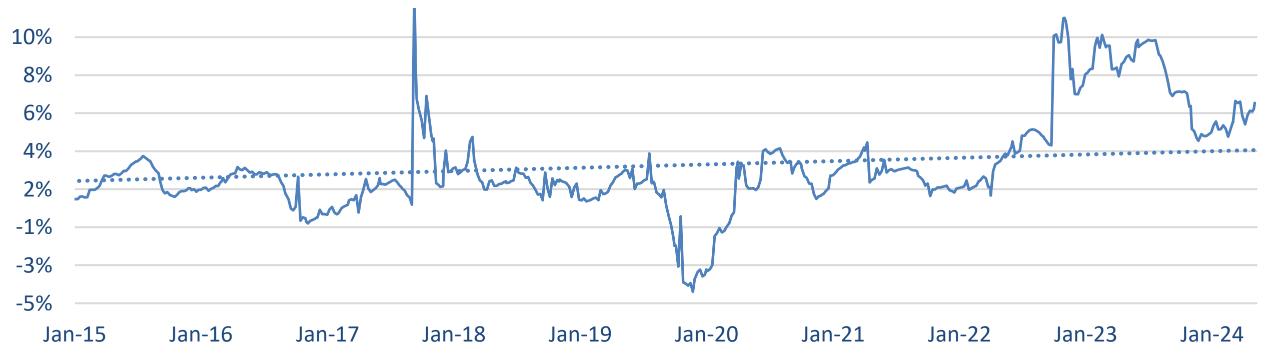
Source: Swiss Re weekly cat bond pricing, Tenax calculations. FL Wind: Florida wind, US ANP: US all natural perils, JP: Japan perils, CA EQ: California earthquake

In examining the NRM by peril (Chart 2), we note that the gaps across various perils have widened over the last two years, with each peril behaving differently compared to past post-event environments. Specifically, the spike observed in Florida wind post-Hurricane Irma (2017) was short-lived, a trend also evident after Hurricane Michael (2018). From 2015 to 2022, the NRM for Florida wind was capped at 6%, and most often remained below 4%. Since 2022, however, 6% appears to have become the new minimum threshold, with this new threshold having already been tested in a couple of occasions by the market.

Japan-related perils present a different picture. Post-event spikes in 2018 and 2020 were notably brief, and even the general market repricing in 2022 has already seen spreads largely retracing closer to historical averages. We note that the recent widening of NRM has been more persistent for US perils, particularly Florida wind and atmospheric perils.

We isolate Florida and Japan to analyse the differential in NRM over time (Chart 3). We observe a significant shift in relative pricing, where, on average, the risk-adjusted compensation for holding Florida wind risk over Japan is at one of its widest historical levels. The relative attractiveness of Florida versus diversifying perils has substantially increased, and it is currently even above the recent lows reached at the end of 2023.

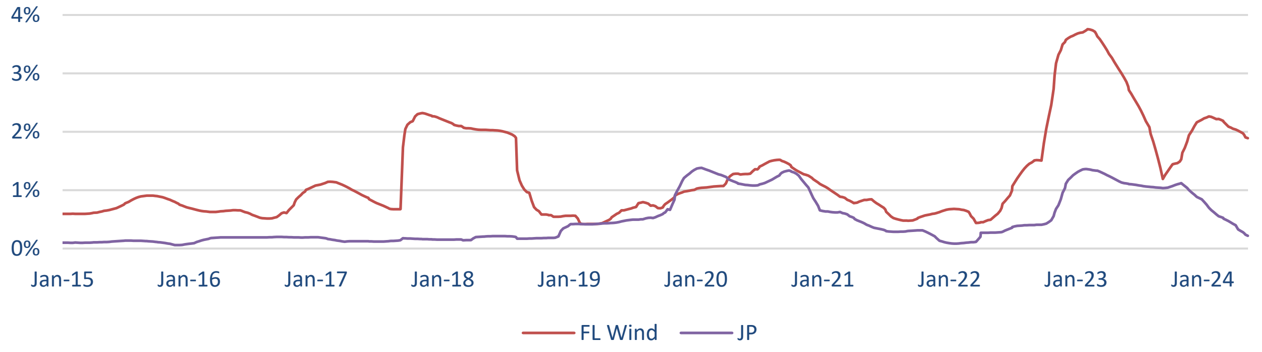
Chart 3: **NRM Differential between Florida Wind and Japan Perils**



Source: Swiss Re weekly cat bond pricing, Tenax calculations.

The relatively low beta of diversifying perils' spreads compared to peak perils is also evident in spread volatility. We illustrate this by plotting the rolling 12-month volatility of weekly NRMs, using Florida and Japan as references (Chart 4). As expected, Florida exhibits structurally higher volatility. However, the differential has widened since 2022, with volatility in Japan returning to around its historical mean, while Florida remains elevated.

Chart 4: **12 Months Rolling Volatility of Weekly Spreads**

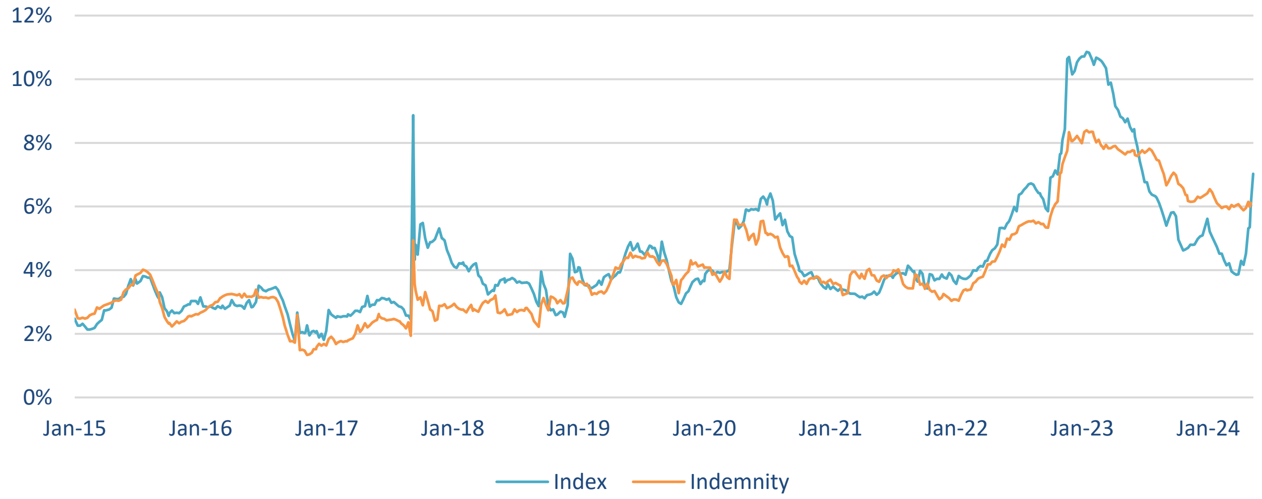


Source: Swiss Re weekly cat bond pricing, Tenax calculations.

The patterns observed when analysing Europe and other non-peak perils align closely with those previously described. We conclude that the demand for non-peak perils is less influenced by general market sentiment, as the ongoing need to diversify portfolios away from U.S. wind risk continues to cap spreads in these areas. Insurance-Linked Securities (ILS) themselves offer significant diversification from traditional equity and credit asset classes. Therefore, the necessity to diversify further within the ILS sector remains a topic of debate, largely depending on the specific objectives of an investor's ILS allocation.

Another interesting aspect that has emerged over the last two years is the spread dispersion by trigger type, particularly the behaviour of index versus indemnity triggers post-Hurricane Ian (Chart 5). We continue to examine this relationship based on NRMs to enhance data comparability.

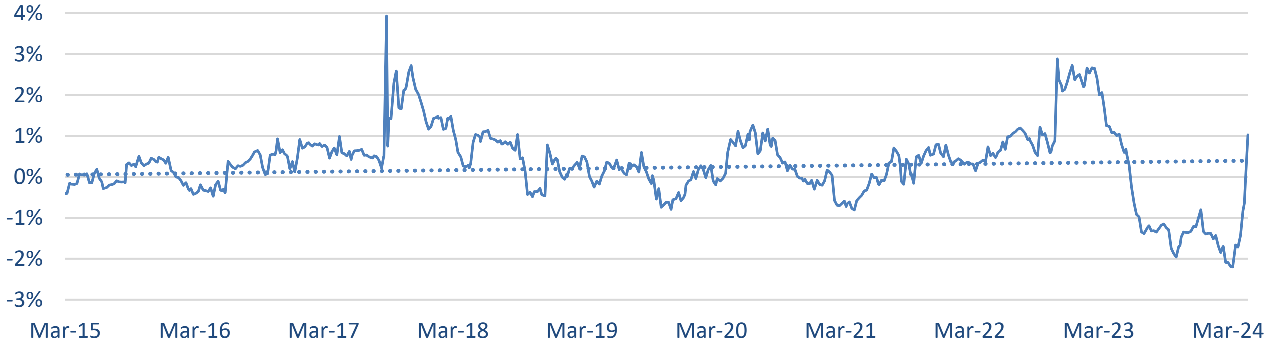
Chart 5: **Net Risk Margin by Trigger**



Source: Swiss Re weekly cat bond pricing, Tenax calculations.

Risk-adjusted premia for indemnity and index bonds have historically been aligned, with index temporarily trading above indemnity following the events of 2017. After Hurricane Ian, a similar situation emerged, although it was followed by a much longer tightening phase that tested new lows in terms of relative NRM, before abruptly readjusting to around average levels (Chart 6).

Chart 6: **NRM Differential between Index and Indemnity Triggers**



Source: Swiss Re weekly cat bond pricing, Tenax calculations.

The surprising factor has not been the direction, but rather the magnitude of the movement. In just over 12 months, the NRM differential shifted dramatically from about +3% to -2%. We can conclude that these two overreactions have now neutralized each other, with a more balanced relationship between index and indemnity bonds being restored. Going forward, we anticipate that any further deviations are likely to be event driven.

Lastly, we offer our insights into the reasons behind, and the significance of, recent volatility in catastrophe bonds and spread dislocation across perils and triggers.

Initially, **Hurricane Ian's impact led to materially wider spreads across the market. However, it was not t long before the market entered a tightening phase**, where investors moved quickly to capitalise on these more attractive spreads. Once it became clear that Ian would not significantly impact catastrophe bonds, managers were eager to increase exposure in a segment proven to withstand such an event. At those levels, the attractiveness of the trade-off embedded in almost all index trigger bonds became apparent. This trade-off involves adding tail and concentration risk on one side, and the absence of secondary perils on the other.

Second, **market capacity was stretched toward the end of the spring issuance season**. Investors' appetite entering 2024 was high, as evidenced by most new issues being materially upsized. Net issuance has been significant, with some deals reaching record sizes. However, towards the end of the renewal period, an index trigger deal failed to price within guidance, sparking a sharp repricing in the segment. It may be prudent not to focus too heavily on the specific issuance that acted as a catalyst for the widening spreads, as the demand for higher risk premia did not arise from idiosyncratic features of that deal. Instead, we might consider this a matter of timing—a bond offering non-diversifying peril exposure came to market just as a period of abundant new issuances was concluding, making it less appealing to investors facing capacity constraints ahead of an anticipated active Atlantic Hurricane season.

Third, **a recent update to a vendor model has led to more conservative risk metrics**, influencing the adjustment of the expected risk-reward profile for several bonds. This highlights the importance of complementing third-party models with one's own risk assessments to ensure a smoother transition of risk premia whenever a model update is released. It is also noteworthy how such an update can trigger a wave of selling activity, with spreads widening as bondholders suddenly realize they are exposed to risks beyond their comfort levels. We can further conclude that this resulting pricing movement may present a significant buying opportunity for funds that do not adhere strictly to expected loss criteria as their core investment guideline. Those with a more flexible approach can capitalise on those who must sell when risks exceed a predetermined threshold, thereby generating meaningful alpha when the dust settles.

In conclusion, the catastrophe bond market has experienced a peak of volatility that is unusual in a non-event scenario. Index trigger bonds have been disproportionately impacted, initially moving from being expensive to cheap compared to indemnity bonds, before settling back into a more balanced range. Looking ahead, we expect index trigger bonds to remain more subject to volatility, especially if the upcoming wind season produces as many events as consensus forecasts predict. Within this category, however, there is a variety of risk profiles, allowing managers to precisely shape their preferred positioning.

Furthermore, we advise caution in assuming that indemnity triggers are structurally more expensive than index triggers. Indemnity deals often include secondary perils within their scope, where risk models typically lag in reliability compared to peak perils and may underestimate the risk. Indemnity trigger bonds also expose investors to single sponsor risk, potentially leading to moral hazard through poor underwriting and claims handling. While most loss projections from sponsors have decreased since Hurricane Ian, there have been notable instances where loss projections have unexpectedly increased. Such surprises are less frequent with index trigger bonds, emphasizing their comparative predictability.

Finally, data shows that index trigger bonds default far less often than indemnity bonds. While we have shown that they are more susceptible to mark-to-market swings, by avoiding loss-making bonds and strategically capitalising on this volatility, the potential for generating alpha has been demonstrated in the subsector's performance in recent years.

Tenax Capital Team

The team is available to answer your questions, discuss topics and provide material upon request.

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