

What the catastrophe bond market could be telling us about climate risk

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Climate losses are rising, with multiple headlines testifying to their significant size and growing concern around the portion that is uninsured.[1]

Climate change has likely influenced this increase,[2] impacting both the frequency and the severity of events. Traditional insurance models, which rely on history, may fail to account for the current environment,[3] and thus reduce insurance.

Figure 1. Interest score for 'cat bonds' search on Google Trends in 2025. Source: Google, accessed 8 Jan 2026.



Catastrophe (or 'cat') bonds, where a protection buyer (usually insurer/reinsurer) pays an investor to cover losses linked to specific perils, are often cited as a potential solution, and rising in interest (Figure 1 shows a recent spike in Google search results).[4] In principle, the products offer investors diversified exposure, and may also give information to the market on expected losses linked to climate-related disasters.

In this paper we analyse the cat bond market, both to provide an overview of issuance, price, and performance, and what insights it might offer into climate risk, with the following key takeaways:

- Issuance volumes have been rising, but remain low in the context of insurance losses. While many perils are covered, there was an uptick in wildfire coverage after the Los Angeles events last year, suggesting this product can respond to specific disasters.
- Investment returns have been high, indicating the market price for cat protection exceeds realised losses. This could support investor demand and growth. Alternatively, it could imply an expectation of rising losses.
- Holdings data is not comprehensive, but our sample analysis shows that 50% of outstanding bonds were held by funds identified as sustainable. This suggests an opportunity for investors to signal demand for broader coverage — and to support investments in adaptation and resilience where material risk is being reduced.

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[1] "sigma 1/2025: Natural catastrophes: insured losses on trend to USD 145 bn in 2025", Swiss Re, 29 Apr 2025.
[2] "Climate change presses on: Devastating wildfires and intense thunderstorms exacerbate losses for insurers", Munich Re, 13 Jan 2026.
[3] "Insuring the uninsurable: Climate risks expose broken system < Social Responsibility", Social Responsibility, 21 May 2025.
[4] "Cat bonds offer profit in perils — for now", Financial Times, 23 Jul 2024.

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Introduction

Catastrophe bonds, also known as 'cat' bonds, are designed to transfer natural catastrophe risk to capital markets participants.[5] In a typical transaction, the issuer is a Special Purpose Vehicle (SPV), which sells bonds to an investor, and uses the proceeds to buy collateral. There will also be a reinsurance agreement between the SPV and a sponsor, where a premium is paid by the sponsor in exchange for protection against the deal's covered perils.

Jamaica

A recent high-profile event in the cat bond space is Hurricane Melissa, which struck Jamaica with devastating impact in October 2025.[6] This storm triggered USD150mn coverage that Jamaica had purchased from the World Bank, which it had in turn transferred to the market via a cat bond issued by the IBRD.[7] Investors in the bond in question, IBRD Float 27s ISIN XS2806459314, lost their capital.[8]

This cat bond was structured with a parametric trigger, meaning payouts were tied to specific conditions, like thresholds for central pressure and storm track, rather than actual losses. The latter kind of loss-based structure is known as indemnity.

Indemnity cat bond structures are more popular than their parametric counterparts, comprising around three-quarters of issuance in 2025.[9] The parametric trigger is cited as one of the reasons the bond was seen as a success for the Jamaican government — it enabled an almost immediate payout, helping to cover urgent clean-up costs.

Questions

In light of how successful this cat bond is considered to have been in supporting Jamaica, we take a more holistic look at these securities.

As a niche product often structured via off-shore SPVs, full transparency on deal details is often not disclosed. However, there is data available on some aspects, and this paper analyses the information that is available information to prompt debate and raise key questions about this compelling instrument class:

1) Which perils are typically referenced in this market? To what extent is this product helping expand protection in the face of increased climate physical risks?

2) What is the market-implied price of disaster insurance, as implied by cat bond pricing and performance? How have issuer and investor interests converged in this product and how are they reflected in pricing?

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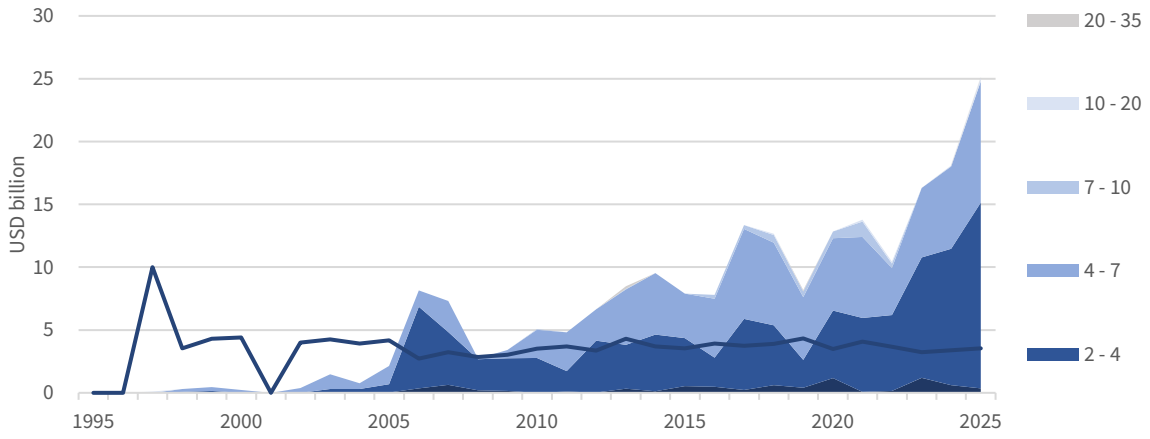
[5] "What is a catastrophe bond (or cat bond)?", Artemis.bm, accessed 22 Oct 2025.
[6] "The trauma after the storm: Hurricane Melissa leaves trail of emotional devastation across Jamaica", The Guardian, 16 Dec 2025.
[7] "Hurricane Melissa triggers 100% payout of $150 million World Bank Catastrophe Bond for Jamaica", World Bank, 7 Nov 2025.
[8] "Jamaica's $150 million payout rekindles parametric concerns, but ILS market holds firm", Insurance News, 18 Nov 2025.
[9] "Q4 2025 Catastrophe Bond & ILS Market Report", Artemis.bm, 2 Jan 2026.

3) Who are the typical investors in cat bonds? Is there a role for sustainable investors to use such a product to improve insurability for those most at risk of climate disasters?

Market summary

Cat bonds were first issued in the 1990s. Issuance has grown in the past five years, as shown in Figure 2. Total issuance in 2025, at USD25.1bn, is higher than the 2024 total of USD18.1bn — making it a record year.[10]

Figure 2. Notional issuance of cat bonds, as labelled by Bloomberg, maturity calculated as difference between issuance year and maturity year. Source: Bloomberg Finance L. P., accessed 7 Jan 2026.



As shown in Figure 2, these securities typically have short maturities, with the majority having a life of between two and four years. Figure 3 gives the outstanding notional of USD62.4bn, split by issuance year, and Table 1 shows that virtually all are issued in USD.

Figure 3. Outstanding cat bonds by issuance year. Source: Bloomberg Finance L. P., accessed 7 Jan 2026.

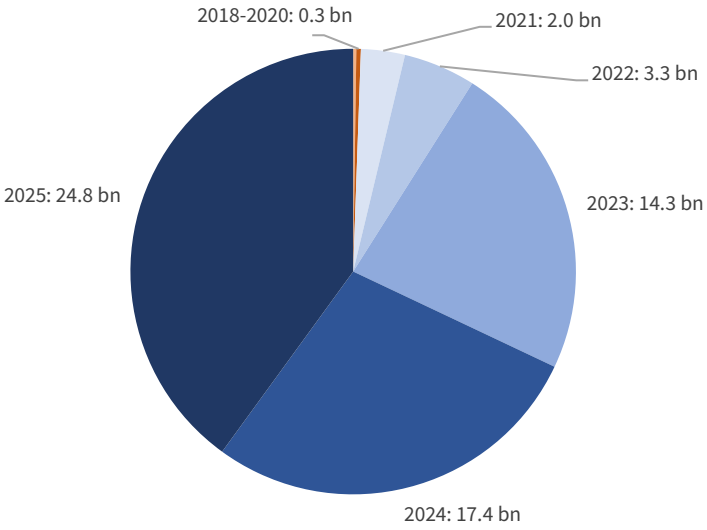


Table 1. Outstanding cat bonds by currency. Source: Bloomberg Finance L. P., accessed 7 Jan 2026.

Currency	Outstanding notional (USDbn)
USD	59.0
EUR	2.7
GBP	0.3
CAD	0.2
NZD	0.1

Nevertheless, volumes are growing, in line with these instruments' increased profile and investor interest. Due to the short-dated nature of the securities, the outstanding cohort was issued

[10] "Catastrophe Bonds' Huge Market Gains Put Reinsurers on Backfoot", Bloomberg, 21 Oct 2025.

recently, with just under 90% within the last three years (as shown in Figure 3 on the previous page).

Bonds outstanding

For 2025 issuance volume of cat bonds was USD25.1bn, contributing to the total outstanding of USD62.4bn.[11] This may seem small against estimated global natural peril economic costs of USD417bn in 2024, of which only USD154bn were insured.[12] Against this, cat bonds would need to expand volumes many times in order for realised losses to be covered.

Perils covered

Looking at outstanding cat bonds and insurance-linked securities, according to Artemis.bm (a specialised cat bond and insurance-linked security data provider), around 45% are 'multi-peril', and are typically linked to a variety of triggers. Just under 30% cover storms and flooding, while around 15% cover earthquakes.[13]

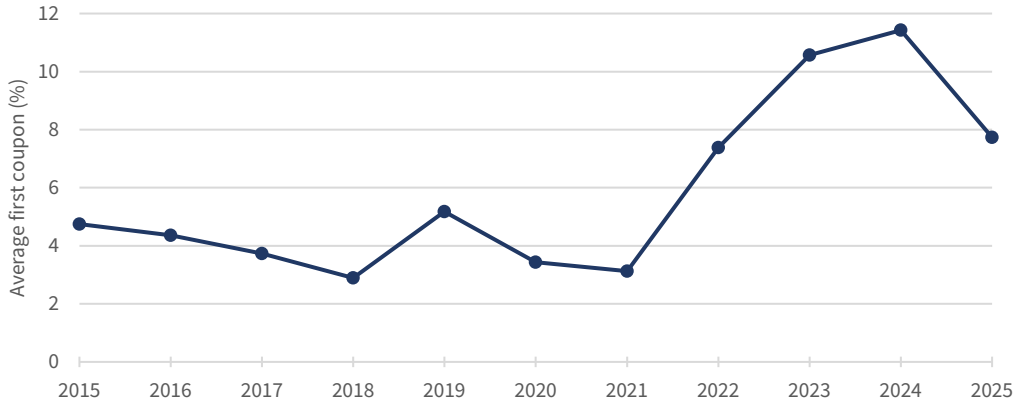
Looking at full-year 2025 issuance by peril, the substantial number of deals with 'multi-peril' coverage means it is hard to assess to what extent this market is tracking climate-related physical risks, and thus supporting ongoing insurance in areas where losses are rising.[14]

What is notable, however, is that in Q3 2025, California wildfire looks to have been included in about a quarter of new deals — a substantial increase.[15] This is perhaps in response to a changed focus after record losses coming from the LA fires in January 2025.[16] This figure reduced in Q4 2025, suggesting the surge was in response to specific events to support insurability.

Market pricing

Cat bonds typically offer floating coupons. This means that in order to monitor how pricing has changed, we have to consider the first coupon of each bond. Figure 4 shows the average coupon of bonds for each issuance year.

Figure 4. Average first coupon for cat bonds by issuance year. Source: Bloomberg Finance L. P., accessed 7 Jan 2026.



[11] Data from Bloomberg Finance L. P. where field "CATASTROPHE = Y", as 7 Jan 2026.
[12] "Natural Catastrophe and Climate Report: 2024", Gallagher Re, Jan 2025.
[13] "Catastrophe bonds & ILS outstanding by risk or peril", Artemis.bm, accessed 1 Dec 2025.
[14] "Q4 2025 Catastrophe Bond & ILS Market Report", Artemis.bm, 2 Jan 2026.
[15] "Q3 2025 Catastrophe Bond & ILS Market Report", Artemis.bm, Sep 2025.
[16] "LA wildfire damages set to cost record $135bn", BBC News, 9 Jan 2025.

This metric implies that pricing has shifted upwards in the past five years, tracking growth in issuance (see Figure 2 earlier). While this is against a backdrop of rising rates, it is important to remember that the products themselves are quite short-dated, with limited duration.

The price of a cat bond reflects the fair market value agreed upon by a buyer and seller to transfer catastrophe risk. The fact that insurers (most of which are American) are willing to pay a premium for this protection may run counter to the prevailing media narrative in the region.[17]

Performance

Table 2 gives historical returns for some select total return benchmarks, including a cat bond index.

Table 2. Returns for select funds over 20 years. Source: Bloomberg Finance L. P., accessed 7 Jan 2026.

Asset Class	Ticker	Name	1y return	Average annual return (5y)	STDEV of annual return (5y)	Sharpe ratio (5y)	Average annual return (10y)	STDEV of annual return (10y)	Sharpe ratio (10y)
Cat bonds	SRCATTRR Index	Swiss Re Cat Bond TR Idx	11%	10%	9%	1.1	7%	7%	1.0
US Equities	SPXT Index	S&P 500 Total Return	18%	14%	19%	0.7	15%	16%	0.9
US IG bonds	LBUSTRUU Index	U.S. Aggregate	7%	0%	8%	-0.0	2%	6%	0.3
US HY bonds	LF98TRUU Index	U.S. Corporate High Yield	9%	5%	9%	0.5	7%	8%	0.8
Muni 1-10y bonds	B12MTR Index	1-10 Yr Blend (1-12)	5%	1%	4%	0.3	2%	3%	0.7
EM hard ccy bonds	EMUSTRUU Index	EM USD Aggregate	11%	1%	11%	0.1	4%	9%	0.5
EM local ccy bonds	EML1TRUU Index	10% Country Capped	17%	1%	12%	0.1	4%	10%	0.4

From a returns point of view, cat bonds looks similar to other fixed income instruments, though they have underperformed equities markets and local currency EM bonds.

However, what is perhaps most interesting are their risk-adjusted returns, as shown by the Sharpe Ratio between average returns and standard deviation of returns. In this sample, cat bonds have offered the most attractive risk-adjusted return, higher even than those provided by the US equity market.

It is worth noting that this assessment does not consider liquidity differences between these asset classes, and it would be expected that more established products, such as US equities or investment-grade bonds, would offer higher liquidity. This could be a factor explaining the different returns.

Still, this strong performance raises two interesting questions.

First, it reinforces the idea that current market pricing for cat bond protection is higher than the actual losses being realised.

Second, these ‘excess returns’ are likely to draw in more investor demand, helping the market grow. As more demand for protection can be transferred to the capital markets, insurers should, in theory, be able to diversify risk more effectively, supporting greater insurability.[18]

[17] “Climate coverage shrinks amid Trump’s clean energy misinfo”, dw.com, 29 Dec 2025.
[18] We note for example the first ETF linked to CAT bonds was launched in 2025 as described in "Brookmont cat bond ETF trades over 150k shares totalling $3.03m, in first day", Artemis.bm, 2 Apr 2025.

Investors

We have also investigated the holders of cat bonds, to analyse what role they may have in adjusting the structure of such securities. Finding comprehensive ownership details on fixed income securities is challenging, so we have narrowed our analysis to a small selection of cat bonds, namely those issued between Q1 2024 and Q3 2025 and sized over USD300mn. This gives a list of 19 bonds. For full details of these securities, please see Table 3 in the Appendix.

We have collated holdings information from Bloomberg, which provides details on USD3bn worth of issuances, compared to total issuance over this period of USD8.5bn (i.e. around 35%, across 67 funds).[19] The details, including total holdings across these 19 securities, for the largest 20 funds, are included in Table 3 in the Appendix.

When looking at this population, two observations stand out. Firstly, the majority of bonds are held in cat bond / insurance-linked securities specific funds, offering a 'pure-play' investment in this product. Secondly, and perhaps more surprisingly, a significant number of funds self-identify with an ESG attribute. Seventeen of the 67 funds identify in this way: 15 as ESG, one as Climate Change, and one as Socially Responsible. As a share of holdings, they constitute 50%.

Sustainable funds

It is noteworthy the number of cat bonds that are held in sustainable funds. On a fundamental basis, a cat bond is 'long climate risk', i.e. it performs better in the event that realised climate catastrophes are low. This would appear aligned with a traditional sustainability investment mandate, which looks to improve mitigation and adaptation outcomes.

Given rising concerns about how the insurance market is failing in light of worsening climate risks, and specifically how important insurability is to a just transition,[20] sustainability-focused investors in cat bonds may have an opportunity to increase their impact. By signalling demand for specific risks, they can help spur new issuance and expand what's considered insurable. If adaptation and resilience measures reduce exposure to climate events, those investments could also be rewarded through better pricing or greater investor interest.

Conclusions

Catastrophe ('cat') bonds, which offer the ability to transfer exposure to designated perils, have received increased attention amidst recent extreme weather events. While volumes have risen in recent years, they are still small in the context of insurance losses.

The perils covered by these instruments are many, though there was an uptick in coverage for California wildfires after the LA events in 2025. This suggests the market can respond to specific climate events.

Average issued bond coupons have risen in the last five years, and returns have been attractive. This implies that offered coupons have exceeded realised losses thus far. It may be the case that the market is anticipating higher losses to come, or that insurance companies are increasingly

[19] There is a lower level of holding transparency in the fixed income market, and 35% compares quite favourably with earlier analysis for example "Fossil bond holdings in sustainable funds", AFII, 19 May 2025.
[20] "The Role of Insurance in a Just Transition", Gallagher Re, Dec 2024.

unwilling to retain exposure to these perils. This dynamic should also serve to attract more investors to the product class and support growth.

Our analysis suggests that a substantial proportion of bonds are held in ESG-labelled funds, which may be held by sustainable investors. While we see limited evidence that the market is currently supporting insurability for those carriers most exposed, this may present an opportunity for engagement. Investors can highlight the role of insurance in a just transition while also signalling demand for products tied to climate-related perils — helping expand insurability in critical areas. At the same time, they can help drive investment in adaptation and resilience efforts that reduce exposure to climate risks.

Appendix

Table 3. 19 cat bonds issued between Q1 2024-Q3 2025 and of size greater than US300mn. Source: Bloomberg Finance L. P., accessed 7 Jan 2026.

Ticker	Issuer	ISIN	Issue Date	Currency	Amount Issued
SANDRE	SANDERS RE III LTD	US799927AA62	23-Jan-24	USD	400
FLOREL	FLOODSMART RE LTD	US33975CAP05	07-Mar-24	USD	475
CAPLKT	CAPE LOOKOUT RE LTD	US13947LAF94	25-Mar-24	USD	450
ALALTD	ALAMO RE LTD	US011395AN03	11-Apr-24	USD	500
ALALTD	ALAMO RE LTD	US011395AQ34	11-Apr-24	USD	400
ALALTD	ALAMO RE LTD	US011395AP50	11-Apr-24	USD	500
MERNAR	MERNA REINSURANCE II LTD	US59013MAM47	16-May-24	USD	450
EVERGL	EVERGLADES RE II LTD	US30014LAM63	22-May-24	USD	450
EVERGL	EVERGLADES RE II LTD	US30014LAN47	22-May-24	USD	425
SANDRE	SANDERS RE II LTD	US80001RAB78	19-Dec-24	USD	350
SECTOR	SECTOR RE V LTD	US81369AES78	31-Dec-24	USD	303
URSARE	URSA RE LTD	US90323WAR16	13-Feb-25	USD	400
CAPLKT	CAPE LOOKOUT RE LTD	US13947LAG77	06-Mar-25	USD	600
EVERGL	EVERGLADES RE II LTD	US30014LAT17	13-May-25	USD	450
EVERGL	EVERGLADES RE II LTD	US30014LAV62	13-May-25	USD	375
EVERGL	EVERGLADES RE II LTD	US30014LAU89	13-May-25	USD	475
MERCOW	MERNA RE COMPANYWIDE	US59013FAA57	21-May-25	USD	500
MERETP	MERNA RE ENTERPRISE	US59013HAA14	21-May-25	USD	550
URSARE	URSA RE II LTD	US91734PAH91	11-Jun-25	USD	400

Table 4. Largest 20 funds holding the 19 cat bonds as identified, including Bloomberg General Attribute. Source: Bloomberg Finance L. P., accessed 7 Jan 2026.

Ticker	Name	General Attribute	Total holdings (USDmn)
TWTCBSD ID Equity	TWELVE CAT BND FD-SI1DISTEUR	ESG	690
SHRIX US Equity	STONE RIDGE H/Y REIN RSK-I	N.A.	667
SGCBIFH LX Equity	SCHRODER GAIA CAT BD-IF HD	ESG	352
GAMCBUA ID Equity	GAM STAR-CAT BOND FND-ACCUSD	ESG	267
PONAX US Equity	PIMCO INCOME FUND-A	N.A.	244
PIMINIA ID Equity	PIMCO GIS-INCOME FUND-INS AC	N.A.	126
ACBAX US Equity	VICTORY PIONEER CAT BOND-A	N.A.	110
SRRIX US Equity	STONE RIDGE REIN RSK PR INT	N.A.	52
XILSX US Equity	PIONEER ILS INTERVAL FUND	N.A.	52
PCABSEA LE Equity	PLENUM CAT BOND DYNAMIC-SEUA	ESG	48
EMPIX US Equity	AMBASSADOR FUND	N.A.	36
SIFCILI LX Equity	SIF-CORE INSURED LINKED-I	ESG	26
PLEICSC LE Equity	PLENUM INSURANCE CAPITAL-S C	ESG	26
PMMNINCA CN Equity	PIMCO MNTHLY INC (CN)-A FE	N.A.	23
PDI US Equity	PIMCO DYNAMIC INCOME FUND	N.A.	21
PIGIX US Equity	PIMCO INV GRD CRD BND-INST	N.A.	20
TWCMLTP ID Equity	TW CP TW MLT STR F-P+ AC CHF	ESG	19
PIOBX US Equity	VICTORY PIONEER BOND FUND-A	N.A.	18
PFIAX US Equity	PIMCO LOW DURATION INC-A	N.A.	17
PLECBFU LE Equity	PLENUM CAT BOND DEFESIVE-USD	ESG	13

Version Log

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