Price Softening, Structural Discipline: The Reinsurance Underwriting Cycle after Alternative Capital

Ilker Aslan, PhD*

Lecturer, Kalaidos University of Applied Sciences, Zürich

November 2026

Abstract

Global property-catastrophe reinsurance prices fell at the January 2026 renewal at the fastest rate in a generation, while the structural reforms of the 2023 hard market remained substantially in place. This paper asks whether record alternative capital has dampened the reinsurance underwriting cycle, and finds that the answer depends on which margin of the renewal bargain is measured. A price margin clears against the supply of risk capital. A structure margin, comprising attachment points, aggregation basis, wordings and reinstatement terms, defines what the price is charged for. The two are separated here within a formal decomposition of the rate on line, and the structure margin is shown to sit at a corner where an ambiguity-averse reinsurer declines a quantity rather than repricing it. The record is assembled from four documentary sources coded under a common protocol: broker and rating-agency renewal reports; the catastrophe reinsurance programmes disclosed in the filings of twelve United States stock insurers; the published towers of three public programmes and one nationwide insurer; and the catastrophe bond market. The record divides instructively. Treaty property-catastrophe reinsurance decoupled, with price round-tripping while attachment points held. Casualty softened on neither margin. The catastrophe bond market softened on both: its attachment proxy retraced the whole of its 2023 tightening, though its aggregation basis did not. The two failures to decouple are opposite in kind, and between them they identify the underwriting mandate, rather than the quantity or the shape of the capital, as what holds structure. Normalising disclosed retentions by insured value shows the attachment holding or rising in real terms through the softening, which answers the objection that nominal constancy conceals erosion. Structural discipline, where it survives, is an institutional achievement rather than a market equilibrium.

JEL classification: G22, G23, E44

Keywords: reinsurance underwriting cycle; alternative capital; catastrophe reinsurance; contract structure; underwriting governance

1. Introduction

At the January 2026 renewal, global property-catastrophe reinsurance prices fell 12 per cent on Guy Carpenter's rate-on-line index. By the July renewals the index stood 16 per cent below its level a year earlier, the largest annual decline since the late 1990s and steeper than

*ORCID 0000-0001-9241-9420. Correspondence: ilker.aslan@alumni.unifr.ch.

any single year of the 2010s soft market (Guy Carpenter 2026a, 2026b). Total reinsurance capital stood at a record USD 785 billion at the end of 2025 and USD 790 billion by the end of the first quarter of 2026. Of that, alternative capital contributed a record USD 136 billion, rising to USD 141 billion (Aon 2026b, 2026c). By every price-based reading, the hard market that began in 2023 was over in three years, and abundant capital had ended it.

The renewal record shows something the price series does not. The contractual architecture imposed in 2023, with attachment points raised to confine recoveries to capital events, aggregate covers withdrawn and wordings narrowed, remained substantially in place through the same renewals at which prices collapsed. Reinsurers, in the index publisher's own words, "continue to benefit from high attachment points, reflected in their lower share of catastrophe losses" (Guy Carpenter 2026a). Pricing, in the assessment of a second intermediary, returned "to levels last seen around four years ago, albeit with comparatively higher attachments and tighter terms" (Howden Re 2026). The market softened on one margin and not on the other.

This paper asks whether the arrival of alternative capital at record scale has dampened the reinsurance underwriting cycle. The answer turns out to depend on which margin of the renewal bargain is measured, and the empirical cycle literature has no continuous measure of the second one. Its workhorse series, premium indices, rate-on-line indices and loss ratios, record the price of cover rather than the terms on which it is written, and no public series of attachment points or treaty terms exists against which the second movement could be tracked.

Underwriting-cycle research has modelled the cycle as a movement in prices, profits and capital. In the expectations tradition the cycle is generated by ratemaking and institutional lags (Venezian 1985; Cummins and Outreville 1987). In the capacity-constraint tradition it is generated by the slow adjustment of equity capital to loss shocks (Winter 1994; Gron 1994; Froot 2001). Both traditions, and the econometric work built on them, take the object being priced as given and study the price. From the capacity-constraint view a natural conjecture has followed: if the cycle reflects the slow adjustment of traditional capital, then a deep pool of capital-market capacity able to enter quickly should dampen it (Cummins and Weiss 2009). The 2023 to 2026 episode is the first in which that conjecture confronts a hard-market turn with alternative capital at record size rather than in post-loss retreat. Its verdict is split in a way the conjecture cannot itself express.

The argument distinguishes two margins on which every reinsurance treaty is negotiated. The price margin is the rate on line charged for a defined transfer. The structure margin defines the transfer: attachment, aggregation basis, breadth of perils and exclusions, reinstatement terms. These are the parameters that allocate the frequency component of catastrophe experience between cedent and reinsurer. The two margins clear against different constraints. Price clears against the supply of capital willing to bear a defined risk, and alternative capital has made that supply larger and faster-moving than at any prior cycle turn. Structure is

a quantity decision, not a price decision. Where model disagreement about the frequency region is wide enough, the reinsurer declines to write the layer at any price the cedent will pay, and the attachment sits at a corner that the cost of capital does not move. Prices can therefore revert in a season. Attachments revert only when the corner moves, or when the institution that implements it revises its mandate.

The paper makes four contributions. First, it introduces the price and structure decomposition and derives the decoupling instead of assuming it. An ambiguity-averse reinsurer facing a cedent with a declining willingness to pay sets an attachment at a corner where the ambiguity premium exceeds anything the capital term can offset. Capital abundance then lowers the price of every layer that trades and leaves that corner where it is. The asymmetry in how fast the observed attachment returns to the corner is a property of the institution that implements it, not of the risk, and that distinction generates the paper's central cross-sectional test.

Second, it assembles and codes the documentary record against which the predictions can be read. Because no public database captures reinsurance contract structure, the paper builds one from four independent classes of evidence. The first is the renewal reports and press statements of the major intermediaries and rating agencies, coded season by season across seven structural elements under an explicit protocol. The second is the catastrophe reinsurance programmes disclosed in the Form 10-K and Form 8-K filings of twelve United States stock insurers, covering fiscal 2019 through fiscal 2025. The third is the publicly disclosed towers of Allstate, Florida's Citizens Property Insurance Corporation, the California Earthquake Authority and the Texas Windstorm Insurance Association. The fourth is the catastrophe bond market, whose transaction-level disclosure permits price and structure to be measured separately within a single market.

Third, it measures the attachment in real terms rather than conceding that it cannot be measured. Retentions disclosed in dollars are normalised by the insured values that the Florida Office of Insurance Regulation collects per company, which are exogenous to the reinsurance programme. Through the softening renewals the retention held or rose against its own exposure base for every company where the measurement is possible. Two other candidate normalisers are tested and rejected on stated grounds, and the reasons they fail are themselves findings about what public data can support.

Fourth, it draws the implications. For measurement, the standard rate indices conflate the two margins, and the index's own publisher attributed the 27.5 per cent movement of January 2023 to "pricing and attachment point adjustments" jointly (Guy Carpenter 2023a). For theory, the dampening conjecture holds wherever capital can bid and fails wherever an underwriting mandate holds the quantity. For policy, risk pushed below attachments migrates to primary insurers, households and public balance sheets, which makes the structure margin a protection-gap variable.

Throughout, the method remains documentary, and its limitations are stated where the evidence is presented. The reading of the record does not rest on renewal commentary alone. Every structural classification in Section 4 is supported by verbatim quotation (Appendix B), every insurer-level programme term by a citation to the disclosing filing (Table 3 and the accompanying evidence workbook), and every quantitative market observation by its source and observation date (Appendix A). The reading is informed by a decade of treaty reinsurance underwriting practice, but every claim about market terms rests on the published sources cited, and no non-public information is used. The paper extends existing cycle theory rather than replacing it. Weiss (2007), writing in this journal, identified the supply of capital as the most promising line of continuing work, and the framework here stays close to that tradition so that its additions can be estimated once the data allow.

The paper proceeds as follows. Section 2 locates the argument in the cycle, convergence and contract-design literatures. Section 3 defines the two margins, derives the corner at which structure is set, and shows how rate-on-line observations decompose into price, exposure and structure. Section 4 states the data and coding protocol and documents the record from 2017 to 2026. Section 5 develops the mechanisms that make the decoupling durable. Section 6 draws implications and states the falsifiable expectations the framework implies. Section 7 concludes.

2. What the Cycle Literature Measures

From Venezian (1985) onward the underwriting cycle has been a price phenomenon in the literature, and it has largely remained one. Venezian (1985) attributed oscillation in property-liability margins to extrapolative ratemaking. Cummins and Outreville (1987) showed that institutional features — among them reporting lags, accounting conventions and regulatory delay — can generate a second-order autoregressive profit cycle in international data even under rational expectations. A parallel strand tied the cycle to capital. In the capacity-constraint models of Winter (1994) and Gron (1994), industry supply contracts when equity is depleted by losses and recovers as capital is rebuilt or re-enters. Because external capital is costly and slow to raise, prices overshoot after large loss events and decay as balance sheets recover. Doherty and Garven (1995) linked the amplitude of the price response to insurers' financial structure, and Harrington and Danzon (1994) examined whether soft-market price cutting reflects moral hazard or heterogeneous information.

Tested on premium and loss-ratio series, these mechanisms produced results that grew progressively more sceptical. Niehaus and Terry (1993) found the joint time-series behaviour of premiums and losses difficult to reconcile with simple capacity or expectations stories. Choi, Hardigree and Thistle (2002) reached different conclusions about the cycle's driver depending on the specification. Boyer, Jacquier and Van Norden (2012) argued that much of the apparent cyclicality in underwriting data is not forecastable structure at all. Weiss (2007), synthesising the field in this journal, concluded that the evidence favoured no single

theory and identified the supply of capital as the most promising line of continuing work. Harrington, Niehaus and Yu (2013) reach a similar verdict.

Reinsurance occupies a special position in this literature. The reinsurance cycle is where the capacity mechanism should operate most visibly, because reinsurance is the industry's marginal source of underwriting capital and its prices respond first to balance-sheet shocks (Berger, Cummins and Tennyson 1992; Meier and Outreville 2006). Froot and O'Connell (1999) and Froot (2001) documented exactly this in United States catastrophe reinsurance. Prices rise to multiples of actuarially fair levels after major events, and the premium earned for bearing catastrophe risk far exceeds what frictionless capital-market pricing would imply. Froot's (2001) diagnosis, that the binding constraint is the supply of dedicated risk capital rather than the price of risk itself, provided the intellectual case for connecting catastrophe risk directly to the capital markets. Jaffee and Russell (1997) had made the complementary argument from the liability side: catastrophe risk strains the institutional form of insurance because it requires holding large amounts of liquid capital against rare events, which securitisation can in principle supply more cheaply.

Where the convergence literature went next was to how insurance-linked securities are priced and when they substitute for reinsurance. Cummins and Trainar (2009), Cummins and Weiss (2009) and Gibson, Habib and Ziegler (2014) addressed the choice between reinsurance and securitisation; Lane and Mahul (2008), Braun (2016) and Gürtler, Hibbeln and Winkelvos (2016) addressed the pricing of the instruments themselves. What that literature has not yet asked with the same care is what the arrival of this capital does to the cycle. The conjecture most often stated is a dampening one: if the cycle is driven by the slow adjustment of traditional equity capital, then a deep pool of capital-market money that can enter quickly after events should compress both the amplitude and the duration of hard markets (Cummins and Weiss 2009). The present episode offers the first opportunity to observe that conjecture operating at scale, because it is the first hard market to turn while alternative capital stood at record levels rather than in retreat.

A third literature, on contract design and decision-making under model uncertainty, supplies the mechanism this paper places on the second margin. Its experimental branch established that underwriters and actuaries price ambiguous risks far above their expected losses or refuse them outright. Hogarth and Kunreuther (1989) documented the premium demanded for ambiguity, and Kunreuther, Hogarth and Meszaros (1993) connected insurer ambiguity directly to market failure, with coverage rationed or withdrawn instead of repriced. Its theoretical branch derives the same response from robust decision rules: Dietz and Walker (2019) show that ambiguity-averse insurers respond to model uncertainty through capital requirements and coverage decisions, not price alone. Its empirical branch shows both mechanisms operating after real shocks. Cummins and Lewis (2003) study the terrorism insurance market after 11 September 2001 and find that the breakdown of coverage reflected parameter uncertainty operating as a mechanism distinct from capital depletion. Capacity for a risk

whose models had failed did not return with the industry's capital. That is the separation of state variables this paper's framework formalises. Born and Viscusi (2006), in a large panel of homeowners' insurers after natural disasters, find that the market response to catastrophic shocks runs through more than one margin: premium adjustment is accompanied by reductions in coverage written and exit from affected states. On the reinsurance contract itself, Jean-Baptiste and Santomero (2000) model treaty design under asymmetric information and show why long-term implicit contracts and their terms carry informational content that spot prices do not. Doherty and Smetters (2005) document how co-participations, reinstatement pricing and loss-sensitive terms are instruments for controlling moral hazard rather than incidental furniture.

These literatures are consistent with the proposition that when a shock discredits the models through which a class of risk is priced, the equilibrium response is a change in what is covered and on what terms, and that this response can persist independently of the capital position. None of them establishes that model confidence governs attachment points specifically, and the present paper does not claim otherwise. What it adds is a decomposition that makes the second response measurable, and a cross-market comparison that identifies what holds it in place.

Two analogues outside insurance bear directly on the mechanism. Stiglitz and Weiss (1981) showed that where the price of a contract affects the quality of the risk it attracts, lenders ration quantity instead of clearing the market on price, so that equilibrium involves unserved borrowers rather than a higher rate. Raising an attachment point is an adjustment of the same kind: the reinsurer does not reprice the frequency layer, it declines to write it, and the cedent retains the exposure at any price currently on offer. Murfin (2012) is closer still. He finds that banks write stricter loan covenants after defaults in their own portfolios, that the effect survives controls for bank capital, and that it is best read as lenders revising their assessment of their own screening ability. The logic is the same as the one proposed here for the structure margin. The evidence is not. Murfin identifies the belief channel in a lender-level panel with within-bank variation, whereas no comparable panel of reinsurance terms exists. Murfin's evidence is within a lender-like panel; what is available here is a comparison across markets. The claims that follow are qualified accordingly.

This paper's claim is that the episode confirms the dampening conjecture on one margin of the underwriting bargain and refutes it on another, and that the distinction between the two deserves a place in the cycle literature that it does not currently occupy. The distinction is not merely descriptive. Every reinsurance treaty fixes, alongside its price, a set of structural parameters: the attachment point at which cover begins, the basis on which losses aggregate toward that attachment, the breadth of the covered perils, the exclusions and the reinstatement provisions. These parameters determine which risks the price is charged for. A market can therefore tighten by raising the price of a given contract or by redefining the contract, and it can subsequently loosen on one of these margins while holding the other.

A cycle theory written in prices alone cannot see the difference. The index that most cycle work would consult for the current episode illustrates the problem. Guy Carpenter's global property-catastrophe rate-on-line index rose 27.5 per cent at the January 2023 renewal, an increase the index's publisher attributed as "primarily driven by pricing and attachment point adjustments in the US and Europe" (Guy Carpenter 2023a). The measured price contains the structure.

3. Two Margins: An Analytical Framework

3.1. Definitions

Let the terms of a representative catastrophe excess-of-loss programme be summarised by two variables. The *price margin*, denoted p_t, is the logarithm of the rate on line, premium per unit of limit, adjusted where the data permit for the risk assumed. The *structure margin*, denoted s_t, is a stringency index summarising the contractual parameters that define the risk transferred. It comprises the attachment point expressed relative to the cedent's modelled expected annual loss or a fixed return-period loss, the mix of per-occurrence and aggregate bases in the programme, the breadth of covered perils and the reach of exclusions, the event definition including the hours clause that bounds it in time, and the terms on which limits reinstate. A rise in s_t means cover begins further from the working layer, aggregates less generously, covers fewer contingencies, defines events more narrowly and reinstates on harder terms. The two margins jointly determine the economics of the treaty, and either can adjust at renewal.

The distinction matters because the two margins price different things. The price margin compensates capital for bearing a defined risk. The structure margin defines the risk, and in particular allocates the *frequency* component of catastrophe experience between cedent and reinsurer. A market that raises attachment points is not charging more for the same transfer. It is declining a category of transfer, in the way that Hogarth and Kunreuther (1989) found underwriters decline or load heavily the risks whose probabilities they regard as ambiguous, and that Kunreuther, Hogarth and Meszaros (1993) showed can ration coverage altogether.

3.2. Why structure is a quantity decision

Consider a reinsurer deciding whether to cover a layer of width L attaching at point a on a cedent's catastrophe loss. Under the reference catastrophe model the layer's expected loss is $EL(a)$, decreasing in a. The reinsurer does not treat that model as reliable in every region of the loss distribution. It holds a set of candidate models and evaluates the layer at the least favourable of them, giving an ambiguity-adjusted expected loss $EL^a(a)$ and an ambiguity premium $\varphi(a) = EL^a(a) - EL(a) \geq 0$.

One assumption carries the argument: φ is decreasing in a. It is an assumption. A rationale supports it; no test does. Disagreement between vendor models, and between successive

vintages of the same model, is concentrated in the frequency region of the loss distribution, not in the remote tail. The secondary-peril experience of 2017 to 2022, documented in Section 4.2, is what widened it there. What would test the assumption directly is the dispersion of modelled expected loss across vendor models and model vintages, layer by layer; those comparisons are proprietary, and the assumption should be read as a restriction the framework imposes and not as a finding.

A layer is written only at a premium covering the ambiguity-adjusted expected loss and the cost of the capital it requires. Let c be the cost of capital and $k(a)$ the capital charge per unit of limit. The cedent's willingness to pay, $W(a)$, is also decreasing in a, since cover attaching closer to the working layer is worth more. The layer trades if and only if

$$W(a) \geq EL^{a}(a) + c\,k(a)\,L. \qquad (1)$$

Write $\bar{a}$ for the lowest attachment at which (1) holds. Neither of the two results below is assumed.

Suppose that for every attachment below $\bar{a}$,

$$EL^{a}(a) - W(a) > \bar{c}\,k(a)\,L, \qquad (2)$$

where $\bar{c}$ is the highest plausible cost of capital. Then $\partial\bar{a}/\partial c = 0$ over that range. No inflow of capital, however large, brings those layers into trade, because the constraint that excludes them is not the price of capital. The attachment sits at a corner determined by ambiguity and demand. Condition (2) should be read for what it is: it negates (1) across the range below $\bar{a}$ at the most favourable cost of capital, so it restricts where the corner can lie and does not add a separate testable restriction. The content is in what it rules out, which is any path from capital abundance to a lower attachment while the ambiguity gap at the margin stays wide.

For layers above $\bar{a}$ the trade is interior, the premium is set by the supply condition in (1) with equality, and it falls as c falls. Capital abundance lowers the price of every layer that trades while leaving $\bar{a}$ where it is.

The decoupling of the two margins is therefore a result, not an assumption. The earlier literature's intuition, that capacity abundance does not restore the willingness to write frequency exposure whose models have failed, now carries an explicit scope condition: it holds while the ambiguity gap at the margin exceeds the capital term, as in (2), and not otherwise. Cummins and Lewis (2003) document the same separation in the terrorism insurance market, where coverage stayed withdrawn even as the industry recapitalised.

Raising an attachment point is not a repricing. It is a refusal to transact a quantity at any price the counterparty will pay, the form of rationing Stiglitz and Weiss (1981) identified in credit markets. It is also why a market can tighten without the tightening appearing in a price index.

3.3. Why the corner moves slowly in one market and not in another

The corner $\bar{a}$ is a property of preferences and beliefs. The attachment a reinsurer actually writes is a property of the committee that signs it off, and the two need not coincide.

Where each transaction is priced on its own against the capital standing behind it, the observed attachment tracks the corner period by period. Where the attachment is instead implemented as a portfolio-level underwriting mandate, it does not. Mandates of that kind were imposed across the traditional market after the loss reviews of 2022 and 2023: attachment floors, aggregate prohibitions and wording requirements, set centrally and alterable only by the body that set them. Observed structure then adjusts to the corner partially and asymmetrically,

$$s_t - s_{t-1} = \lambda_s^{+} \left[s_t^{*} - s_{t-1} \right]^{+} - \lambda_s^{-} \left[s_t^{*} - s_{t-1} \right]^{-} + \eta_t, \qquad \lambda_s^{+} \gg \lambda_s^{-}, \qquad (3)$$

where s_t^{*} is the stringency implied by $\bar{a}$ and $[x]^{+}$ and $[x]^{-}$ denote positive and negative parts. Tightening can be instructed once and takes effect at the next renewal, so λ_s^{+} is near unity. Loosening requires the same body to revise a mandate whose rationale it has published and on which it has reported to its board and to rating agencies, so λ_s^{-} is small. The asymmetry is institutional, not preferential, and in that respect (3) differs from a conventional partial-adjustment specification.

The price margin retains the capacity-constraint form. Let

$$k_t = \ln\left(\frac{K_t^{T} + \theta A_t}{K_t^{*}} \right), \quad 0 < \theta \leq 1, \qquad (4)$$

where K_t^{T} is traditional reinsurance equity, A_t is alternative capital and K_t^{*} is the capital required to support target volumes at prevailing structures. With a target price $p_t^{*} = \alpha - \beta k_t$, $\beta > 0$, observed price adjusts at speed λ_p,

$$p_t - p_{t-1} = \lambda_p \left(p_t^{*} - p_{t-1} \right) + \varepsilon_t, \qquad (5)$$

and λ_p is increasing in the alternative share $A_t/(K_t^{T} + A_t)$, because capital-market money enters and re-prices faster than traditional equity can be raised or returned (Froot 2001;

Cummins and Weiss 2009). Equations (4) and (5) are the Winter and Gron mechanism in reduced form, and nothing in the framework requires abandoning them. The addition is (1) to (3): a second margin, set at a corner, with an adjustment speed governed by an institution.

3.4. Predictions

(P1) A shock that both widens model disagreement and depletes capital moves price and structure together.

(P2) When capital returns, the price margin reverts while the structure margin holds, in markets where the attachment is administered through a portfolio mandate.

(P3) The cross-section separates the two mechanisms, because they need not travel together. Decoupling requires both capital willing to bid the price down and an institution willing to hold the structure up. It should appear in traditional property-catastrophe treaty reinsurance, where alternative capital bids at the top of the tower while underwriting mandates hold the attachment. It should be absent in casualty, where alternative capital is marginal and disputed models keep both margins tight. It should be absent again, for the opposite reason, in the catastrophe bond market, where capital-market money prices transaction by transaction under no comparable mandate, leaving structure free to follow price down. The second and third cases fail to decouple for opposite reasons, and it is that opposition which identifies which mechanism does the work.

(P4) Within the mandated market, release runs from the periphery inward: aggregates, reinstatements, hours clauses and named perils before the attachment itself.

Three findings would refute the account: attachments measured in return periods or against exposure returning to their pre-reset levels while model disagreement remains wide; if structural concessions track cedent capital or bargaining strength rather than the administration of the mandate; or if a market without portfolio mandates holds structure as firmly as the treaty market does. Section 4 tests all four predictions and reports the real-terms measurement in Section 4.6. The tests are comparative, not causal. The cross-market and cross-segment contrasts bound which explanations remain available; they do not identify the mechanism in the sense an instrument or an experiment would, and no claim of causal identification is made anywhere in what follows.

3.5. Separating price from exposure and structure in rate-on-line observations

Because the evidence of Section 4 leans on rate-on-line observations, it must be stated precisely what such observations measure. The rate on line of a layer is premium divided by limit. Its logarithm decomposes identically into a risk-adjusted price component and a risk-quantity component:

$$\ln RoL_t = \ln\left(\frac{\Pi_t}{E_t[L]}\right) + \ln\left(\frac{E_t[L]}{Limit_t}\right), \qquad (6)$$

where Π_t is premium and $E_t[L]$ the modelled expected loss to the layer. The first term is the risk-adjusted price, the multiple of expected loss in market usage. The second is expected loss per unit of limit, and it is where exposure and structure live. It rises when the cedent's underlying exposure grows or the modelled hazard is revised upward at a fixed attachment, and it falls when the attachment is raised or the layer is otherwise made more remote. A change in a rate-on-line index therefore conflates three movements: the price of risk, the quantity of underlying risk and the structure of the contract. The index most widely used in empirical work is explicitly of this composite kind. Guy Carpenter describes its global property-catastrophe rate-on-line index as reflecting "the pricing impact of a growing (or shrinking) exposure base, evolving methods of measuring risk and changes in buying habits, as well as changes in market conditions," and notes that "unlike risk-adjusted measurements, the index is not dependent on the model or method used to measure the amount of perceived risk in a program" (Guy Carpenter 2023a).

The consequences for measurement are specific. When attachment points rise sharply the nominal index *understates* the movement in the risk-adjusted price, because the second term in (6) moves against the first. At January 2023 the nominal global index rose 27.5 per cent while Howden's risk-adjusted global property-catastrophe index rose 37 per cent (Howden 2023), and Guy Carpenter observed that "the average change in ROL was tempered by broad-based increases in retentions as programs moved further away from loss frequency" (Guy Carpenter 2023b). The gap between the two measures is an estimate of the second term, roughly ten points of measured rate at the reset renewal.

The same logic runs in reverse in the softening phase, and here the paper takes more care than its first draft did. The January 2025 nominal decline of 6.6 per cent sits below Howden's risk-adjusted decline of 8 per cent (Howden 2025, 24), and the January 2026 nominal decline of 12 per cent below Howden Re's risk-adjusted 14.7 per cent (Guy Carpenter 2026a; Howden Re 2026). A positive gap of this kind is consistent with attachments held in dollars against a growing exposure base. It is equally consistent with attachments falling against an exposure base growing more slowly, and the index difference alone cannot separate the two. Chained from a January 2022 base, the second term of (6) falls 6.9 per cent at the 2023 reset and stands at 99.7 by January 2026, having given back the whole of that movement. Section 4.4 sets out the chain and Figure 2 there plots both series. Whether the recovery reflects structural erosion or exposure growth at a held attachment is the question Section 4.6 answers directly, with an exposure measure that is not derived from prices at all.

Where a market discloses both the price and the modelled risk of individual transactions, the two terms of (6) can be observed separately instead of being inferred from index differences.

The catastrophe bond market is such a market. The spread paid over expected loss is a direct observation of the risk-adjusted price term, and the expected loss of new issuance is a direct observation of the risk-quantity term, with lower expected loss meaning a more remote attachment. Section 4.5 uses that decomposition and finds that in this market the two terms do *not* behave as they do in treaty reinsurance.

The paper accordingly treats nominal rate-on-line series as composite evidence, prefers risk-adjusted measures where the intermediaries publish them, reads structural evidence wherever possible from physical contract parameters disclosed in filings and programme documents and not from prices, and uses the catastrophe bond market's transaction-level disclosure to observe the two margins separately within one market.

4. The Record, 2017–2026

4.1. Sources, unit of observation, and coding protocol

No public database captures reinsurance contract structure, so the structure margin must be assembled from documents. Four classes of evidence are used, chosen so that each supplies a different unit of observation and none depends on the others. Table 1 summarises them. The full observation register, with a source, observation date and URL for every quantitative claim in this section, is given in Appendix A, in Appendix B for structural classifications, and in the evidence workbook that accompanies the paper.

Table 1. Documentary sources and units of observation

Evidence class	Principal sources	Unit of observation	What it observes
Broker and rating-agency renewal record	Guy Carpenter renewal press statements and rate-on-line index publications; Aon *Reinsurance Market Dynamics* (January, April, mid-year editions); Howden and Howden Re annual renewal reports; Gallagher Re *1st View*; AM Best, Fitch and Moody's commentaries	Renewal season by structural element, global market	Directional change in attachment points, aggregate availability, wordings, reinstatements; nominal and risk-adjusted rate movements

Evidence class	Principal sources	Unit of observation	What it observes
United States stock insurer filings	Form 10-K reinsurance disclosures and reinsurance-programme Form 8-K exhibits, SEC EDGAR, twelve insurers, FY2019 to FY2025	Insurer by treaty year	Disclosed attachment and retention dollars, programme tops, co-participations, aggregate features, quota-share cessions, reinstatement provisions
Public and quasi-public programmes	Florida Citizens board documents; Allstate investor disclosures; California Earthquake Authority releases; Texas Windstorm Insurance Association board materials, partly via trade-press reporting	Programme by year	Tower attachment and exhaustion, limit purchased, cost, rate on line, design standard
Catastrophe bond market	Artemis quarterly market reports and deal directory; Swiss Re Capital Markets; Gallagher Securities; Lane Financial; Aon Securities annual ILS reports	Issuance year and quarter; transaction	Spread and multiple (price); expected loss, trigger type, occurrence or aggregate basis (structure); volumes
Insurer exposure (Section 4.6)	Florida Office of Insurance Regulation QUASR returns, as reproduced in Citizens' quarterly Florida Residential Property Market Share reports	Insurer by calendar quarter	Policies in force, total insured value, premiums written

Unit of observation and dates. For the broker record the unit is the renewal season (1 January, 1 April, mid-year) crossed with seven structural elements: (E1) attachment points and retentions; (E2) aggregate covers; (E3) exclusions and wording breadth, including named-peril restrictions; (E4) hours clauses; (E5) occurrence and event definitions, including concurrency of terms across a programme; (E6) reinstatement provisions; and (E7) proportional and retrocession terms. For the filings panel the unit is the insurer-treaty-year. Florida and coastal specialists renew at 1 June, Kingstone and Mercury at 1 July, Travelers' corporate treaty at 1 January, and Allstate's nationwide programme presents at 1 April and 1 June. Every observation carries its publication or filing date. Web sources were accessed on 13 September 2026 unless another access date is recorded against the entry.

Sampling frame and search procedure. The broker and rating-agency record was assembled by retrieving every renewal publication issued by the five named intermediaries and three rating agencies for each renewal season from January 2018 to mid-2026, working from each publisher's own renewal archive and not from search results, so that the frame is the publisher's complete output for the season. A query would have returned only a subset. Trade-press reporting was used only where it quotes a primary document, and the quotation is recorded with the primary attribution.

Construction of the filings panel began from the NAIC list of the twenty-five largest United States homeowners writers for 2024, from which the mutuals and reciprocals were removed because they file no Form 10-K. Seven groups remained: Allstate, Travelers, Chubb, Progressive, Universal, Cincinnati Financial and Mercury. To these were added five catastrophe-exposed specialists that fall below the top twenty-five but write concentrated coastal risk and file with the SEC: Heritage, HCI Group, American Coastal, Palomar and Kingstone. The resulting frame is twelve groups. EDGAR full-text search was run over each group's Form 10-K and Form 8-K filings for FY2019 to FY2025 using the terms "catastrophe reinsurance", "retention", "attachment point", "reinstatement" and "quota share", and each hit was read in its filing context before coding. Of the twelve, nine disclose programme dollar terms sufficient for the insurer-year cells of Table 3. Chubb and Cincinnati Financial describe their programmes in narrative sections whose figures could not be verified in full from the retrieved filings, and HCI Group discloses no programme dollar terms at all. Those three are excluded from Table 3 and the exclusion is reported, not estimated around. The coverage statistic in Section 4.7 rests on a narrower base again: the 21.0 per cent of United States homeowners direct written premium refers to the seven panel groups that appear in the NAIC top twenty-five, which is the only basis on which NAIC market shares can be summed. Two of those seven, Chubb and Cincinnati Financial, are among the three excluded from Table 3, so the share of the homeowners market for which this paper reports programme terms in dollars is 17.5 rather than 21.0 per cent.

Coding. Each season by element cell is coded tightened (T), held (H), loosened (L), mixed (M) or not found (NF). A code is assigned only where at least two independent sources agree,

or where one primary source states the direction without contradiction elsewhere. Every non-NF cell is supported by verbatim quotation in Appendix B. Cells for which no evidence was located are reported as NF and never interpolated. Hours clauses and occurrence definitions, in particular, are discussed by the sources only at the 2023 reset and again from mid-2026, and the coding records that sparseness rather than smoothing it.

Reconciliation of conflicting sources. Where sources conflict, primary documents take precedence over trade-press summaries. Where primary sources themselves differ, the paper reports the range and attributes it to definitional perimeter where identifiable. The standing conflicts in the sources matter here. Insured-loss totals differ across vendors, with 2025 reported at USD 108 billion by Munich Re, USD 107 billion by Swiss Re and USD 129 billion by Gallagher Re, because perils, loss-adjustment expenses and public-scheme treatment differ; the paper cites Munich Re consistently and notes the range where material. Capital totals differ by definition, with Aon's total reinsurance capital of USD 785 billion at end-2025 against the narrower Guy Carpenter and AM Best measure of dedicated reinsurance capital of roughly USD 607 billion at end-2024; the paper uses Aon's series throughout and never mixes the two. Catastrophe bond issuance bases differ, since Artemis includes private placements and, before 2021, mortgage ILS, while Swiss Re counts Rule 144A natural-catastrophe issuance only; Table 5 footnotes the series break. One conflict could not be resolved, namely the aggregate share of 2024 catastrophe bond issuance, where a chart reading contradicts adjacent years, and that cell is excluded from inference.

Caveats on the coding. On source continuity: Guy Carpenter was renamed Marsh Re with effect from 1 September 2026, so commentary from that date appears under the new name, the series is treated as continuous, and the change is noted at each affected citation. Second, and more consequentially, the broker record codes attachment points in *nominal* terms, because that is how the sources state them. Section 3.1 defines the structure margin in real terms, and the two can diverge. An attachment point held flat in dollars through several years of loss-cost inflation and exposure growth is falling as a return period. The distinction is not the author's. The chief executive of one large reinsurer put it in September 2026 as the observation that "while carrying forward attachment points at a constant level year after year may convey a sense of nominal stability, they actually reflect, in real terms, a loosening of terms and conditions" (AXA XL Re 2026; Appendix B). Table 2 therefore records the nominal direction, which is what the broker record supports. Section 4.6 measures the real-terms movement directly, using an exposure series that is independent of both the reinsurance programme and the price record, and reports what that measurement shows.

What this record cannot show. Treaty wordings are private, so the broker record observes their direction and not their text. The filings panel is bounded by what issuers disclose, and among large homeowners writers only the stock insurers file with the SEC.

4.2. The shock, 2017–2022

The years 2017 to 2022 supplied the double disturbance the framework requires: a sustained erosion of underwriting results and, distinctly, a falsification of the models through which the affected business had been priced. Hurricanes Harvey, Irma and Maria in 2017 opened a six-year sequence in which insured natural-catastrophe losses ran persistently above long-term averages, but the composition of the losses mattered more than their size. An increasing share came from secondary perils, chiefly severe convective storm, wildfire and flood, arriving as accumulations of mid-sized events rather than as single capital events (Munich Re 2025). For the price margin this was a familiar capital story, and prices firmed modestly from 2018 through 2022. Guy Carpenter's January 2023 publication records the sixth consecutive year of increases in its global property-catastrophe rate-on-line index (Guy Carpenter 2023a). For the structure margin it was something else: repeated demonstration that the frequency component of catastrophe experience — precisely the exposure that low attachment points and aggregate covers transfer — was being systematically mis-modelled. In the terms of Section 3.2, the ambiguity premium φ widened in the frequency region while remaining narrow in the remote tail.

By 2017 the structure margin stood at its loosest point in the record. In the soft market of 2014 to 2017, terms broadened alongside falling prices. Analysts warned of "further broadening of terms and conditions (such as the hours clause extension) and more inclusion of other risks such as cyber and terrorism," judging these "more dangerous to reinsurers than rate declines alone" (KBW, December 2014; Appendix B). Hours clauses that had conventionally stood at 168 hours were extended in some cases to 504 (Artemis 2018). Aggregate covers proliferated: by early 2017, for the first time in the market's history, the majority of outstanding catastrophe bond capacity carried aggregate triggers, and roughly 64 per cent of the limit placed in the year to mid-2017 used some aggregate structure (Artemis 2017; Aon Securities 2017). It was this configuration that the 2017 to 2022 loss experience then tested.

Alternative capital's behaviour over the period is instructive, because it registered the model failure first and on the structure margin. Loss development on the 2017 and 2018 events materially exceeded initial estimates, leaving collateral trapped in aggregate and retrocession structures, with estimates of trapped or impaired ILS collateral ranging from around USD 18 billion to as much as USD 25 billion across 2018 and 2019 (Artemis 2019). The segments that contracted were the structurally exposed ones. Capacity "dedicated to earnings protection (for example, pillared and aggregate transactions) was particularly scarce at January 1, 2020" (Guy Carpenter 2020). By the January 2022 renewal, aggregate retrocession capacity was described as "extremely scarce," having shrunk by roughly 75 per cent to around USD 1.5 billion of limit from roughly USD 6 billion (Artemis 2021). The aggregate share of the outstanding catastrophe bond market, which had approached 60 per cent in late 2019, began the retreat that would take it to 41.7 per cent by the end of 2023 (Artemis 2023; Table 5).

The COVID renewal of January 2021 added the wordings front, with "communicable disease exclusion wording … a key discussion area on every property renewal worldwide" and cyber exclusions similarly near-universal (Guy Carpenter 2021). Structure was tightening element by element years before the headline price reset, and it tightened first in the instruments where model failure had been most direct.

4.3. The reset, January 2023

The January 2023 renewal moved both margins at once, and the joint movement is the signature of a belief shock and not of a pure capital shock (prediction P1). The price movement was the largest in a generation. The global property-catastrophe rate-on-line index rose 27.5 per cent, and 31.3 per cent in the United States, taking the cumulative increase since 2017 to roughly 65 per cent on the nominal index, and 37 per cent in the single year on Howden's risk-adjusted measure (Guy Carpenter 2023a, 2023b; Howden 2023). Contemporaries described the renewal less by its price than by its terms, and the coding of Table 2 records a tightening on every one of the seven structural elements, the only renewal in the record for which that is true.

The element-level record is the baseline against which persistence is then measured. All quotations are given in Appendix B.

- E1, attachment points: "retention levels, which in several cases have been stable for much of the last decade, rose significantly (in the U.S. especially)" (Howden 2023). United States attachment points moved to around the 1-in-10-year event level, "a 100% and sometimes more increase for many cedents," while European attachments moved from the 1-in-2 or 1-in-3-year level toward 1-in-5 (Artemis 2022a). Aon recorded "retentions increasing as reinsurers sought to move further away from frequency layers" (Aon 2023).
- E2, aggregate covers: "higher retentions, tighter terms and reduced frequency coverage (i.e. aggregates, lower excess-of-loss layers, quota shares)" (Howden 2023).
- E3, wordings and exclusions: "named natural catastrophe perils prevailed in most cases, meaning any remnants of non-natural catastrophe coverage ceased at 1 January 2023," with terrorism and strikes, riots and civil commotion "in particular … under scrutiny" (Howden 2023).
- E4, hours clauses: shortened, though the reduction was "relatively slight" (Artemis 2022a).
- E5, event definitions and concurrency: moved to named-peril bases, at the cost of a proliferation of non-concurrent terms within programmes that would take two renewals to repair (Guy Carpenter 2024b).
- E6, reinstatements: moved to paid forms (Howden 2023).
- E7, proportional and retrocession terms: tightened in parallel (Howden 2023).

Two qualifications in the record sharpen the reading. The index publisher attributed its measured increase as "primarily driven by pricing and attachment point adjustments" (Guy Carpenter 2023a): the conflation Section 3.5 formalises. Guy Carpenter also noted that the most extreme wording restrictions "were not widely taken up," with market-wide changes limited to terror and SRCC clauses (Carrier Management, January 2023; Appendix B). The reset was concentrated on the quantitative structure of the transfer — where cover begins and how losses aggregate — rather than on a general evisceration of coverage. In the framework's terms, the corner $\bar{a}$ moved outward and the mandates implementing it were imposed in a single season.

The reset is visible contract by contract in the filings panel (Table 3). Travelers' corporate catastrophe treaty for 2023 raised its retention from USD 3.0 billion to USD 3.5 billion, and the company's aggregate treaty disappeared in a single disclosed sentence: "On January 1, 2023, the Company did not renew the 2022 Underlying Property Aggregate Catastrophe Excess-of-Loss Reinsurance Treaty" (Travelers Form 10-K, FY2022). Universal's combined Florida tower top fell from USD 3.16 billion to USD 2.831 billion while its retention held. American Coastal's programme shrank 47.6 per cent in limit with a new 40 per cent external catastrophe quota share sharing the remainder, which is risk-sharing in structure instead of price. At the June 2023 Florida renewal, Citizens paid a net rate on line of 12.69 per cent against 8.96 per cent a year earlier for a tower still designed to the same 1-in-100-year standard (Table 4).

4.4. Capital returns and the price margin turns, 2023–2026

By the standard industry measures, the two years following the reset were among the most profitable in the modern history of reinsurance. Global reinsurers earned a return on equity of approximately 22 per cent in 2023 (AM Best 2024a), and the four large European reinsurers reported an average combined ratio of 85 per cent in 2024, improving to below 80 in 2025, with a record average return on equity of 19.6 per cent in 2025 (Fitch Ratings 2026a). Retained earnings rebuilt traditional capital rapidly, and total reinsurance capital reached successive records on Aon's estimates: USD 715 billion at the end of 2024, USD 785 billion at the end of 2025 and USD 790 billion at the end of the first quarter of 2026 (Aon 2025a, 2026b, 2026c).

What distinguished this recovery was the behaviour of the alternative segment. Alternative capital had stagnated between roughly USD 90 billion and USD 100 billion from 2018 through 2022 while trapped collateral was resolved (Aon estimates; Appendix A). It grew to a record USD 121 billion by mid-2025, reached USD 136 billion at the end of 2025, a rise of 18 per cent in a single year, and USD 141 billion by the end of March 2026, by which point it was in Aon's words the sole driver of growth in reinsurance capital (Aon Securities 2025; Aon 2026b, 2026c). The catastrophe bond market set records in each year from 2023 through 2025. Issuance of USD 25.6 billion in 2025, 45 per cent above the prior year's record USD 17.7 billion, took the outstanding market to USD 61.3 billion at year-end, 24 per cent larger than twelve months

earlier, with 122 transactions and a record 15 first-time sponsors (Artemis 2026a, 2026b). Almost 76 per cent of 2025 issuance carried indemnity triggers, the highest share on record (Artemis 2026b), which indicates that capital-market investors were competing on terms ever closer to traditional reinsurance.

The price margin responded as prediction P2 expects, and at the speed the framework attributes to a high alternative share. After a final increase of 5.4 per cent at January 2024, the index's peak, the global property-catastrophe rate-on-line index fell 6.6 per cent at January 2025, and 8.1 per cent through the 2025 mid-year renewals. It then fell 12 per cent at January 2026, standing 16 per cent lower year-on-year after the July 2026 renewals. The publisher's index history describes this as the biggest annual decline since the late 1990s, leaving the index 23 per cent below its 2024 peak though still roughly 32 per cent above its 2017 low (Guy Carpenter 2024a, 2025a, 2026a, 2026b). These are the publisher's own statements and they do not reconcile exactly with each other. Chaining the published annual changes from the 2024 peak reproduces the 23 per cent, but a cumulative rise of 65 per cent since 2017 would then place the index about 34 per cent above the 2017 low, against the 32 per cent published; a cumulative rise near 62 per cent would reconcile all three. The residual is most likely rebasing or revision within the index history. The figures are reported here as published, and no step in the argument turns on the difference. Howden Re characterised the January 2026 renewal as a risk-adjusted decline of 14.7 per cent in global property-catastrophe rates, "the largest year-on-year reduction since 2014" (Howden Re 2026). Fitch Ratings revised its global reinsurance sector outlook to deteriorating in September 2025, citing rising competition (Fitch Ratings 2025). Figure 1 summarises the price path: a single-renewal surge, a brief peak, and a reversal whose pace has no precedent in the index's soft markets. Measured by price, the hard market of 2023 was over within three years of its onset, against the five-to-seven-year price cycles of the historical record (Cummins and Outreville 1987; Meier and Outreville 2006).

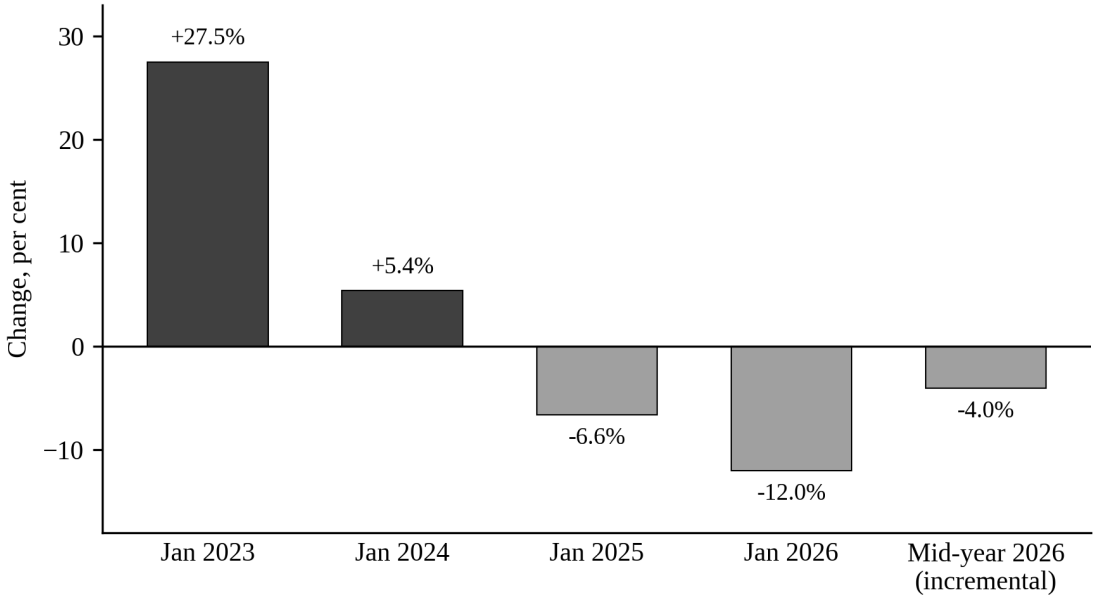


Figure 1. Annual change in the Guy Carpenter Global Property Catastrophe Rate-on-Line Index at January renewals, 2023 to 2026, with the incremental change through the 2026 mid-year renewals. Sources: Guy Carpenter (2023a, 2024a, 2025a, 2026a, 2026b).

Figure 2 sets the nominal index against Howden Re's risk-adjusted series on a common January 2022 base and plots the second term of equation (6) implied by their ratio. The chain uses the published annual changes on each series: nominal +27.5, +5.4, −6.6 and −12 per cent at the January renewals of 2023 to 2026, against risk-adjusted +37, +3, −8 and −14.7 per cent for the same seasons (Howden 2023, 2024, 2025; Howden Re 2026; Guy Carpenter 2023a, 2024a, 2025a, 2026a). The wedge opens by 9.5 index points at the 2023 reset, when the risk-adjusted index rose 37 per cent against the nominal 27.5, and closes almost exactly by January 2026. On this market-wide measure the risk content of the covered layer has round-tripped. The two indices cover different portfolios and use different risk-adjustment conventions, so the ratio is indicative only, and it cannot separate structural erosion from exposure growth at a held attachment. Table 6 makes that separation with company-level data, and is the attachment series the index comparison cannot supply.

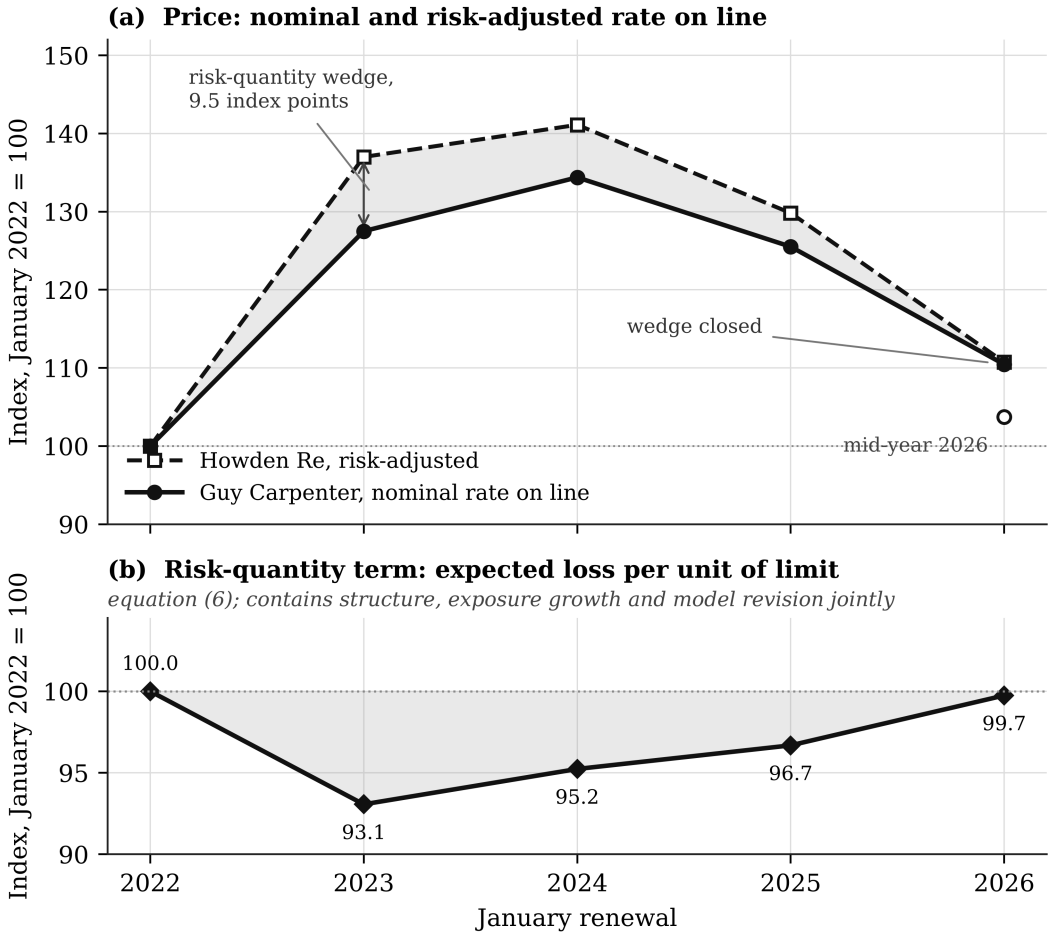


Figure 2. Nominal and risk-adjusted global property-catastrophe rate-on-line indices, January 2022 = 100, with the implied risk-quantity term of equation (6). Panel (a) plots Guy Carpenter's nominal index against Howden Re's risk-adjusted index, both chained from published annual changes. Panel (b) plots their ratio, which is expected loss per unit of limit and contains contract structure, exposure growth and model revision jointly. The two indices cover different portfolios and use different risk-adjustment conventions, so the ratio is indicative only. Howden Re's mid-year 2026 figure was not published, so panel (a) carries the Guy Carpenter mid-year point alone. Sources: Guy Carpenter (2023a, 2024a, 2025a, 2026a, 2026b); Howden (2023, 2025); Howden Re (2026).

More cleanly still, the same round trip is visible in the market where price can be observed at constant structure. The average multiple of catastrophe bond issuance, the risk-adjusted price term of equation (6), rose from 2.58 in 2021 to 4.54 in 2023, the highest in more than two decades. It then compressed to 3.71 in 2024 on the same publisher-weighted basis. On the unweighted quarterly basis used elsewhere in this paper the series runs 3.85 in 2022, 5.22 in 2023, 4.18 in 2024, 2.99 in 2025 and 2.45 in the first half of 2026, with individual quarters reaching 2.44 in the final quarter of 2025, the lowest since 2021, and 2.29 in the second quarter of 2026 (Artemis 2024, 2026a; Gallagher Securities 2026 reported the same

2.44 times expected loss for late 2025). Secondary-market risk spreads fell below 5 per cent in October 2025 for the first time since November 2019 (Artemis 2025). On the price margin the capital-market segment has already returned to its pre-2023 level, and in places to its pre-2017 level. What it has not returned to is the subject of the next subsection.

4.5. Where the structure margin held, and where it did not

Measured by structure, the hard market was not over, and the evidence can be read at four independent levels: the coded broker record, the filings panel, the public programmes and the catastrophe bond market's structural metrics.

Table 2. Direction of change in contract-structure elements by renewal season, 2018 to mid-2026

Renewal	E1 Attachment / retention	E2 Aggregate covers	E3 Exclusions / wordings	E4 Hours clauses	E5 Event definition / concurrency	E6 Reinstatements	E7 Proportional / retro
Jan 2018	= (low)	·	·	= (extended)	·	·	±
Jan 2019	·	↑ (retro)	·	·	·	·	↑
Jan 2020	·	↑	·	·	·	·	↑
Jan 2021	±	↑	↑ (pandemic, cyber)	·	·	·	↑
Jan 2022	↑ (loss-hit)	↑	·	·	±	·	↑
Jan 2023	↑↑	↑↑	↑↑	↑	↑	↑	↑↑
Mid-2023	=	=	=	·	·	·	=
Jan 2024	=	=	=	·	=	·	=
Mid-2024	=	=	±	·	·	·	±
Jan 2025	=	±	=	·	=	↓ (edges)	±
Mid-2025	±	±	↓ (edges)	·	·	·	=
Jan 2026	=	±	=	·	=	·	=
Apr 2026	=/±	↓ (buy-downs)	·	·	·	·	±
Mid-2026	= core / ↓ edges	↓	↓ (edges)	↓ (edges)	·	↓	=

Notes. ↑ tightened; ↑↑ tightened on every source coded for that element, which occurs only at January 2023; = held; ↓ loosened; ± mixed; · not found in the documentary record. Where a cell carries a qualifier in parentheses, it names the part of the element the direction applies to. Pre-2023 "held" means held at the loose soft-market level; from mid-2023, held at the reset level. Each non-empty cell is supported by verbatim quotation with source and date in Appendix B, and the coding protocol is in Section 4.1. The sparseness of E4 and E5 outside January 2023 and mid-2026 reflects the record, not an assumption of stability. The series ends with the mid-2026 renewals because it codes *transacted* outcomes; the forward-looking commentary of September 2026 concerns terms not yet agreed and is treated separately in Appendix C.

The pattern of Table 2 is the paper's first result. Attachment points (E1) show a tightening at January 2023 followed by an unbroken run of "held" through January 2026. Every source coded for the element records the same direction:

- Guy Carpenter: "retention levels largely held steady" (January 2024); "continued reinsurer discipline around property catastrophe program attachment points" (January 2025); "reinsurers continue to benefit from high attachment points" (January 2026).
- Howden: "attachment points remained largely unchanged" (January 2025); "attachments remain elevated by historical standards, terms and conditions are tighter" (January 2026).
- Gallagher Re: "crucially reinsurers basically held the line on attachment points" (January 2025).
- AM Best: "the significant improvements in terms and conditions that reset following the 2023 renewals are proving durable" (January 2026).
- Moody's: "Reinsurers are likely to stand firm on high attachment points for insurers' excess of loss (XoL) treaties for 2026 renewals" (January 2026).

Guy Carpenter's chairman stated the asymmetry as a forecast in September 2024, in terms the framework could have written. "Pricing is likely to perpetually recalibrate, however, program restructuring is likely to endure, particularly with regard to attachment points."

Where movement occurred through mid-2026 it is concentrated in the elements prediction P4 expects. Aggregate covers and prepaid reinstatements re-emerged selectively from January 2025. Retention buy-downs were purchased as separate priced covers beneath maintained core programmes at April and mid-year 2026. By the July 2026 season, analysts warned that terms and conditions had become "the new battleground," with relaxation observed "across certain areas, such as hours clauses, named perils, extensions and reinstatements" (Appendix B). The arc's contemporaneous verdict, from AM Best in August 2026, was that the "higher attachment points and tighter terms established in 2023 have nevertheless largely remained intact."

The filings panel turns this directional evidence into dollars. Table 3 reports the per-occurrence catastrophe retentions disclosed by the nine panel insurers whose filings carry programme dollar terms, treaty year by treaty year; the evidence workbook gives the verbatim disclosure and EDGAR citation behind every cell, and Section 4.1 states why the other three members of the twelve-group frame are excluded.

Table 3. Disclosed per-occurrence catastrophe retentions of United States stock insurers, treaty years 2020-21 to 2025-26

Insurer	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	Other disclosed structural changes
Allstate	$500m	$500m	$500m	$500–750m	$500m–$1bn	$1.0bn (held into 2026-27)	Tower top $4.98bn (2020-21) rising to $11.5bn (2026-27); aggregate cover attachment ratcheted from $2.7bn (2022) to $4.0bn (2025)
Progressive	$80m	$200m	$200m	$200m	$200m	$200m ex-FL / $75m FL	Retention raised 2.5 times at June 2021; aggregate layers' attachment rose from $500m to $665m as limits shrank; 2025 SCS aggregate not renewed for 2026; co-participation up to $48m introduced 2025
Travelers (corporate treaty, calendar year)	$3.0bn (2022)	$3.5bn (2023)	$3.5bn (2024)	$4.0bn (2025)	$3.0bn (2026)	—	Aggregate treaty not renewed for 2023; deep layered co-participations 2024–2025; 2026 retention reduction is the panel's first core concession

Insurer	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	Other disclosed structural changes
Mercury	$40m	$60m	$100m	$150m	$200m	—	Limit purchased rose $792m to $2,140m after the 2025 wildfire renewal; retention quintupled 2021–2025
Universal (UPCIC, Florida)	$43m	$45m	$45m	$45m	$45m	$45m	Tower top fell $3.41bn (2021) to $2.40bn (2024), partially rebuilt to $2.53bn (2025); APPCIC's separate $3.5m retention eliminated 2023
Heritage (Southeast / Hawaii)	$20m	$32m	$40m	$40m	$40m	$50m	Northeast retention $13.3m to $39.3m over the same years; upper-layer co-participations (35.7%, 50%) appear from 2024

Insurer	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	Other disclosed structural changes
American Coastal (ACIC)	$69.3m (group)	$15m	$16.4m	$10m	$20.5m	$29.75m	Limit cut 47.6% in 2023; external cat quota share 40% (2023), 20% (2024), 15% (2025); new aggregate XoL purchased 2025-26
Palomar	$10m	$12.5m	$12.5m	$17.5m	$20m EQ / $15.5m other	$20m EQ / $11m other	Retention rose fourfold from $5m (Jan 2020); $25m aggregate cover (2021–2023) not mentioned thereafter
Kingstone	$10m	$10m	$10m	$10m	$10m	$10m	Cat top cut $610m (2019) to $280m (2024), rebuilt to $440m (2025); reinstatement protection shrank from a $292.5m layer (2019) to $9.8m (2022)

Notes. Treaty years run 1 June to 31 May for the Florida and coastal writers, 1 July to 30 June for Mercury and Kingstone, and calendar years for Travelers' corporate treaty, shown against the prior-year column for alignment; Allstate's nationwide programme presents at 1 April and 1 June. Retentions are per-occurrence first-event values as disclosed, and net retentions after quota share differ, as the workbook records. Chubb, Cincinnati Financial and HCI Group are members of the twelve-group frame but are excluded here for the reasons given in Section 4.1. Sources: Form 10-K and Form 8-K filings listed per cell in the evidence workbook; all quotations verbatim.

The argument rests on three features of Table 3. The first is the level shift. Across the panel, retentions moved up between the 2021 and 2023 treaty years, by factors of two to five at the nationals and by 60 to 150 per cent at the coastal specialists. Second, the persistence. With a single exception, no panel insurer's core retention has returned toward its pre-2023 level through the 2025-26 treaty year: retentions were maintained, as at Universal, Progressive and Kingstone, or raised further into the softening market, as at Mercury, Heritage, Allstate and American Coastal. The exception is instructive. Travelers' 2026 corporate treaty cut its retention back to USD 3.0 billion, the panel's first core concession, purchased in the softest market in a decade, and even then its aggregate treaty, non-renewed in 2023, had not returned. Third, the aggregate record: Travelers' explicit non-renewal in 2023, Progressive's shrinking aggregate limits at rising attachments, Palomar's aggregate cover lapsing from disclosure after 2023, and American Coastal's new separately priced aggregate purchase in 2025-26, the last an instance of P4's selective, priced re-emergence rather than a restoration of the old architecture.

With towers instead of treaties, the public programmes tell the same story (Table 4). Florida's Citizens held its programme design anchor, full recovery in a 1-in-100-year event, through every year of the cycle while its price round-tripped. The California Earthquake Authority's structural decision came as a formal board vote in March 2022, lowering its claim-paying-capacity target band from a 1-in-400-year minimum to 1-in-350, and its subsequent tower shrinkage proceeded by deliberate non-renewals while the new band held. The Texas association's structural break ran through statute and not the market: House Bill 3689 of 2025 cut its funding mandate from the 1-in-100-year season to 1-in-50, nearly halving its 2026 risk transfer. That last case is recorded deliberately, as a reminder that not every structural movement in the record is a market belief revision. Section 4.6 explains why the Texas association's attachment series cannot be read as evidence about reinsurer behaviour.

Table 4. Public-programme towers: design standard, risk transfer and price

Programme	Year	Design standard / attachment	Risk transfer purchased	Cost ($m)	Net rate on line (%)
Citizens (FL)	2021	1-in-100 design; coastal attachment $2.014bn	$2.6bn	~250	—
Citizens (FL)	2022	1-in-100 design; 1-in-100 PML ~$12.8bn	$2.535bn placed against $3.64bn target	~400	8.96
Citizens (FL)	2023	1-in-100 design; authorised $5.644bn	$5.38bn	~650	12.69
Citizens (FL)	2024	Attachment $3.514bn; exhaustion $15.733bn	$3.564bn against $5.5bn target	~482	13.44
Citizens (FL)	2025	1-in-100 design; sliver $394m xs $2.55bn	$4.49bn, 70% capital markets	~531	11.74
Citizens (FL)	2026	Layers above the $1.05bn FHCF attachment	$2.816bn, 75% capital markets	276.5	9.52
CEA	2021	Claim-paying capacity band, minimum 1-in-400	$9.6bn	~500	—
CEA	2022	Board lowers band to minimum 1-in-350 (March)	—	—	—

Programme	Year	Design standard / attachment	Risk transfer purchased	Cost ($m)	Net rate on line (%)
CEA	2023	Capacity equivalent to 1-in-360	$8.2bn	—	—
CEA	2024	Band maintained; deliberate non-renewals	$8.5bn falling to $7.99bn	—	—
CEA	2025	Band maintained	$7.912bn, 36% catastrophe bonds	—	—
TWIA	2021	Statutory 1-in-100 season; attachment $2.1bn	$1.93bn	—	—
TWIA	2022	Statutory 1-in-100; funding $4.236bn	$2.036bn	102.1	6.75
TWIA	2023	1-in-100 PML $4.5bn; attachment $2.27bn	$2.238bn	—	9.10
TWIA	2024	1-in-100 PML $6.5bn	$4.05bn	389.9	9.60
TWIA	2025	1-in-100 PML $6.227bn	$4.227bn	417.0	9.84
TWIA	2026	Statutory break: HB 3689 cuts mandate to 1-in-50 (PML ~$4.5bn)	$2.28bn	~212	~10.00

Notes. One row per programme-year. Cost is the ceded premium or programme budget in United States dollars as disclosed; a dash means the figure is not disclosed for that year. Rate on line is the net figure where the programme publishes one. Citizens' 2026 new placements were priced roughly 29 per cent below 2025 on a like-for-like basis. Citizens' policy count fell from a peak of 1.4 million in October 2023 to roughly 293,000 in June 2026 through depopulation, which drives the 2026 programme size independently of market structure. Sources: Citizens board layer charts (2025) and Artemis reporting of board materials; CEA and TWIA rows from the sources listed in Appendix A and the evidence workbook.

Finally, the catastrophe bond market permits the two margins to be read off the same transactions (Table 5), and here the record departs from the treaty evidence. The departure is the most instructive finding in this section.

The price term round-trips, as it does everywhere else. The structure term round-trips as well. The average expected loss of issuance, which the market's own chronicler reads as an attachment measure, attributing its 2021 decline to "cat bond investor focus shifting further towards the higher layers of reinsurance towers" (Artemis 2022b), fell from a mean of 2.33 per cent across the four quarters of 2022 to 1.84 per cent across the four quarters of 2023, the reset's structural signature in this market. It has risen in each subsequent year: 2.21 per cent in 2024, 2.49 per cent in 2025 and 2.81 per cent across the first half of 2026. Measured consistently, the entire 2023 tightening has been given back and more, with the series standing 53 per cent above its 2023 trough and 21 per cent above its 2022 mean. Whether it now sits above the levels of 2020 and 2021 is not determinable from these data, because the published annual figures for those years are issuance-weighted while the quarterly means used here are not. The comparison the paper does make, against the 2022 and 2023 quarterly means, is on one basis throughout. What the data establish, on one basis throughout, is that the structural retreat of 2023 has been fully reversed in this market. The commentary corroborates the arithmetic: investors are described as "willing to support riskier tranches," with approximately 18 per cent of early-2026 issuance volume covering risks whose expected losses attach below the 1-in-25-year return period (Gallagher Securities 2026).

Not all of the picture is uniform, and the qualification matters. The aggregate share of issuance, 64 per cent of the limit placed in the years to mid-2017 and mid-2018, fell to 34 per cent of 2023 issuance and had recovered only to 42 per cent by 2025: a structural tightening that has not reversed. The indemnity-trigger share meanwhile climbed to successive records, almost 76 per cent in 2025 and 81 per cent in the first half of 2026, moving terms in sponsors' favour. That series should be read as a secular trend: it stood at 66 per cent in 2023, above its 2022 level, so there is no 2023 tightening in it to retrace. The structural retracement in this market is therefore specific. Expected loss per unit of limit, the measure that corresponds to attachment, has given back the whole of its 2023 movement. Aggregation basis has not.

Table 5. Catastrophe bond market: price metrics versus structure metrics, 2017 to H1 2026

Year	Issuance $bn	Outstanding $bn	Avg multiple (price)	Avg expected loss % (structure)	Indemnity share	Aggregate share of issuance
2017	12.6*	>31	1.86 [a]	n/f	61% (Q4)	64% (yr to Jun 2017)
2018	13.9*	37.6	2.06 [b]	n/f	~61%	64% (yr to Jun 2018)
2019	11.1*	41	2.75 [b] (3 q)	n/f	48% (Q4)	n/f
2020	16.4*	46.4	2.98 [a]	2.50 [a]	70% (Q4)	n/f
2021	14.0	~35.9	2.58 [a]	2.44 [a]	60% (Q4)	~45%
2022	10.5	37.9	3.38 [a]	2.33 [b]	~65%	51%
2023	16.4	~45	4.54 [a]	**1.84** [b]	66%	**34%**
2024	17.7	49.5	3.71 [a]	2.21 [b]	73%	unresolved
2025	25.6	61.3	2.99 [b]	2.49 [b]	almost 76%	42%
H1 2026	18.0	65.6	**2.45** [b]	**2.81** [b]	81%	n/f

Notes. Compiled from the 38 Artemis quarterly *Catastrophe Bond & ILS Market Reports* covering Q1 2017 to Q2 2026; the full quarter-by-quarter series, with the verbatim sentence and report URL behind every value, is reproduced in the evidence workbook. [a] = the publisher's own full-year figure, which is issuance-weighted. [b] = the unweighted mean of that year's quarterly figures, used where no full-year figure was published. The two bases are *not* interchangeable: for the multiple, where both exist, they diverge by up to 15 per cent (2023: 4.54 weighted against 5.22 unweighted). Within-series comparisons in the text therefore use one basis throughout. Asterisked issuance and outstanding totals for 2017 to 2020 include mortgage ILS and are not comparable with later years (series break at 2021); n/f = not found; the 2024 aggregate share is excluded as an unresolved chart-reading conflict (Section 4.1). Aggregate share of the *outstanding* market: ~51% (early 2017), ~60% peak (late 2019), 47.4% (June 2023), 41.7% (December 2023).

The contrast with Tables 2 to 4 is sharp, and it holds within the same three-year window, for the same peril and often for the same sponsors. Where treaty reinsurers held attachment points through three renewals of falling price, the capital markets did not. One qualification to the composition account of Section 5.1 should be registered here, because the paper's own data impose it: with 18 per cent of early-2026 issuance attaching below the 1-in-25-year return period, capital-market money is no longer confined to the remote, well-modelled layers. Section 5.3 argues that what distinguishes the two markets is therefore not the composition

of the capital but the institution through which it is deployed.

Where held attachments meet years of continued elevated frequency losses, the consequence is visible in the loss statistics. Insured natural-catastrophe losses were roughly USD 140 billion in 2024 and USD 108 billion in 2025, the latter matching the ten-year inflation-adjusted average despite the United States escaping a major hurricane landfall, and including a roughly USD 40 billion insured wildfire event in January 2025 (Munich Re 2025, 2026). The reinsured share of 2024's global catastrophe losses fell to an estimated 14 per cent against a pre-2023 average of 20 per cent (Guy Carpenter, December 2024; Appendix A), and Moody's expected insurers to "continue to retain a large proportion of losses from secondary perils" through 2026 (Moody's Ratings 2026a). That is the redistribution the reset was designed to produce, and the protection-gap mechanism to which Section 6.3 returns.

4.6. The attachment in real terms

Section 4.1 conceded that the broker record codes attachments in nominal dollars while Section 3.1 defines the structure margin in real terms. This subsection measures the difference instead of conceding it, because the concession on its own cannot settle whether three years of held dollars amount to held structure.

Of the four candidate normalisers tested, three fail, and why each fails bears on what public disclosure can support.

The first is the return period, which is the measure Section 3.1 defines and the one a reader would want. Among the public programmes only the Texas Windstorm Insurance Association discloses a modelled 1-in-100-year loss alongside its attachment across the window, taking the attachment as disclosed where given and as the modelled loss less risk transfer where not. On that basis the attachment stands at 52 per cent of the modelled 1-in-100 loss in 2021, 52 in 2022, 50 in 2023, 38 in 2024 and 32 in 2025: the attachment held between USD 2.0 and 2.45 billion while the modelled loss grew 55 per cent. Read as market evidence this is severe real loosening. It is not market evidence. The association is statutorily obliged to fund the 1-in-100 season, so its attachment is set by its own pre-funding capacity and is not negotiated, and its reinsurers in fact wrote more cover at a lower attachment as the modelled loss grew; the 2026 year is not comparable at all, since House Bill 3689 moved the mandate to a 1-in-50 standard. Florida's Citizens is confounded differently and as severely: its policy count fell from 1.4 million to roughly 293,000 across the same period, so every ratio moves with depopulation and not with terms, and it does not publish a consistent annual modelled loss in any case. The return-period route is therefore unavailable on these data, and Table 4's rows are reported for what they are.

The second is the top of the programme, disclosed for the panel insurers in the evidence workbook and summarised in the final column of Table 3. Taking each company's earliest and latest disclosed observation, retention divided by tower exhaustion rises for five of the

eight panel companies that have a pre-reset observation, with a median increase of 36 per cent. The measure is nonetheless unusable, because its denominator is a purchasing decision, not an exposure. Kingstone's ratio rises 85 per cent between the 2019-20 and 2025-26 treaty years, from 1.2 to 2.3 per cent, and does so mainly because its tower was cut from USD 610 million to USD 280 million before being rebuilt to USD 440 million, against a retention that moved only from USD 7.5 million to USD 10 million. Universal's rises 36 per cent, from 1.3 to 1.8 per cent, on a retention that moved from USD 43 million to USD 45 million and a tower that shrank from USD 3.28 billion to USD 2.53 billion. A measure that records structural tightening when a cedent buys less limit is measuring the wrong thing.

The third is the issuer's own disclosed probable maximum loss, available in the panel only for Allstate, whose Form 10-K states a risk-tolerance threshold for net aggregate catastrophe losses at a 1 per cent annual exceedance probability. That threshold moved from USD 2.0 billion in FY2019-20 to USD 2.5 billion for FY2021 to FY2023, USD 3.5 billion in FY2024 and USD 3.1 billion in FY2025, while the per-occurrence retention moved from USD 500 million to USD 1.0 billion. The retention therefore doubled against a net modelled loss that rose 55 per cent, and its ratio to that loss moved from 25 to 32 per cent. The direction favours the paper, but the measure is endogenous: the net probable maximum loss is net of the very programme whose retention is being evaluated, and Allstate's own language frames it as a tolerance the programme is constructed to deliver. It is reported for completeness and carries no weight in what follows.

The fourth works. Total insured value is exogenous to the reinsurance programme, and the Florida Office of Insurance Regulation collects it quarterly for every admitted writer through its QUASR return. Citizens reproduces the per-company figures in its quarterly market share reports. Because the Florida and coastal treaty years run from 1 June, each treaty year is paired with the 31 March snapshot immediately preceding its renewal. The measurement is possible for the three panel members whose exposure is predominantly Florida and whose retentions are disclosed on a consistent basis.

Table 6. Per-occurrence retention per unit of insured value, Florida coastal specialists

Company	Insured value, 31 Mar 2024 (bn) | $Retention 2024-25$(m)	Insured value, 31 Mar 2025 (bn) | $Retention 2025-26$(m)	Retention per $bn, 2024-25	Retention per $bn, 2025 – 26 | $Change$ | $Exposure-constant retention, 2025–26(m)				
Universal	184.6	45.0	181.9	45.0	0.244	0.247	+1.5%	44.3
Heritage	102.0	40.0	101.3	50.0	0.392	0.494	+25.9%	39.7
American Coastal	53.9	20.5	62.4	29.75	0.380	0.476	+25.4%	23.7

Notes. Insured values are Florida Office of Insurance Regulation QUASR data as reproduced in Citizens' Florida Residential Property Market Share reports at 31 March 2024 and 31 March 2025. Universal and Heritage are measured on all personal and commercial residential policies; American Coastal on commercial residential, the only segment in which it appears. Retentions are the per-occurrence first-event values of Table 3. The exposure-constant retention is the 2024-25 retention scaled by the change in insured value, that is, the retention that would have left the structural position unchanged. Full citations in Appendix A.

The result is uniform in direction. Across the softening renewal, the retention rose relative to the exposure it protects at all three companies, with a median increase of 25.4 per cent, and in every case the actual retention exceeded the exposure-constant level.

Universal is the case the objection is built for. Its retention sat at exactly USD 45 million from the 2021-22 treaty year through 2025-26 — the nominal constancy that both an analyst house and a reinsurance chief executive described in September 2026 as real loosening. Measured against its own insured value, which fell 1.5 per cent over the year, the unchanged USD 45 million is a small real tightening, not a loosening. Heritage and American Coastal raised retentions considerably faster than their exposure grew: American Coastal's insured value rose 15.8 per cent while its retention rose 45 per cent.

Within the window the objection concerns — the softening phase, not the reset — the attachment did not erode in real terms for any company where the measurement is possible. That is a narrower claim than the general proposition that structure held, and it is the claim the data support.

Three companies, all Florida, all coastal specialists, and two treaty years. This is not the global property-catastrophe market, and the finding is offered as a test of one specific objection, not as a market-wide measurement. Heritage's retention attaches on a Southeast and Hawaii tower while its exposure base here is the Florida book, a mismatch of perimeter. American Coastal's disclosed retention basis changed from a single-company to a consolidated figure between the two years. Insured value is a replacement-cost measure and therefore moves with construction cost inflation, a feature of this application and not a defect, since construction cost inflation is part of the loss-cost inflation that the nominal record is said to hide. Extending the series back across the reset requires the 31 March 2022 and 2023 QUASR returns, and extending it beyond Florida requires an exposure disclosure that most states do not collect.

One forward-looking implication follows, and Section 6.4 records it as a test and not as a hedge. Insured values at 31 March 2026 were higher again at all three companies, by 3.2 per cent at Universal, 5.0 per cent at Heritage and 6.9 per cent at American Coastal. If retentions hold at their nominal 2025-26 levels into the 2026-27 treaty year, the structural position

erodes by 3.1, 4.7 and 6.5 per cent respectively. Nominal constancy and real constancy coincided in the 2025-26 renewal. They will not coincide in the next one, and the difference is now measurable in advance.

4.7. How representative is this record?

Any documentary study owes an account of how much market the documents cover. Table 7 assembles the relevant shares. The evidence is, by construction, weighted toward the United States: that is where disclosure exists, but it is also where the global market's weight lies. The United States accounted for 76 per cent of global insured natural-catastrophe losses in 2024 and 78 per cent in 2025 (Gallagher Re 2025, 2026), more than half of the USD 35 to 40 billion of new global property-catastrophe limit purchased in 2024 originated in North America (Guy Carpenter mid-year update; Appendix A), and the catastrophe bond market is "dominated by US wind exposures" (Swiss Re Capital Markets 2026).

The filings panel covers 21.0 per cent of United States homeowners direct written premium. That figure is computed over the seven panel groups that appear in the NAIC top twenty-five, which is the only basis on which NAIC shares can be summed. Two of those seven do not appear in Table 3, so the share for which programme terms are reported in dollars is 17.5 per cent. Both figures understate the panel's catastrophe-exposure coverage, because the panel is overweight the coastal specialists and the five added members write concentrated coastal risk that their homeowners premium share does not capture. The binding constraint on any filings-based design is stated openly: seven of the ten largest homeowners writers, holding some 46 per cent of that market, are mutuals or reciprocals and file no Form 10-K. Their reinsurance programmes are observed here only through the broker aggregates of Table 2 and, indirectly, the catastrophe bond record.

Florida is deliberately overweighted. It carries over half of United States insured hurricane risk (Kousky and Medders 2024), its specialists cede at 8.7 times the national composite leverage (AM Best 2024b), and it is where the structure margin binds hardest. The panel plus Citizens covers the largest private writer (Universal, 7 per cent of Florida personal-residential premium), the residual insurer (13 per cent), the leading commercial-residential writer (American Coastal, 30 per cent of that segment), and Heritage and HCI at 3 per cent each. Florida is also the only state whose regulator publishes the per-company exposure data that Section 4.6 requires, which is why the real-terms measurement is possible there alone.

The catastrophe bond evidence covers a market of USD 61.3 billion outstanding against alternative capital of USD 136 billion and total reinsurance capital of USD 785 billion at end-2025, which is 45 per cent of the alternative pool and about 8 per cent of the total, with property catastrophe risk constituting 93 per cent of 2025 issuance. The record is therefore best described as near-comprehensive for the directional structure of the global

property-catastrophe market, dollar-precise for a fifth of the United States homeowners market plus its largest public programmes, exposure-normalised for three Florida specialists, and transaction-precise for the capital-market segment. European and Asian treaty terms enter only through the broker record, and extending the filing-level panel to non-United States disclosures is identified in Section 7 as the natural next step.

Table 7. Representativeness of the evidence base

Dimension	Statistic	Value
US weight in global catastrophe experience	US share of global insured nat-cat losses, 2024 / 2025	76% / 78% (Gallagher Re); North America ~77% / ~86% (Munich Re)
US weight in reinsurance demand	Share of 2024's new global property-cat limit (+$35–40bn) from North America	>50% (Guy Carpenter)
Panel coverage, US homeowners	2024 homeowners DWP share of the seven panel groups in the NAIC top 25 (total market $172.7bn)	21.0% (Allstate 8.97, Travelers 4.72, Chubb 2.54, Progressive 1.90, Universal 1.13, Cincinnati 0.93, Mercury 0.83)
Panel constraint	Top-10 homeowners writers that are mutuals or reciprocals and file no 10-K	7 of 10; 45.9% of DWP
Florida coverage	Citizens / Universal / HCI / Heritage share of FL personal-residential premium; American Coastal share of FL commercial-residential	13% / 7% / 3% / 3%; 30%
Florida weight	FL share of US insured hurricane risk; FL specialists' ceded reinsurance leverage against US composite	>50%; 514.7% against 59.1% (AM Best, 2023)
Exposure-normalised coverage	Companies for which per-company insured value is published and retentions are disclosed (Section 4.6)	3 (Universal, Heritage, American Coastal)

Dimension	Statistic	Value
Capital-market segment	Cat bonds outstanding against alternative capital and total reinsurance capital, end-2025	$61.3bn / $136bn / $785bn (45% and 7.8%)
Cat bond property share	Property-cat share of 2025 issuance; US-peril weight	93%; "dominated by US wind exposures"

Notes. Sources: NAIC (2025) market share data for 2024; Citizens Florida market share reports; AM Best Florida market report (May 2024); Gallagher Re and Munich Re annual loss reports; Guy Carpenter mid-year 2024 update; Artemis and Aon capital estimates. Full citations in Appendix A and the evidence workbook.

4.8. The casualty comparison case

Casualty provides the framework's second comparison case. It is not a control: casualty loss emergence, reserving and capital structure differ from property catastrophe in ways that no matching can remove, and the comparison is asked only to show the direction of movement on each margin within the same renewal season. Alternative capital's participation in casualty remains marginal — the segment's loss emergence is too slow and too disputable for collateralised structures — and the relevant model dispute, over social inflation and the adequacy of reserves for recent accident years in United States liability lines, remained open through 2025 and 2026 (Geneva Association 2020; AM Best 2025, 2026). Prediction P3 expects both margins to resist softening in such a segment, and the record conforms. At the January 2026 renewal, the same season at which property rates fell by double digits, United States-exposed casualty excess-of-loss placements continued to see rate increases of approximately 10 per cent on lower-attaching programmes, with cedents and reinsurers alike described as "disciplined with respect to limit management, terms and conditions … and maintaining appropriate attachment points," while proportional casualty ceding commissions renewed flat to down (Guy Carpenter, January 2026; Appendix B). Several reinsurers strengthened casualty reserves in 2024 and 2025, and AM Best expected the trend to continue (AM Best 2026).

Within a single renewal season, at a single set of counterparties, the margins moved together where models remained in dispute and apart where capital had returned. Casualty and the catastrophe bond market both fail to decouple, and they fail for opposite reasons: the first because no capital bids and no model is trusted, the second because capital bids and no mandate holds.

5. Interpretation: Why the Margins Decouple

5.1. What supplier composition does and does not explain

The price margin and the structure margin clear against different pools of capital, and the composition of those pools is the first candidate explanation. Alternative capital has historically competed in the remote, modelled, occurrence-based layers of property-catastrophe programmes. The catastrophe bond requires a loss process that third-party models can price and a trigger that investors can verify, conditions satisfied at the top of programmes and less easily satisfied in frequency layers, aggregate structures and casualty (Cummins and Weiss 2009; Braun 2016). The economics of full collateralisation make capital-market capacity comparatively expensive for high-frequency exposures that consume collateral often, an argument formalised by Lakdawalla and Zanjani (2012). On this account the record capacity documented in Section 4.4 bids directly on the price of the layers it can occupy while leaving the frequency layer's terms to traditional balance sheets, producing asymmetric competitive pressure: intense on price at the top of the programme, negligible on the question of where the programme begins.

The account is partly right and cannot be the whole story, and the paper's own evidence is what limits it. Section 4.5 reports that approximately 18 per cent of early-2026 catastrophe bond issuance attached below the 1-in-25-year return period, and that the average expected loss of issuance has risen through four consecutive years. Capital-market money is moving down the tower into frequency-adjacent layers. A composition account that rests on capital being unable to reach those layers is therefore weakening as a description of the market, at the same time as the structural divergence it is invoked to explain is widening.

More decisively, composition explains where capital can compete. It does not explain what resists capital where capital competes freely. Section 4.5 shows a market in which the same capital sets both price and structure directly, and in which structure followed price down and retraced its entire reset. Whatever holds the treaty market's attachment, it is not a property of the capital, because the same capital dissolved structure on the other side of the comparison.

5.2. Beliefs move on evidence, not on capital

The first asymmetry is informational, and it explains the position of the corner in Section 3.2 rather than the speed at which observed attachments approach it. The price of a defined risk can fall the moment more capital bids for it. The definition of the risk moves only when the models defining it are trusted again. The 2023 structural reset encoded a specific judgment: that the frequency component of catastrophe experience, meaning secondary-peril accumulation under climate non-stationarity with exposure growth and social inflation compounding, could not then be modelled with the confidence that low attachments and aggregate covers require. Underwriters price ambiguous risks conservatively or decline them (Hogarth and

Kunreuther 1989; Kunreuther, Hogarth and Meszaros 1993; Dietz and Walker 2019), and the reset was a collective decision to decline. The mechanism has a clean precedent. After 11 September 2001, terrorism cover was withdrawn and did not return with the industry's capital, because what had been destroyed was parameter confidence rather than surplus alone (Cummins and Lewis 2003).

Three years of subsequent experience have rebuilt capital but have only partially rehabilitated the models. Annual insured losses continued to run at or above USD 100 billion with the frequency composition intact, and secondary perils accounted for a record 92 per cent of insured losses in 2025 on Swiss Re's count. The events of 2025, a roughly USD 40 billion January wildfire above all, reinforced the case for treating the sub-attachment band as structurally uncertain (Munich Re 2026; Swiss Re 2026). In the framework's terms, k_t recovered while the ambiguity premium φ in the frequency region did not narrow materially, so the corner $\bar{a}$ has not moved far inward. This is also why such structural loosening as the 2025 and 2026 record shows is concentrated where it is: in specific lower layers and named covers for specific cedents whose data and mitigation the reinsurer can underwrite individually: retail rehabilitation of model trust, not wholesale reversal (Aon 2026c; Appendix B).

Belief revision alone, however, predicts that both markets should behave alike, since both face the same perils and largely the same vendor models. Section 4.5 shows they did not. The remaining difference is institutional.

5.3. The governance ratchet

The two margins are administered differently within the reinsurance firm, and the difference produces the adjustment asymmetry of equation (3). Rate adequacy is managed continuously and delegated. Pricing actuaries maintain views of technical rates and line underwriters negotiate around them treaty by treaty, so prices drift with the market season by season. Structural minima are set as underwriting mandates: attachment floors, aggregate prohibitions, wording requirements, imposed centrally after the 2022 and 2023 loss reviews and alterable only by the same central decision that imposed them. An institution that publicly attributed its 2017 to 2022 underperformance to structural laxity cannot quietly restore the old structures without repudiating its own diagnosis, and the mandate binds until its authors are persuaded that the conditions justifying it have changed. The contract-design literature reads the same features from the demand side: co-participations, paid reinstatements and loss-sensitive terms are the treaty's instruments for governing moral hazard and information asymmetry (Jean-Baptiste and Santomero 2000; Doherty and Smetters 2005), and so they are reset by deliberation and not by drift. Tightening was therefore fast — accomplished in a single renewal — while loosening requires a decision that no seasonal negotiation can deliver.

The catastrophe bond market supplies the comparison, and it is the strongest evidence this

paper offers. Section 4.5 shows that over the same three years, for largely the same perils and often the same sponsors, the structure margin in that market tracked the price margin down and gave back all of the 2023 tightening, while in the treaty market beneath it attachment points held through three renewals of falling price. Two markets, one shock, one class of risk, and structure persisted only in the one where an institution was charged with holding it. Had abundant alternative capital been sufficient of itself to hold structure, it would have held structure where alternative capital is most abundant, and it did not. Had abundant capital been sufficient to dissolve structure, it would have dissolved it in the treaty market too, and it did not. What differs between the two is the mandate.

To claim that capital-market capacity is deployed under no governance at all would be too strong, and the qualification bounds the argument. Dedicated insurance-linked securities funds operate under investment guidelines that constrain which risks they may buy: expected-loss ceilings, peril and zonal concentration limits, minimum spread multiples, and in some mandates restrictions on aggregate structures. Those are governance of a kind, and the contrast with treaty reinsurance is therefore one of degree and of locus, not of presence and absence. What the comparison rests on is three remaining differences. An investment guideline is set by the capital provider rather than by the party bearing the reputational consequence of the underwriting diagnosis, so no one inside the fund must repudiate a published explanation of past losses in order to relax it. It is renegotiated at the fund-raising cycle and not by committee decision, and an investor who wants different terms can reallocate to a different fund, so the market-level constraint adjusts through capital reallocation at something close to the speed of price. And it is expressed as a portfolio tolerance, with no floor applied transaction by transaction, so it does not prevent any individual deal from attaching lower. Those three features are precisely what make λ_s^- large in one market and small in the other, and the prediction they generate is in principle checkable against the guideline disclosures in fund offering documents.

The historical contrast supports the mechanism from the other side. In the soft markets of the 2010s, when no comparable belief shock had occurred and no comparable mandates existed, terms and prices eroded together — hours clauses stretching to 504 hours, aggregate covers proliferating at low deductibles. That is the configuration Weiss (2007) treats as the normal soft-market pattern, and the post-2023 market has conspicuously failed to reproduce it. The sternest test is now in progress. The mid-2026 record shows terms becoming, in one analyst's phrase, "the new battleground," and prediction P4 — selective, priced and evidence-led loosening, not general reversal — is what distinguishes this account from a bargaining-power account under which abundant capital should already have bought back the old structures wholesale.

5.4. The demand side

Decoupling requires that cedents accept it, and the acceptance has an economics of its own. A cedent facing a hardened structure margin but a softening price margin can spend its reinsurance budget on cheaper remote cover while financing the retained frequency band through primary rate, captives and structured retentions, which is the margin of corporate demand the reinsurance-demand literature models (Cole and McCullough 2006). Increasingly it can also do so through its own catastrophe bond issuance, the route taken by the record 15 first-time sponsors of 2025 (Artemis 2026b).

This raises a rival reading of the central finding that the paper should state openly. An observed attachment is an equilibrium outcome, and attachments that hold are consistent both with reinsurers refusing to go lower and with cedents choosing not to buy lower. The record contains direct evidence that lower attachments were available to some buyers: Aon reported in April 2026 that "favorable market conditions allowed buyers to reassess risk appetite and optimize program design," and retention buy-downs were actively purchased and, by the 2026 mid-year season, actively marketed for January 2027 (Appendix B). How much of the persistence this explains turns on three things. Buy-downs were bought as separate, separately priced covers beneath maintained core programmes and not as reductions in the core attachment, a different transaction and one that leaves the mandate intact. The concession was also distributed by counterparty strength and not by exposure: Moody's reports larger and more sophisticated cedents obtaining selectively lower attachments while smaller insurers saw attachments rise. That is what a mandate yielding at the margin looks like and is not what a demand-side account would predict. Third, and most directly, Section 4.6 shows retentions rising faster than exposure at all three companies where the comparison is possible, and that is difficult to read as cedents declining cover they were offered. The demand-side account is not eliminated. It is bounded by the direction of the exposure-normalised movement and by the form the concessions took.

Retained frequency losses pass through to primary pricing and to policyholders, and this connects the reinsurance structure margin to the protection-gap literature. Risk pushed below the attachment does not disappear. It migrates to balance sheets — those of households, firms, insurers and ultimately governments — that are less equipped to diversify it (Kousky 2019; Munich Re 2026). The filings panel shows the same adaptation in primary-market form: Born and Viscusi (2006) found that catastrophic shocks move insurers on coverage and participation margins as well as price, and the post-2023 record of rising primary retentions, purchased buy-downs and quota-share risk-sharing is that finding operating one level up the risk-transfer chain. The demand side thus stabilises the decoupling in the medium run while accumulating the political-economy pressures that may eventually unwind it.

6. Implications

6.1. For the measurement of cycles

The immediate implication is metrological, and Section 3.5 gives it exact form. The workhorse series of the empirical cycle literature conflate the two margins by construction. Equation (6) shows a rate-on-line movement to be the sum of a risk-adjusted price change and a change in expected loss per unit of limit, and the January 2023 observation demonstrates the conflation at its most extreme. An index movement of 27.5 per cent attributed by its own publisher as "primarily driven by pricing and attachment point adjustments," and *tempered*, on the publisher's own account, by those same attachment increases (Guy Carpenter 2023a, 2023b), is not a price observation in the economic sense. The contemporaneous risk-adjusted measure moved ten points more (Howden 2023), and the difference is the structure margin passing through the index. A study regressing such an index on capital variables mis-attributes to price what belongs to structure, and understates the hard market's true price movement in the process. The publisher states as much: the index reflects "a growing (or shrinking) exposure base, evolving methods of measuring risk and changes in buying habits, as well as changes in market conditions" (Guy Carpenter 2023a). Risk-adjusted rate-change measures of the kind the intermediaries now publish correct for this only partially, because the risk adjustment itself depends on the models whose revision the structure margin encodes. The econometric scepticism of Boyer, Jacquier and Van Norden (2012) about detectable price cycles may in part reflect this contamination: if hard markets operate substantially through structure, price series alone will understate the cyclicality of the underwriting bargain in exactly the episodes that matter.

A second conflation compounds the first. Attachment points are reported in dollars, but the economic object is the attachment relative to modelled loss. Through a period of loss-cost inflation and exposure growth the two diverge steadily, so that a programme whose attachment is unchanged in dollars attaches at a shorter return period each year. Section 4.6 shows both that this problem is tractable and how narrow the conditions for doing so are. An exposure series that is exogenous to the reinsurance programme resolves the question directly, and for three Florida companies such a series exists because one state regulator collects per-company insured values and publishes them quarterly. For the rest of the market it does not exist, and the two substitutes available in filings both fail: the top of the programme is a purchasing decision, and the issuer's disclosed probable maximum loss is net of the programme being measured.

What follows is therefore sharper than a general call for better data. A structure series that is not deflated by exposure is the structural analogue of a rate index that is not risk-adjusted, and it will overstate persistence exactly when exposure is growing fastest. What makes the deflation possible is a single regulatory return, collected quarterly, reporting policies in force and total insured value by company. One state already collects it. Supervisors elsewhere,

and the supervisory data collections that already exist in major markets, could make the structure margin measurable at negligible cost by collecting the same two fields, and the catastrophe bond market's paired disclosure of spread and expected loss provides a working model of what paired price and structure reporting looks like. For researchers, the implication is that terms-of-coverage variables deserve treatment as cycle observables of equal standing with price, a step for which precedents exist in the literature on coverage rationing after capital shocks (Froot 2001; Born and Viscusi 2006).

6.2. For cycle theory and the dampening conjecture

For theory, the episode splits the dampening conjecture in two. On the price margin the conjecture is confirmed in strong form. A hard market that historical experience suggests should have decayed over five to seven years was fully reversed on price within three, under direct competitive pressure from a record alternative-capital pool, which is the mechanism Froot (2001) and Cummins and Weiss (2009) anticipated.

On the structure margin the conjecture fails in the treaty market, and the reason is not the one a composition account would give. It is tempting to say that capital entering only the well-modelled layers cannot compete away the structural expression of model distrust. Section 4.5 shows that this cannot be the whole story, because in the catastrophe bond market, where that same capital sets both terms directly, structure moved with price and retraced its entire reset, and because capital-market money has begun attaching below the 1-in-25-year return period. What holds the treaty market's structure is not the shape of the capital but the institution through which risk is underwritten: a mandate, centrally imposed, that no seasonal negotiation can undo.

The dampening conjecture, properly restated, is therefore about neither margin in isolation. Alternative capital compresses the price cycle wherever it can bid. Whether it also compresses the structure cycle depends on whether the risk is intermediated by a balance sheet that carries underwriting governance, and the same capital produces opposite structural outcomes on the two sides of that line. The general lesson is that the cycle is not a single oscillation dampened or undamped as a whole. It is at least two coupled processes with different state variables and different frequencies: a fast price oscillation, now further accelerated by capital-market entry and exit, and a slow structural adjustment governed by an institution. Models in the Winter and Gron tradition capture the first. The second requires the corner of Section 3.2 together with the institutional adjustment of Section 3.3, for which the ambiguity and contract-design literatures supply microfoundations (Kunreuther, Hogarth and Meszaros 1993; Jean-Baptiste and Santomero 2000; Cummins and Lewis 2003; Dietz and Walker 2019). Their interaction is a subject for formal work that the reduced form here is designed to invite: structure held while price falls implies margin compression concentrated in frequency-exposed business, which in time regenerates the loss experience that hardens structure further.

6.3. For practitioners and supervisors

For cedents, the durable message is that the reinsurance product has been redefined more persistently than it has been repriced. Budgeting that treats the current softening as a return ticket to pre-2023 structures misreads the mechanism, and retention strategy, through captives, structured solutions, buy-down covers and the cedent's own alternative issuance, is now a permanent rather than cyclical discipline.

For reinsurers, the framework identifies the strategic asset the 2023 reset created. The structure margin is where underwriting information still commands a return not yet competed away by capital-market entry, and analysts have valued the maintenance of current attachment points at the equivalent of 20 to 30 per cent of price (Berenberg, August 2025; Appendix B). Defending it selectively, in the retail form described in Section 5.2, is the observable strategy of the 2025 and 2026 renewals. The analysis also identifies where that asset is vulnerable, and it is not where the market has been looking. Section 4.6 shows that the real position of the attachment turns on the growth of the exposure beneath it, so a mandate expressed in dollars decays without any negotiation at all.

For supervisors and policymakers, the migration of frequency risk below attachments is a protection-gap event in progress. The reinsured share of global catastrophe losses fell to 14 per cent in 2024 against a pre-2023 average of 20 per cent, and the losses of 2024 and 2025 were absorbed to an unusual degree by primary balance sheets and retentions. The resilience question this poses, for insurers of last resort, state schemes and households, belongs on the same agenda as the more familiar capacity questions (Kousky 2019; Moody's Ratings 2026a; Munich Re 2026). Section 6.1 adds a specific and cheap recommendation: collect per-company insured value, as one state already does, and the question of whether structure is holding becomes answerable rather than arguable.

6.4. Falsifiable expectations

The framework stakes out observable ground for the renewals ahead, and the mid-2026 record supplies the live test. If the two-margin account is correct, continued price softening through 2027 should *precede* any general restoration of pre-2023 structures, with structural concessions remaining selective, priced and concentrated in layers where recent experience has been benign. A general reversal of attachment levels while secondary-peril experience remains elevated — the outcome some analysts now forecast for 2027 — would favour a bargaining-power account, and Table 2's coding provides the template on which that adjudication can be run renewal by renewal. Conversely, a major peak-peril capital event would test the price margin's new elasticity. The framework expects alternative capital's post-event re-entry to be faster than traditional capital's historical pace, truncating the post-event hard market on price while moving the corner of Section 3.2 outward again if, and only if, the event again falsifies the prevailing models.

The institutional reading of Section 5.3 sharpens these tests and adds a second, because it makes the two markets a running comparison and not a single observation. The catastrophe bond market has already surrendered its structural reset; the treaty market has not. If the ratchet is institutional, treaty attachment points should continue to lag the capital markets' revealed appetite on the way down, and the gap should close only as underwriting mandates are formally revisited, a process that is minuted inside reinsurers and in part disclosed by them. If instead treaty attachments converge quickly on capital-market appetite through 2027 without any such revision, the mandate will have been a lagging indicator of capital all along, and the institutional account will have failed.

Section 4.6 supplies a third test, and it is the most precise of the three because the threshold is already computed. Insured values at the three Florida specialists rose by 3.2, 5.0 and 6.9 per cent in the year to 31 March 2026. If their retentions hold at nominal 2025-26 levels into the 2026-27 treaty year, their structural position erodes by 3.1, 4.7 and 6.5 per cent respectively, and the proposition that nominal constancy equals structural constancy, which held in the 2025-26 renewal, fails in the next one. If instead retentions rise by at least those amounts, the mandate is being maintained in real terms and not merely in dollars. The measurement will be available from the June 2026 QUASR return and the 2026-27 treaty disclosures, and it requires no judgment about market commentary.

The predictions are uncomfortable for the paper in the useful sense: they can be wrong within months, and the market's own forecasters expect them to be. As Appendix C records, Fitch expects reinsurers at 1 January 2027 to offer "lower attachment points, broader coverage, and protection for more frequent return periods"; S&P expects capacity to press on "coverage provisions and attachment points"; Moody's expects reinsurers to "largely hold the line." The framework sides with Moody's, and does so at stated odds.

7. Conclusion

This paper has argued that the reinsurance underwriting cycle of 2023 to 2026 cannot be understood as a movement in prices, because its defining feature is the divergence between two margins that the cycle literature has treated as one. On the price margin, the episode is the dampening conjecture vindicated: record alternative capital met the first post-reset renewals and produced the fastest softening in a generation. On the structure margin, in treaty reinsurance, the contractual reset of 2023 survived three years of that softening substantially intact. Section 3 derives that divergence instead of assuming it. An ambiguity-averse reinsurer declines the frequency layer at a corner the cost of capital does not move, and the speed at which the observed attachment returns to that corner is set by the body that administers the mandate.

The cross-section tests the claim and does not merely illustrate it, because the four evidence bases do not agree, and their disagreement is informative. Casualty softened on neither

margin: no alternative capital bids there, and the loss models remain in dispute. The catastrophe bond market softened on both. Its expected loss per unit of limit, the measure corresponding to attachment, has returned to where it stood before the reset even as its price round-tripped, and it has begun attaching below the 1-in-25-year return period; its aggregation basis, by contrast, remains reformed. Treaty property-catastrophe reinsurance, and only it, decoupled. The two failures are opposite in kind, and between them they locate the mechanism. Structure held where an institution was charged with holding it, through underwriting mandates that no seasonal negotiation can undo, and gave way where risk was intermediated by capital under no such mandate. The durable finding is therefore not that alternative capital cannot compete away structure. It is that structural discipline is an institutional achievement rather than a market equilibrium, and therefore contingent.

The strongest objection to that reading is that an attachment unchanged in dollars is not an attachment unchanged in substance, and the paper answers it with measurement instead of concession. Normalised by insured values that one state regulator collects and publishes, retentions at three Florida specialists rose relative to their own exposure across the softening renewal, by between 1.5 and 26 per cent, and in every case exceeded the level that would have left the structural position unchanged. Two other candidate normalisers were tested and rejected on stated grounds. The measurement is narrow, covering three companies and two treaty years, and it answers one specific objection without pretending to be a market-wide series. It is nonetheless the difference between asserting that structure held and showing where, for whom, and by how much.

That contingency is not hypothetical. As this paper was completed, the market's own forecasters were divided on whether the attachment would survive the renewal of January 2027, with two rating agencies expecting it to give and one expecting it to hold. On the exposure arithmetic of Section 4.6, retentions held at nominal 2025-26 levels will erode in real terms at the next renewal by between 3 and 7 per cent, so that even a market that concedes nothing in negotiation will concede something in substance. A framework whose central object may be dismantled within months of publication is in an uncomfortable position, but it is the right kind of discomfort: the claim is specific enough to fail, the evidence that would fail it is public and dated, and Table 2's coding and Table 6's arithmetic provide the instruments on which the adjudication can be run. Whichever way the January 2027 renewal resolves, the distinction between the two margins will be needed to describe it, which is the paper's more basic point and the one that does not depend on the outcome.

The limitations are those of the method. The structure margin is observed through documents, because no continuous public series of it exists. The broker record gives direction, not magnitude. The filings panel reaches only the stock-insurer fifth of the United States homeowners market, and non-United States treaty terms enter only through the intermediaries' aggregates. The exposure normalisation reaches three companies in one state. The framework is calibrated against one episode, and its adjustment-speed asymmetry, while identified

in the cross-section and consistent with the governance evidence, awaits formal estimation when structure data of sufficient history accumulate. The research programme this implies is specific: terms-of-coverage indices built from supervisory, filing and broker data, with the panel assembled here as a first instalment; the extension of that panel to non-United States disclosures; the collection of per-company exposure beyond Florida, without which the real-terms question cannot be asked elsewhere; a peril-level test of the belief channel, splitting catastrophe bond issuance into single-peril bonds on well-modelled peak perils and multi-peril bonds including severe convective storm, wildfire and flood, which the deal-level disclosure supports and which would discriminate between the belief and mandate accounts in a way the market-level comparison cannot; the joint estimation of the two adjustment processes; and the incorporation into capacity-constraint models of an institutional adjustment speed. The cycle has not disappeared with the arrival of the capital markets. It has moved to a margin where the existing literature is not yet looking, and where the returns to looking are correspondingly high.

Data availability. The paper uses no proprietary or non-public data. Every market observation is drawn from the published sources cited. Appendix A lists each quantitative observation used in Section 4 with its source and observation date, Appendix B gives the verbatim quotation behind every structural classification in Table 2, Appendix C reproduces the uncoded September 2026 commentary, and an evidence workbook accompanying the paper reproduces the full register — including the filing citation and URL behind every cell of Table 3 and the exposure figures behind Table 6 — to permit independent verification. Web sources were accessed on 13 September 2026 unless another access date is recorded against the entry; the Appendix B quotation register was compiled on 18 August 2026 and extended on 13 September 2026.

Author note

The reading of the market record offered in this paper is informed by a decade of treaty reinsurance underwriting practice. All claims about market terms rest on the published sources cited; no non-public information is used. I thank two anonymous referees for comments that materially improved the paper. The author declares no competing interests and received no funding for this research, and has no consulting relationships, advisory roles or financial holdings related to the reinsurance intermediaries, rating agencies or data services whose published reports are cited.

References

AM Best (2024a) *Best's Special Report: Global Reinsurers' Return on Equity Jumped to 22% in 2023; Losses From 2024 Hurricanes Unlikely to Soften Market*, Oldwick, NJ: A.M. Best Company, 31 October 2024.

AM Best (2024b) *Best's Market Segment Report: Florida Property Insurance Market Improves; Reinsurance Dependency Remains High*, Oldwick, NJ: A.M. Best Company, 30 May 2024.

AM Best (2025) *Best's Commentary: Capacity Grows at January 1 Reinsurance Renewals, but Underwriting Discipline Remains*, Oldwick, NJ: A.M. Best Company, 29 January 2025.

AM Best (2026) *Market Segment Outlook: Global Reinsurance*, Oldwick, NJ: A.M. Best Company, 20 January 2026.

Aon (2023) *Reinsurance Market Dynamics: January 2023*, Chicago: Aon plc, January 2023.

Aon (2025a) *Reinsurance Market Dynamics: April 2025 Renewal*, Chicago: Aon plc, April 2025.

Aon (2026a) *Reinsurance Market Dynamics: January 2026 Renewal*, Chicago: Aon plc, January 2026.

Aon (2026b) *Reinsurance Market Dynamics: April 2026 Renewal*, Chicago: Aon plc, April 2026.

Aon (2026c) *Reinsurance Market Dynamics: Midyear 2026 Renewal*, Chicago: Aon plc, July 2026.

Aon Securities (2017) *Insurance-Linked Securities Annual Report 2017*, Chicago: Aon Securities, September 2017.

Aon Securities (2025) *Insurance-Linked Securities (ILS) Annual Report — September 2025*, Chicago: Aon Securities, 28 August 2025.

Artemis (2017–2026) *Catastrophe Bond & ILS Market Reports*, quarterly series, Q1 2017 through Q2 2026, Artemis.bm. [Thirty-eight reports; the quarter-by-quarter series of average multiple, expected loss and coupon drawn from them, with the verbatim sentence and report URL behind each value, is reproduced in the evidence workbook.]

Artemis (2017) 'Outstanding cat bond market favours aggregate cover for first time', Artemis.bm, 19 January 2017.

Artemis (2018) 'Hours clause questions raised over California wildfire reinsurance claims', Artemis.bm, 7 December 2018.

Artemis (2019) 'Trapped ILS collateral shrinks in 2019, as losses begin to crystalise', Artemis.bm, 11 September 2019.

Artemis (2021) 'Aggregate retro capacity "extremely scarce" on lower ILS capital',

Artemis.bm, 14 December 2021.

Artemis (2022a) ‘Attachments doubling, hours clause shrinking. US renewals to close with holes’, Artemis.bm, 20 December 2022.

Artemis (2022b) *Q4 2021 Catastrophe Bond & ILS Market Report*, Artemis.bm, January 2022.

Artemis (2023) ‘Catastrophe bond market exposure to aggregate covers shrinking fast’, Artemis.bm, 22 December 2023.

Artemis (2024) *Q4 2023 Catastrophe Bond & ILS Market Report*, Artemis.bm, January 2024.

Artemis (2025) ‘Cat bond market yield falls to 8.81% at Oct 31st 2025, risk spreads lowest since Nov 2019’, Artemis.bm, 4 November 2025.

Artemis (2026a) *Q4 2025 Catastrophe Bond & ILS Market Report*, Artemis.bm, January 2026.

Artemis (2026b) ‘Catastrophe bond market records that were broken in 2025’, Artemis.bm, 8 January 2026.

AXA XL Re (2026) Remarks of Renaud Guidée, Chief Executive Officer, at the Rendez-Vous de Septembre [reported in *Reinsurance News*, 6 September 2026].

Berger, L. A., Cummins, J. D., and Tennyson, S. (1992) ‘Reinsurance and the liability insurance crisis’, *Journal of Risk and Uncertainty*, 5(3), 253–272.

Born, P. H., and Viscusi, W. K. (2006) ‘The catastrophic effects of natural disasters on insurance markets’, *Journal of Risk and Uncertainty*, 33(1), 55–72.

Boyer, M. M., Jacquier, E., and Van Norden, S. (2012) ‘Are underwriting cycles real and forecastable?’, *Journal of Risk and Insurance*, 79(4), 995–1015.

Braun, A. (2016) ‘Pricing in the primary market for cat bonds: new empirical evidence’, *Journal of Risk and Insurance*, 83(4), 811–847.

Choi, S., Hardigree, D., and Thistle, P. D. (2002) ‘The property/liability insurance cycle: a comparison of alternative models’, *Southern Economic Journal*, 68(3), 530–548.

Citizens Property Insurance Corporation (2024) *Florida Residential Property Market Share Report*, data as of 31 December 2024, Tallahassee, FL.

Citizens Property Insurance Corporation (2025) *2025 Risk Transfer Program: Layer Charts*, Board of Governors materials, 25 June 2025, Tallahassee, FL.

Cole, C. R., and McCullough, K. A. (2006) ‘A reexamination of the corporate demand for reinsurance’, *Journal of Risk and Insurance*, 73(1), 169–192.

Citizens Property Insurance Corporation (2026a) *Florida Residential Property Market Share Report, March 31, 2024*, Tallahassee: Citizens Property Insurance Corporation. [Reproduces Florida Office of Insurance Regulation QUASR data.]

Citizens Property Insurance Corporation (2026b) *Florida Residential Property Market Share Report, March 31, 2025*, Tallahassee: Citizens Property Insurance Corporation.

Citizens Property Insurance Corporation (2026c) *Florida Residential Property Market Share Report, March 31, 2026*, Tallahassee: Citizens Property Insurance Corporation.

Cummins, J. D., and Lewis, C. M. (2003) ‘Catastrophic events, parameter uncertainty and the breakdown of implicit long-term contracting: the case of terrorism insurance’, *Journal of Risk and Uncertainty*, 26(2–3), 153–178.

Cummins, J. D., and Outreville, J. F. (1987) ‘An international analysis of underwriting cycles in property-liability insurance’, *Journal of Risk and Insurance*, 54(2), 246–262.

Cummins, J. D., and Trainar, P. (2009) ‘Securitization, insurance, and reinsurance’, *Journal of Risk and Insurance*, 76(3), 463–492.

Cummins, J. D., and Weiss, M. A. (2009) ‘Convergence of insurance and financial markets: hybrid and securitized risk-transfer solutions’, *Journal of Risk and Insurance*, 76(3), 493–545.

Dietz, S., and Walker, O. (2019) ‘Ambiguity and insurance: capital requirements and premiums’, *Journal of Risk and Insurance*, 86(1), 213–235.

Doherty, N. A., and Garven, J. R. (1995) ‘Insurance cycles: interest rates and the capacity constraint model’, *Journal of Business*, 68(3), 383–404.

Doherty, N. A., and Smetters, K. (2005) ‘Moral hazard in reinsurance markets’, *Journal of Risk and Insurance*, 72(3), 375–391.

Fitch Ratings (2025) *Global Reinsurance Sector Outlook Revised to Deteriorating*, London: Fitch Ratings, September 2025 [reported in *Insurance Journal*, 3 September 2025].

Fitch Ratings (2026a) Peer credit analysis of Europe’s four largest reinsurers, London: Fitch Ratings, March 2026 [reported in *Reinsurance News*, 20 March 2026].

Fitch Ratings (2026b) B. C. Schneider, ‘Reinsurance market commentary ahead of the January 2027 renewals’, London/Chicago: Fitch Ratings [bylined article, *Insurance Journal*, 8 September 2026].

Froot, K. A. (2001) 'The market for catastrophe risk: a clinical examination', *Journal of Financial Economics*, 60(2–3), 529–571.

Froot, K. A., and O'Connell, P. G. J. (1999) 'The pricing of U.S. catastrophe reinsurance', in K. A. Froot (ed.) *The Financing of Catastrophe Risk*, Chicago: University of Chicago Press, 195–232.

Gallagher Re (2025) *Natural Catastrophe and Climate Report 2024*, London: Gallagher Re, 27 February 2025.

Gallagher Re (2026) *Natural Catastrophe and Climate Report for 2025*, London: Gallagher Re, January 2026.

Gallagher Securities (2026) Catastrophe bond market analyses [reported by Artemis.bm, 5 January 2026 and 8 April 2026], New York: Gallagher Securities.

Geneva Association (2020) *Social Inflation: Navigating the Evolving Claims Environment*, Zurich: The Geneva Association, December 2020.

Gibson, R., Habib, M. A., and Ziegler, A. (2014) 'Reinsurance or securitization: the case of natural catastrophe risk', *Journal of Mathematical Economics*, 53, 79–100.

Gron, A. (1994) 'Capacity constraints and cycles in property-casualty insurance markets', *RAND Journal of Economics*, 25(1), 110–127.

Gürtler, M., Hibbeln, M., and Winkelvos, C. (2016) 'The impact of the financial crisis and natural catastrophes on CAT bonds', *Journal of Risk and Insurance*, 83(3), 579–612.

Guy Carpenter (2020) 'January 1, 2020 reinsurance renewals: retrocession', New York: Guy Carpenter & Company, January 2020.

Guy Carpenter (2021) 'Rate movements moderated by availability of capacity as negotiations center on pricing and terms at January 1, 2021 renewals', New York: Guy Carpenter & Company, January 2021.

Guy Carpenter (2023a) 'Chart: Guy Carpenter Global Property Catastrophe Rate on Line Index, 2000–2023', New York: Guy Carpenter & Company, January 2023.

Guy Carpenter (2023b) 'A look at the Guy Carpenter Rate on Line Indexes at the January 2023 reinsurance renewal', New York: Guy Carpenter & Company, February 2023.

Guy Carpenter (2024a) 'Chart: Guy Carpenter Global Property Catastrophe Rate on Line Index, 2000–2024', New York: Guy Carpenter & Company, January 2024.

Guy Carpenter (2024b) 'January 1, 2024 reinsurance renewals reflect a motivated market

with increasing capital', press release, New York: Guy Carpenter & Company, 28 December 2023.

Guy Carpenter (2025a) 'Strong reinsurer appetite drives excess property catastrophe capacity at January 1', press release, New York: Guy Carpenter & Company, 30 December 2024.

Guy Carpenter (2026a) 'Chart: January 1, 2026 Global Property Catastrophe Rate on Line Index', New York: Guy Carpenter & Company, December 2025; and January 2026 renewal statements [reported in *Reinsurance News* and *Insurance Journal*, 30 December 2025].

Guy Carpenter (2026b) Global Property Catastrophe Rate on Line Index, mid-year 2026 update [reported in *Insurance Journal*, 2 July 2026; index history compiled at Artemis.bm, accessed 18 August 2026].

Harrington, S. E., and Danzon, P. M. (1994) 'Price cutting in liability insurance markets', *Journal of Business*, 67(4), 511–538.

Harrington, S. E., Niehaus, G., and Yu, T. (2013) 'Insurance price volatility and underwriting cycles', in G. Dionne (ed.) *Handbook of Insurance*, 2nd edn, New York: Springer.

Hogarth, R. M., and Kunreuther, H. (1989) 'Risk, ambiguity, and insurance', *Journal of Risk and Uncertainty*, 2(1), 5–35.

Howden (2023) *The Great Realignment*, renewal report at 1.1.2023, London: Howden Group, 1 January 2023.

Howden (2024) *A New World*, renewal report at 1.1.2024, London: Howden Group Holdings, January 2024.

Howden (2025) *Past the Pricing Peak*, renewal report at 1.1.2025, London: Howden Group Holdings, January 2025.

Howden Re (2026) *Re-balancing*, renewal report at 1.1.2026, London: Howden Group Holdings, 2 January 2026.

Jaffee, D. M., and Russell, T. (1997) 'Catastrophe insurance, capital markets, and uninsurable risks', *Journal of Risk and Insurance*, 64(2), 205–230.

Jean-Baptiste, E. L., and Santomero, A. M. (2000) 'The design of private reinsurance contracts', *Journal of Financial Intermediation*, 9(3), 274–297.

Kousky, C. (2019) 'The role of natural disaster insurance in recovery and risk reduction', *Annual Review of Resource Economics*, 11, 399–418.

Kousky, C., and Medders, L. (2024) *The Evolution of Florida's Public-Private Approach to*

Property Insurance, Tallahassee, FL: Florida Policy Project, April 2024.

Kunreuther, H., Hogarth, R. M., and Meszaros, J. (1993) 'Insurer ambiguity and market failure', *Journal of Risk and Uncertainty*, 7(1), 71–87.

Lakdawalla, D., and Zanjani, G. (2012) 'Catastrophe bonds, reinsurance, and the optimal collateralization of risk transfer', *Journal of Risk and Insurance*, 79(2), 449–476.

Lane, M., and Mahul, O. (2008) 'Catastrophe risk pricing: an empirical analysis', World Bank Policy Research Working Paper 4765, Washington, DC: World Bank.

Meier, U. B., and Outreville, J. F. (2006) 'Business cycles in insurance and reinsurance: the case of France, Germany and Switzerland', *Journal of Risk Finance*, 7(2), 160–176.

Moody's Ratings (2026a) Commentary on January 2026 reinsurance renewals [reported by Artemis.bm, 7 January 2026], New York: Moody's Ratings.

Moody's Ratings (2026b) Reinsurance commentary at the Rendez-Vous de Septembre [reported in *Reinsurance News*, 2 September 2026], New York: Moody's Ratings.

MS Re (2026) Remarks of Jörg Bruniecki, Group Chief Underwriting Officer, at the Rendez-Vous de Septembre [reported in *Reinsurance News*, 8 September 2026].

Murfin, J. (2012) 'The supply-side determinants of loan contract strictness', *Journal of Finance*, 67(5), 1565–1601.

Munich Re (2025) 'Climate change is showing its claws: the world is getting hotter, resulting in severe hurricanes, thunderstorms and floods', media information, Munich: Munich Re, 9 January 2025.

Munich Re (2026) 'Climate change presses on: devastating wildfires and intense thunderstorms exacerbate losses for insurers', media information, Munich: Munich Re, 13 January 2026.

National Association of Insurance Commissioners (2025) *2024 Market Share Data: Property/Casualty Insurance*, Kansas City, MO: NAIC, March 2025.

Niehaus, G., and Terry, A. (1993) 'Evidence on the time series properties of insurance premiums and causes of the underwriting cycle: new support for the capital market imperfection hypothesis', *Journal of Risk and Insurance*, 60(3), 466–479.

S&P Global Ratings (2026) Global reinsurance sector commentary ahead of the 2027 renewals [reported by Artemis.bm, 6 September 2026], New York: S&P Global Ratings.

Stiglitz, J. E., and Weiss, A. (1981) 'Credit rationing in markets with imperfect information',

American Economic Review, 71(3), 393–410.

Swiss Re (2026) 'Wildfires, storms, floods contribute to record 92% of global insured losses in 2025', press release, Zurich: Swiss Re Institute, 19 March 2026.

Swiss Re Capital Markets (2026) *ILS Market Insights*, Zurich: Swiss Re, February 2026.

Venezian, E. C. (1985) 'Ratemaking methods and profit cycles in property and liability insurance', *Journal of Risk and Insurance*, 52(3), 477–500.

Weiss, M. A. (2007) 'Underwriting cycles: a synthesis and further directions', *Journal of Insurance Issues*, 30(1), 31–45.

Winter, R. A. (1994) 'The dynamics of competitive insurance markets', *Journal of Financial Intermediation*, 3(4), 379–415.

Company filings. The Form 10-K and Form 8-K disclosures underlying Table 3 are cited individually, with accession numbers, filing dates, and URLs, in the evidence workbook accompanying this paper; all were retrieved from the U.S. Securities and Exchange Commission's EDGAR system, accessed 18 August 2026.

Appendix A: Documentary Observations Used in Section 4

Each quantitative observation used in the text, with its value, source, and observation date. All web sources accessed 13 September 2026 unless another access date is recorded against the row in the accompanying evidence workbook, which also gives the URL for every row.

Observation	Value	Source (publication date; as-of date)
Global property-catastrophe rate-on-line index, January 2023	+27.5%; sixth consecutive annual increase; cumulative rise since 2017 approx. 65%; "primarily driven by pricing and attachment point adjustments in the US and Europe"; US index +31.3%; "the average change in ROL was tempered by broad-based increases in retentions"	Guy Carpenter (2023a, 2023b) (Jan–Feb 2023)

Observation	Value	Source (publication date; as-of date)
Risk-adjusted global property-catastrophe rate change, January 2023	+37% (largest increase at 1.1 since 1992)	Howden (2023)
Rate-on-line index, January 2024	+5.4% (index peak); US +5.25%; Europe +7.6%	Guy Carpenter (2024a)
Rate-on-line index, January 2025 / mid-year 2025	−6.6% / −8.1% year to date	Guy Carpenter (2025a); Insurance Journal (6 Jan 2025); Artemis index page
Rate-on-line index, January 2026	−12% (US −12%; Europe −15%; APAC −12%); "reinsurers continue to benefit from high attachment points"	Guy Carpenter (2026a); Reinsurance News (30 Dec 2025)
Rate-on-line index, year to July 2026	−16%; "the biggest annual decline since the late 1990's"; 23% below 2024 peak; approx. 32% above 2017 low	Guy Carpenter (2026b); Artemis index page; Insurance Journal (2 Jul 2026)
Risk-adjusted rate change, January 2026	−14.7% global property catastrophe, "the largest year-on-year reduction since 2014"; retrocession −12.5% to −21%	Howden Re (2026)
Total reinsurance capital	$670bn (YE2023); $715bn (YE2024); $735bn (30 Jun 2025); $760bn (30 Sep 2025); record $785bn (31 Dec 2025); $790bn (31 Mar 2026)	Aon *Reinsurance Market Dynamics* editions (2024–2026); Aon (2026b, 2026c)

Observation	Value	Source (publication date; as-of date)
Alternative capital	$97bn (2018); $91–97bn flat range (2019–2022); record $121bn (30 Jun 2025); $124bn (30 Sep 2025); $136bn, +18% (31 Dec 2025); $141bn (31 Mar 2026)	Aon estimates via Artemis (2018–2026); Aon Securities (2025); Aon (2026a, 2026b, 2026c)
Definitional contrast on capital	Guy Carpenter/AM Best "dedicated reinsurance capital": $607bn at YE2024, growing approx. 9% in 2025 (narrower perimeter than Aon's total)	Guy Carpenter press releases (Dec 2024; Dec 2025)
Trapped ILS collateral, 2018–2019	estimates $15–25bn	Artemis (2019), citing JLT and Aon estimates
Aggregate retrocession capacity, January 2022	approx. −75%, to around $1.5bn of limit from roughly $6bn	Artemis (2021)
Catastrophe bond market, 2025	issuance $25.6bn (+45% on 2024's $17.7bn); outstanding $61.3bn at year-end (+24%); 122 transactions; record 15 first-time sponsors; almost 76% indemnity-trigger share; property-cat 93% of issuance	Artemis (2026a, 2026b)
Catastrophe bond average multiple (price)	2.58 (2021); 3.38 (2022); 4.54 (2023, highest in over 20 years); 3.71 (2024); 2.44 (Q4 2025, lowest since Q3 2021); 2.61 (Q1 2026); 2.29 (Q2 2026); Gallagher Securities: 2.44× at Q4 2025, 2.29× outstanding-market multiple at 27 Mar 2026	Artemis quarterly reports (2022–2026); Gallagher Securities (2026)
Catastrophe bond average expected loss (structure)	2.5% (2020); 2.44% (2021); approx. 2.0% (2023, derived); approx. 2.8% (Q4 2025, derived); 2.73% (Q1 2026)	Artemis quarterly reports; derivations shown in evidence workbook
Aggregate share of catastrophe bond market	64% of limit placed (years to Jun 2017 and Jun 2018); approx. 60% of outstanding at late-2019 peak; 34% of 2023 issuance; 41.7% of outstanding (Dec 2023); 42% of 2025 issuance	Aon Securities (2017); Artemis (2017, 2023, 2026a)

Observation	Value	Source (publication date; as-of date)
Secondary-market cat bond spreads	below 5% in Oct 2025, first time since Nov 2019	Artemis (2025), Plenum data
Insured natural-catastrophe losses, 2024	$320bn overall / $140bn insured (Munich Re); $137bn (Swiss Re); $154bn, US share 76% (Gallagher Re)	Munich Re (2025); Gallagher Re (2025)
Insured natural-catastrophe losses, 2025	$224bn overall / $108bn insured vs ten-year inflation-adjusted average $107bn (Munich Re); $107bn, secondary perils a record 92% (Swiss Re); $129bn, US share 78% (Gallagher Re); Los Angeles wildfires approx. $53bn overall / $40bn insured, "most expensive wildfire disaster to date"	Munich Re (2026); Swiss Re (2026); Gallagher Re (2026)
Reinsured share of global catastrophe losses, 2024	approx. 14%, down from pre-2023 average of 20%	Guy Carpenter, reported in Insurance Journal (30 Dec 2024)
Total reinsurance capital and alternative capital, mid-2026	Record USD 800bn total; USD 144.5bn alternative capital (Aon, *Snapshot Guide to the Reinsurance Renewal*). Other perimeters differ and are recorded rather than reconciled: Gallagher Re USD 688bn total with USD 147bn alternative; Marsh Re/AM Best forecast USD 705bn dedicated capital at year-end 2026.	Aon (4 September 2026); Gallagher Re, Reinsurance Market Report, Half-Year 2026 (September 2026); Marsh Re (1 September 2026)
Expected 1 January 2027 property-catastrophe pricing	Approximately −10% on risk-adjusted rates was the consensus expectation reported at the September 2026 Rendez-Vous; S&P expected reductions that "could match those seen in 2026"; no agency published a numerical range.	S&P Global Ratings (2026); KBW, reported at Artemis.bm (11 September 2026)

Observation	Value	Source (publication date; as-of date)
Global reinsurance sector outlooks for 2027	AM Best stable; Moody's stable; S&P stable; Fitch deteriorating (second consecutive year).	AM Best (1 September 2026); Moody's Ratings and Fitch Ratings, reported at Artemis.bm (4 September 2026); S&P Global Ratings (2026)
Reinsurer profitability	ROE approx. 22% in 2023 (global reinsurers); Europe's big four: combined ratio 85% (2024), 79.8% (2025); record average ROE 19.6% (2025); sector outlook revised to deteriorating (Sep 2025)	AM Best (2024a); Fitch Ratings (2025, 2026)
Citizens (FL) risk transfer	$2.54bn placed vs $3.64bn target (2022); $5.38bn (2023); $3.56bn (2024); $4.49bn (2025); $2.82bn (2026); net rate on line 8.96% → 12.69% → 13.44% → 11.74% → 9.52%; new 2026 placements approx. −30% year-on-year	Citizens (2025) board layer charts; Artemis reporting of board materials (2022–2026)
CEA risk transfer	peak $9.6bn (Jul 2021); $8.2bn (Jan 2023); $7.9bn (YE2025); board vote of March 2022 lowered target band from 1-in-400/550 to 1-in-350/500; claim-paying capacity held near $19–20bn throughout	CEA press releases; Artemis reporting (2021–2026)
TWIA programme	risk transfer $1.93bn (2021) to $4.23bn (2025) at 1-in-100 statutory standard; rate on line 6.75% (2022) to 9.84% (2025); 2026: statutory mandate cut to 1-in-50 (HB 3689), risk transfer $2.28bn	Artemis and Reinsurance News reporting of TWIA board materials (2021–2026)
US home-owners market shares, 2024	total DWP $172.7bn; panel groups combined 21.0%; seven of top ten writers are mutuals/reciprocals (45.9% of DWP)	NAIC (2025)
Florida market shares	Citizens 13% and Universal 7% of personal-residential premium; HCI 3%; Heritage 3%; American Coastal 30% of commercial-residential premium; FL specialists' ceded reinsurance leverage 514.7% vs 59.1% composite	Citizens (2024); AM Best (2024b)

Exposure observations used in Section 4.6 and Table 6. Total insured value by company, from Florida Office of Insurance Regulation QUASR returns as reproduced in Citizens Property Insurance Corporation, *Florida Residential Property Market Share Reports*. All figures are as at 31 March of the stated year and are reported by Citizens in thousands of United States dollars.

Company	31 Mar 2024	31 Mar 2025	31 Mar 2026	Reporting table
Universal Property & Casualty	$184,617,940	$181,936,436	$187,788,819	Top 10 insurers by TIV, all personal and commercial residential policies
Heritage Property & Casualty	$102,017,889	$101,307,240	$106,355,969	Top 10 insurers by TIV, all personal and commercial residential policies
American Coastal Insurance Company	$53,938,897	$62,445,803	$66,763,493	Top 20 insurers by TIV, Florida commercial residential

Citizens Property Insurance Corporation (2026a, 2026b, 2026c) in the reference list. Retentions paired with these figures are those of Table 3 and are sourced per cell in the evidence workbook, sheet RealTerms_Exposure.

Appendix B: Quotation Register for the Structural Classifications of Table 2

Verbatim quotations supporting each classification, by renewal season and structural element (E1 attachment points/retentions; E2 aggregate covers; E3 exclusions/wordings; E4 hours clauses; E5 event definitions/concurrency; E6 reinstatements; E7 proportional/retrocession). Bracketed insertions are the author's. Publisher and publication date follow each quotation; the URL for every entry is given in the accompanying evidence workbook. All accessed 18 August 2026; the September 2026 addendum, 13 September 2026.

Season — element	Quotation	Source
Soft market — E3/E4	"The analysts also expect further broadening of terms and conditions (such as the hours clause extension) and more inclusion of other risks such as cyber and terrorism… Both of these are considered to be more dangerous to reinsurers than rate declines alone."	KBW analysts, via Artemis.bm, 11 Dec 2014
Soft market — E4	"The average hours clause for reinsurance contracts was typically 168 hours (7 days) [but] many have now had these terms extended in some cases to as long as 504 hours (21 days)."	Artemis.bm, 7 Dec 2018
Soft market (retrospective) — E2/E4	"The widening of coverage away from explicitly named perils… The hours clause was an area that evidenced this, as well as the proliferation of aggregate covers with low deductibles."	Goldman Sachs, via Artemis.bm, 21 Sep 2023
Jan 2019 — E7	"At the end of last year estimates for how much ILS and collateralised reinsurance market collateral was trapped or impaired ranged from around $18 billion to as much as $25 billion."	Artemis.bm, 11 Sep 2019
Jan 2020 — E2	"Capacity dedicated to earnings protection (for example, pillared and aggregate transactions) was particularly scarce at January 1, 2020."	Guy Carpenter, Jan 2020
Jan 2021 — E3	"Communicable disease exclusion wording was a key discussion area on every property renewal worldwide."	Guy Carpenter, Jan 2021
Jan 2022 — E2	"Aggregate retro capacity may have shrunk by roughly 75%, dropping to around $1.5 billion of limit, down from roughly $6 billion."	Artemis.bm, 14 Dec 2021
Jan 2022 — E1	"Structure adjustments, particularly on retentions, were more prevalent in heavier loss-impacted sectors."	Guy Carpenter, 1 Jan 2022
Jan 2023 — E1	"Retention levels, which in several cases have been stable for much of the last decade, rose significantly (in the U.S. especially)."	Howden, *The Great Realignment*, 1 Jan 2023, 16

Season — element	Quotation	Source
Jan 2023 — E1	"US attachment points, at this renewal season, are expected to coalesce around the 1-in-10 year event level [representing] a 100% and sometimes more increase for many cedents."	Artemis.bm, 20 Dec 2022
Jan 2023 — E1	"[Renewal outcomes included] retentions increasing as reinsurers sought to move further away from frequency layers [with] terms and conditions also being tightened."	Aon, press release, 19 Jan 2023
Jan 2023 — E2/E7	"Higher retentions, tighter terms and reduced frequency coverage (i.e. aggregates, lower excess-of-loss layers, quota shares)."	Howden, 1 Jan 2023, 15
Jan 2023 — E3	"Named natural catastrophe perils prevailed in most cases, meaning any remnants of non-natural catastrophe coverage ceased at 1 January 2023."	Howden, 1 Jan 2023, 13
Jan 2023 — E3	"Terrorism and strikes, riots and civil commotion (SRCC) in particular came under scrutiny."	Howden, 1 Jan 2023
Jan 2023 — E3 (limit of the reset)	"Coverage changes that presented the most extreme erosion of value were not widely taken up… marketwide adjustments were limited to terror and strike, riot and civil commotion (SRCC) clauses."	Guy Carpenter, via Carrier Management, 3 Jan 2023
Jan 2023 — E4	"Reinsurance contracts typically had 168 hour (7 days) clauses for many years, but of late these have often been extended, in some cases to as long as 504 hours (21 days). [At this renewal] a reduction, which we understand to be relatively slight [is expected]."	Artemis.bm, 20 Dec 2022
Jan 2023 — E6	"Higher attachment points, more stringent terms, paid reinstatements and substantial rate increases."	Howden, 1 Jan 2023
Jan 2023 — price/structure interaction	"The average change in ROL was tempered by broad-based increases in retentions as programs moved further away from loss frequency."	Guy Carpenter, Feb 2023

Season — element	Quotation	Source
Jan 2023 (retrospective) — E1/E4	"Attachment points doubling in some cases, while hours clauses were shortened."	Goldman Sachs, via Artemis.bm, 21 Sep 2023
Mid-2023 — E1/E2	"Increased capacity remained highly disciplined around attachment points, pricing and coverage… lower-layer capacity and aggregates remained highly constrained… cedents retained more risk rather than accepting unfavorable terms."	Guy Carpenter, press release, 5 Jul 2023
Jan 2024 — E1	"Retention levels largely held steady despite growth in underlying portfolios, and terms were more consistent within contracts."	Guy Carpenter, press release, 28 Dec 2023
Jan 2024 — E2	"Low-attaching occurrence layers and aggregate covers continued to suffer from a lack of supply."	Howden, *A New World*, Jan 2024
Jan 2024 — E1/E2/E3	"2023's 'step changes' in property catastrophe reinsurance rates, attachment points, and terms and conditions have broadly held… reinsurers remain uninterested in assuming the frequency risk previously embedded in both low attachment points and aggregate covers."	KBW, via Artemis.bm, 6 Mar 2024
Mid-2024 — persistence forecast	"Pricing is likely to perpetually recalibrate, however, program restructuring is likely to endure, particularly with regard to attachment points."	David Priebe, Chairman, Guy Carpenter, via Reinsurance News, 4 Sep 2024
Jan 2025 — E1	"Continued reinsurer discipline around property catastrophe program attachment points and pricing… Given the increased catastrophe attachment points of recent renewals, supplemental purchases, such as frequency protection and other retention buydown options, play an important role."	Guy Carpenter, press release, 30 Dec 2024

Season — element	Quotation	Source
Jan 2025 — E1	"Attachment points remained largely unchanged and capacity for frequency cover continued to be at a premium."	Howden, *Past the Pricing Peak*, Jan 2025, 28
Jan 2025 — E1	"Crucially reinsurers basically held the line on [maintaining higher] attachment points… They've learned the lesson of the last couple of years — that having retentions at a proper level is what is actually driving their profitability."	James Vickers, Gallagher Re, via Insurance Journal, 27 Jan 2025
Jan 2025 — E1/E3	"We expect that reinsurers will continue to hold strong on attachment point levels, and terms and conditions, which are their main tools to exclude secondary and unmodelled perils from reinsurance treaties."	AM Best, 29 Jan 2025
Jan 2025 — E2/E6 (selective return)	"More reinsurers were prepared to support lower level occurrence and aggregate protections [and buyers obtained] the near elimination of differential terms and other improvements, such as pre-paid reinstalment provisions."	Gallagher Re, via Reinsurance News, 2 Jan 2025
Jan 2025 — loss-share consequence	"In 2024, global industry catastrophe losses reached nearly $130 billion, with the estimated reinsured share of these losses falling to 14%, down from the pre-2023 average of 20%."	Guy Carpenter, via Insurance Journal, 30 Dec 2024
Mid-2025 — E1/E2/E3	"[Reinsurers were] more willing to provide protection lower down on programs… Products that were not widely available at previous recent renewals were reportedly up for discussion, including aggregate covers."	Aon, via Reinsurance News, 30 Jun 2025

Season — element	Quotation	Source
Pre-Jan 2026 — E1 (value of attachments)	"We believe that strong attachment points are the key to the profitability of the reinsurers, and we estimate that maintaining their current level rather than allowing them to be cut is equivalent to a 20-30% benefit in terms of pricing."	Berenberg, via Artemis.bm, 4 Aug 2025
Pre-Jan 2026 — E1 (counter-view)	"I would say that reinsurers are going to loosen the standards… So, we will be surprised if there is not a lowering in attachment points on property cat going forward."	Manuel Arrivé, Fitch Ratings, via Reinsurance News, 7 Sep 2025
Jan 2026 — E1	"Reinsurers continue to benefit from high attachment points, reflected in their lower share of catastrophe losses. This, combined with abundant capacity, is driving competitive pricing conditions."	Guy Carpenter, via Reinsurance News, 30 Dec 2025
Jan 2026 — E1/E3	"Pricing back to levels last seen around four years ago, albeit with comparatively higher attachments and tighter terms… Attachments remain elevated by historical standards, terms and conditions are tighter; capital is being deployed selectively."	Howden Re, *Re-balancing*, 2 Jan 2026
Jan 2026 — E1/E2/E3	"Notably, the significant improvements in terms and conditions that reset following the 2023 renewals are proving durable… Aggregate/frequency products have re-emerged more plentifully than last year but have not returned broadly to pre-hard-market structures." [Also, p. 1: "reinsurers remain disciplined with terms and conditions and attachment points largely intact."]	AM Best, *Market Segment Outlook: Global Reinsurance*, 20 Jan 2026, 1–2

Season — element	Quotation	Source
Jan 2026 — E1	"Reinsurers are likely to stand firm on high attachment points for insurers' excess of loss (XoL) treaties for 2026 renewals… We expect that insurers will continue to retain a large proportion of losses from secondary perils and will remain exposed to earnings volatility as reinsurers refrain from taking on such risks."	Moody's Ratings, via Artemis.bm, 7 Jan 2026
Jan 2026 — E5	"Clients achieved more concurrency in contract coverage across most regions. In the US, the majority of non-concurrencies introduced in the hard market of 2023 were eliminated."	Guy Carpenter, via Reinsurance News, 30 Dec 2025
Jan 2026 — E3/E7 (retro)	"There was more limited movement on terms, with retrocessionaires typically unwilling to broaden coverage to include non-natural perils such as SRCC and terrorism."	Howden Re, via Artemis.bm, 2 Jan 2026
Jan 2026 — casualty	"[US casualty] clients continue to remain disciplined with respect to limit management, terms and conditions [with] rate increases of approximately 10% on [lower-attaching excess of loss] programs."	Guy Carpenter, via Reinsurance News, 2 Jan 2026
Apr 2026 — E1/E2	"While core retentions were broadly stable or slightly lower, favorable market conditions allowed buyers to reassess risk appetite and optimize program design… Many insurers used the April 1 renewal to purchase retention buy-downs and additional frequency protection."	Aon, press release, 1 Apr 2026
Mid-2026 — E2/E6	"Prepaid reinstatements, second-event and aggregate coverage, top-and-drop features, all have been constrained in recent years, but [Howden Re reports] these have returned… Lower-attaching Florida layers, historically the most capacity-constrained, saw significantly broader appetite."	Howden Re, via Artemis.bm, 1 Jun 2026
Mid-2026 — E1	"Insurers are generally maintaining core retentions while selectively exploring buy-down structures and frequency covers."	Aon, via Reinsurance News, 1 Jul 2026

Season — element	Quotation	Source
Mid-2026 — battleground	"We think reinsurers are broadly keen to defend against a loosening of T&Cs [amid] some acknowledgement of relaxation being seen across certain areas, such as hours clauses, named perils, extensions and reinstatements [while] aggregate contracts are also making a sharp return, with improved structures." (Headline: terms and conditions marked "the new reinsurance battleground.")	Autonomous Research, via Artemis.bm, 24 Jul 2026
Aug 2026 — arc verdict	"Higher attachment points and tighter terms established in 2023 have nevertheless largely remained intact."	AM Best, via Global Reinsurance, 11 Aug 2026

Appendix B addendum — September 2026 commentary. The rows below record the forward-looking commentary of the Rendez-Vous de Septembre (Monte Carlo, 5–9 September 2026), discussed in Appendix C. They concern the renewal of 1 January 2027, which had not been transacted when this paper was completed, and are therefore **not** coded in Table 2. They are reproduced in full, on both sides of the question, because the weight of this commentary runs against the paper's forward-looking claim.

Season — element	Quotation	Source
Sept 2026 (RVS) — retrospective, E1 vs other elements	"Terms and conditions marginally loosened, although attachment points and retentions mostly held."	Brian C. Schneider, Senior Director, Fitch Ratings, *Insurance Journal*, 8 Sep 2026
Sept 2026 (RVS) — E1 forecast, against	"We expect reinsurers to show greater flexibility in negotiations by offering lower attachment points, broader coverage, and protection for more frequent return periods, including through aggregate covers."	Brian C. Schneider, Fitch Ratings, *Insurance Journal*, 8 Sep 2026
Sept 2026 (RVS) — mechanism of release	"competition is likely to become less price-led and increasingly centered on terms and conditions, which have remained resilient through most of 2026"	Brian C. Schneider, Fitch Ratings, *Insurance Journal*, 8 Sep 2026

Season — element	Quotation	Source
Sept 2026 (RVS) — E1/E3 forecast, against	"Ample reinsurance and retrocession capacity is likely to exert additional pressure on terms and conditions, including coverage provisions and attachment points."	S&P Global Ratings, via Artemis.bm, 6 Sep 2026
Sept 2026 (RVS) — E1 forecast, for	"So, we believe they will largely hold the line"	Moody's Ratings analysts, via *Reinsurance News*, 2 Sep 2026
Sept 2026 (RVS) — E1, upward movement	"we have seen actually some attachment points going up for […] some smaller insurance companies"	Moody's Ratings analysts, via *Reinsurance News*, 2 Sep 2026
Sept 2026 (RVS) — E1–E7, average vs distribution	"On average, terms have seen little movement between 23 and 26, but adjustments are occurring on a case by case basis."	Moody's Ratings analysts, via *Reinsurance News*, 2 Sep 2026
Sept 2026 (RVS) — E1 forecast, for	"I do think for the most part retentions will stay in place."	Jörg Bruniecki, Group Chief Underwriting Officer, MS Re, via *Reinsurance News*, 8 Sep 2026
Sept 2026 (RVS) — nominal vs real measurement	"While carrying forward attachment points at a constant level year after year may convey a sense of nominal stability, they actually reflect, in real terms, a loosening of terms and conditions."	Renaud Guidée, Chief Executive Officer, AXA XL Re, via *Reinsurance News*, 6 Sep 2026
Sept 2026 (RVS) — sector outlook	"We expect pricing pressure to persist through 2027. Rate reductions could match those seen in 2026, even if large losses reach annual budget levels."	S&P Global Ratings, via Artemis.bm, 6 Sep 2026
Sept 2026 (RVS) — structures vs last trough	"we expect the sector to continue earning returns above its cost of capital in 2027, as underwriting discipline and contract structures remain more robust than they were at the trough of the previous cycle"	S&P Global Ratings, via Artemis.bm, 6 Sep 2026

Appendix C: September 2026 Commentary, Uncoded

The documentary record of Table 2 ends with the mid-2026 renewals, which are transacted. The industry's September gathering at Monte Carlo, held from 5 to 9 September 2026, produced a body of forward-looking commentary about the renewal of 1 January 2027 that has not yet been tested against any contract. It is reported here separately, and uncoded, for two reasons: it bears directly on the framework's central prediction, and its weight runs against the paper.

On the retrospective question the commentary is unanimous, and it corroborates Table 2 from an independent vantage point. The agency that has been most sceptical of reinsurer discipline summarised the year in a sentence that could serve as the paper's own: "Terms and conditions marginally loosened, although attachment points and retentions mostly held" (Fitch Ratings 2026b). That is the ordered concession prediction P4 describes, with the peripheral elements giving first and the attachment last, observed and recorded by an unsympathetic witness.

On the prospective question the commentary divides, and the division is sharp enough to be worth stating in full. Against the framework, the same Fitch author writes, in the same piece: "We expect reinsurers to show greater flexibility in negotiations by offering lower attachment points, broader coverage, and protection for more frequent return periods, including through aggregate covers." That is preceded by the mechanism, namely that "competition is likely to become less price-led and increasingly centered on terms and conditions, which have remained resilient through most of 2026" (Fitch Ratings 2026b). S&P Global Ratings independently names the same element: "Ample reinsurance and retrocession capacity is likely to exert additional pressure on terms and conditions, including coverage provisions and attachment points" (S&P Global Ratings 2026). Autonomous Research, writing in July, had already judged that there was "some inevitability to a further loosening into next year, particularly on erosion of retentions, limits and sub-limits" (Appendix B). For the framework, Moody's took the opposite view in the same week — "we believe they will largely hold the line" — and reported the only movement in the other direction, "some attachment points going up for some smaller insurance companies," while characterising the period since the reset as one in which "on average, terms have seen little movement between 23 and 26, but adjustments are occurring on a case by case basis" (Moody's Ratings 2026b). Among reinsurers, the group chief underwriting officer of one carrier expected that "for the most part retentions will stay in place" (MS Re 2026). Among brokers, the direction of travel ran the other way, with frequency covers described as returning to play for the January 2027 renewals and retention buy-downs actively marketed (Appendix B).

Three observations follow. The first two qualify the paper, not the market.

The commentary names the measurement problem that Section 4.6 addresses. Both an analyst house and a reinsurer chief executive make the same point from opposite directions:

an attachment point unchanged in dollars is not an attachment point unchanged in substance. In the reinsurer's formulation, nominal constancy "actually reflect[s], in real terms, a loosening of terms and conditions" (AXA XL Re 2026). Section 4.6 tests that proposition directly for the three companies where exposure data exist and finds that it does not hold for the 2025-26 renewal, because insured values were flat or falling at two of the three and the third raised its retention far faster than its exposure grew. The same arithmetic shows the proposition becoming true at the next renewal if retentions are held in dollars, and Section 6.4 states the thresholds.

The concession being offered is not distributed evenly, which the framework should have predicted more explicitly than it did. Moody's reports that the larger and more sophisticated cedents are obtaining selectively lower attachment points and tailored aggregate structures while smaller insurers see attachments rise. A mandate that binds on average while yielding to the strongest counterparties is still a mandate, but it is a weaker object than a floor, and the aggregate statistic conceals the distribution.

In the framework's favour, the sequence of concession continues to run in the predicted order. Through 2025 and 2026 the give came first in aggregate covers and frequency protection, then in reinstatements, hours clauses and named perils. Attachment points are the element still being defended in September 2026 and the one whose concession is forecast rather than observed. A ratchet that releases from the periphery inward, over three years and under sustained price competition, is not the same object as a structure that never held. It is also not an indefinite ratchet, and the framework never claimed one. Prediction P4 says the structure margin loosens late, slowly and selectively, and the September 2026 record is what "late" looks like from the inside.

What the commentary does not settle is whether the attachment itself will move at 1 January 2027, and the paper does not pretend otherwise. That renewal will be transacted some months after this paper was completed, and Section 6.4 states what each outcome would mean.