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Parametric Insurance and Climate Risk:
An Innovative Tool for CAT Risk Management

Agenda

1. Intro to Parametric Insurance

- Key concepts and types of parametric covers
- Comparision to traditional indemnity insurance

2. Examples of Parametric Structures

- Hurricane, wildfire, EQ, tornado, hail
- 3rd party data is key (NHC, USGS, Satellites, etc.)

3. Market Update from Lockton

- State of the traditional property market
- parametric covers in the market today

4. Q&A

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Intro to Parametric Insurance

Parametric Insurance: *Index Based Insurance*

Underwriting Focus

- Peril-based underwriting.
- Flexible and highly customized structures to meet clients' needs.

Technology and Data Driven

- The trigger must be quantifiable, objective and easily measurable.
- Accuracy, quality and availability of data is essential.

Simplified Loss Payment

- Rapid settlement: Indemnification usually within 3 weeks of triggering event.
- All economic loss is eligible for indemnification: PD, BI, NDBI, Extra Expense.

Opportunity to 'Back Test'

- shows how parametric policies would have responded to prior events
- Not loss-rated

Types of Parametric Products

Natural Disasters

- Primary Perils: Hurricanes, earthquakes, wildfires, tornados, hailstorms.
- Secondary Perils: Floods, droughts, heat waves, freeze/frost, lack of wind.

Yield Protection

- Renewable Energy, carbon credits, crop yield.

Market & Financial & Economic Yield

- Fluctuations in asset prices, exchange rates or other economic variables.

Cyber & Pandemic

- Pandemic triggers: Disease outbreaks, government-imposed lockdowns.
- Cyber triggers: Breach, cloud outage, or duration of business interruption.

Traditional Insurance Insufficiencies

Severe Capacity Constraints

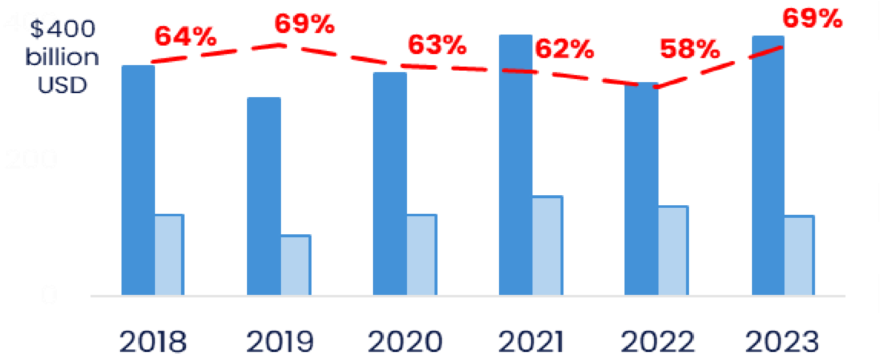
Transferring natural catastrophe risk is becoming increasingly difficult, particularly in exposed geographies.

Non-Damage Business Interruption Not Covered

Traditional insurance often does not protect against financial and intangible exposures such as loss of attraction, loss of access, or supply chain disruption.

Increasing Policy Restrictions & Exclusions

High deductibles, sub-limits & policy exclusions make risk placement increasingly expensive and difficult.



2018 – 2023
Global Economic Nat Cat Losses vs Global Insured Nat Cat Losses

Comparing Parametric and Traditional Cover

	Parametric	Traditional
Loss Trigger	Event-based financial loss or damage	Physical loss or damage
Policy Period	Flexible, short-term seasonal or multi-year LTAs possible	Typically annual, multi-year LTAs possible
Policy Structure	Straight-forward and customized to client's needs	Generally standardized and rigid
Premium Stability	Based on event-probability and flexible client-centric payout structures	Fluctuates heavily with market cycles & major loss events, "take-it or leave it approach"
Claims process	Data-based, remote payout based on pre-defined payout thresholds	On-site, manual claims adjustment determines payout after loss occurs
Claims Timeline	Swift – claims payout typically occurs within 2-4 weeks	Long – averaging months to years for loss adjustment
Basis Risk	Challenge of actual economic loss matching claims payout of event	Deductibles, policy exclusions, sub-limits, specific terms, etc.

Parametric Claims Process

1

Event Occurs

The insured notifies their broker and insurer of a loss

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2

Data Collection

Insurer collects the final data from the certification agent post event ensuring the most accurate level of information

3

Event Report

Using the collected data, the insurer creates a report of the maximum monetary amount to be recovered as per the policy structure

4

Payment Issued

Claims payment issued as defined within the policy, following receipt of the Declaration of Loss statement

CLIENT / BROKER

Declaration of Loss

After the triggering event, the insured has 30 calendar days from that date to issue a **Declaration of Loss Statement** to the insurer

*Timelines depend on product type and are policy specific

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Example Structures

Parametric Insurance in Action – Hurricane

Hospitality Exposure in Florida

Pain Point

A hospitality company in Florida had several property locations with significant hurricane exposure

Parametric Solution

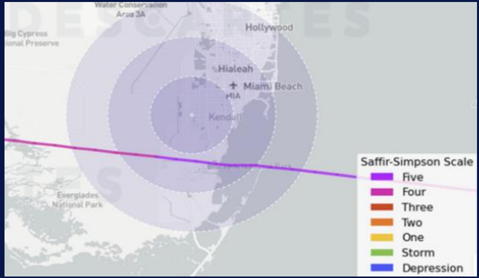
Aware of the increasing costs & challenges of traditional wind coverage, the insured opted to replace their traditional policy with a parametric cover. This decision gave them certainty that they would be paid quickly following a triggering event.

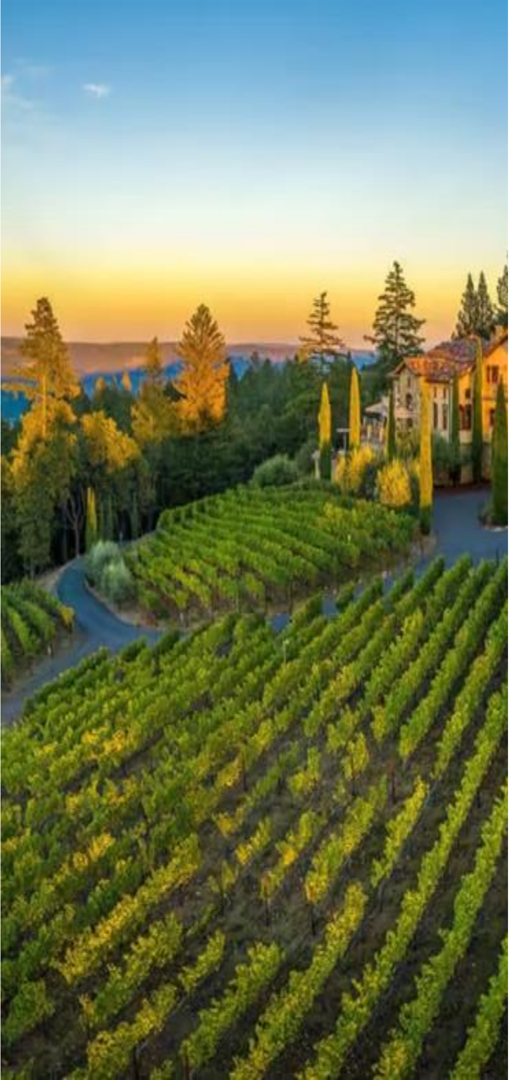
Result

A Category 5 hurricane crossed the middle circle of the insured's location resulting in a payout of 40% of the policy limit. The insured purchased a $10 million limit, resulting in a total payout of $4 million.

Payout Structure Example

Saffir Simpson Category	Wind Speed (mph)	Compensation (% of the sum insured)		
		≤10mi	>10mi & ≤20mi	>20mi & ≤30mi
3	≥111 - 130	15%	10%	5%
4	≥130 & <157	40%	15%	10%
5	≥157	100%	40%	15%





Parametric Insurance in Action – Wildfire

Securing financial resilience in California

Pain Point

Over the last few years the insured's deductible had been steadily increasing due to constraints in California for wildfire coverage. The high value of the assets created a larger self-insured retention and the client was looking to mitigate their exposure.

Parametric Solution

A binary cover with a 100-meter buffer around the assets to cover their deductible in the event of a wildfire. The binary nature of the coverage ensures 100% payout of the policy limit.

Result

The coverage area was breached, and the final burn scar is shown in the diagram. The insured had purchased a $5 million policy limit. Following the event, they received the full payout of $5 million, allowing them to fully cover their deductible.

Payout Structure Example

Final burn scar breaching the insured's coverage area

Parametric Insurance in Action – Earthquake

Deductible Buy-Down Alternative for Japan & California

Pain Point

A company with retail stores and facilities in Japan and California was faced with increasing earthquake deductibles through their traditional program.

Parametric Solution

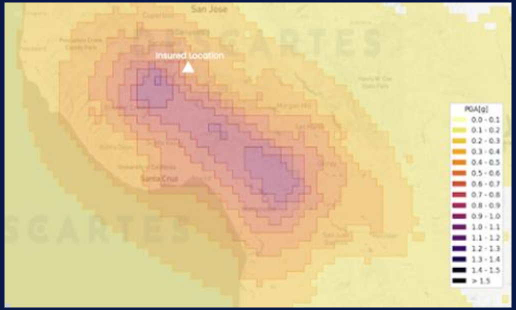
An earthquake structure based on Peak Ground Acceleration, designed to trigger at a lower threshold in order to cover the deductible layer.

Result

In the event of an earthquake with a recorded PGA of 80%g, the insured would be entitled to a payout of 50% of the policy limit.

Payout Structure Example

PGA (% g)	Payout (% location limit)
40%	10%
60%	30%
80%	50%
100%	70%
120%	100%



Parametric Insurance in Action – Tornado

Technology Warehouse

Pain Point

A technology company looking to cover assets essential to their operations was unable to find affordable options in the traditional market, primarily due to high BI values.

Parametric Solution

A parametric tornado cover was purchased, with the $70 million limit being fully allocated to their BI exoosure.

Result

Iif a tornado were to hit the insured location with 45% of the coverage area impacted by EF 2 intensity, and 30% by EF 1 intensity, then the resulting payout would be (45%*50%)+(30%*15%)=27% of the Annual Aggregate Limit.

Payout Structure Example

Tornado Category (Enhanced Fujita Scale)	Compensation (% of the sum insured)
EF 1	15%
EF 2	50%
EF 3	75%
EF 4	100%
EF 5	100%

Parametric Insurance in Action – Hail

Hail Storm in Central Texas

Pain Point

A renewable energy company experienced significant damage following a severe hailstorm that hit their solar farm. Their traditional policy left the client with a challenging claims process leading to unfavorable terms at renewal.

Parametric Solution

A parametric cover was designed that would match the loss amount the client sustained previously based on maximum hailstone size recorded on site by radar.

Result

The payout is based on the % of area impacted and the payout table. The insured's site was impacted by multiple hailstones of varying size. With a $10 million policy limit, the parametric cover would have paid out $3,465,000 for the event.

Payout Structure Example

Hail size (in)	Hail Size Payout		Area Impacted		Payout (%)
<2.25	0%	x	0%	=	0%
2.25	5%	x	0%	=	0%
2.50	10%	x	24%	=	2.40%
2.75	25%	x	33%	=	8.25%
3.0	50%	x	33%	=	16.50%
3.25	75%	x	10%	=	7.50%
>3.5	100%	x	0%	=	0%

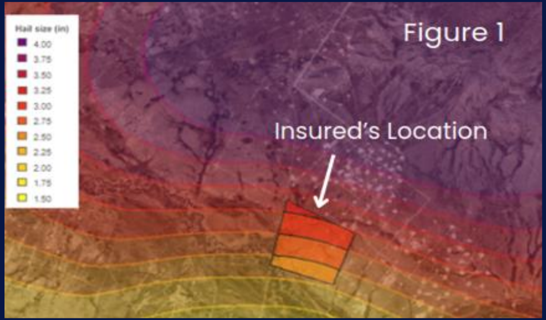


Figure 1

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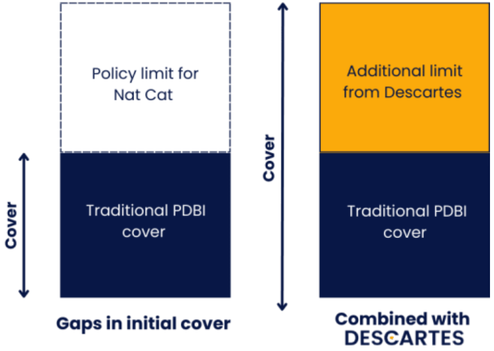
Market Update from Lockton

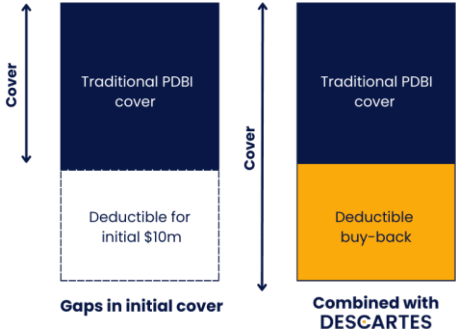
Parametric in Action

Additional Capacity

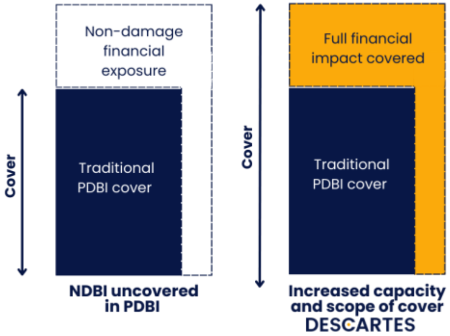


Carve-outs

Deductible Buy Down



'Protection Gap' Cover



Parametric Insurance Summarized

TRANSPARENT & FLEXIBLE COVERS

- Model based and data driven underwriting.
- Reduced premium volatility.
- Highly-correlated peril triggers.
- Predictable payouts, transparency, and contract certainty.
- No deductibles, exclusions, or sub-limits.

NEAR IMMEDIATE INDEMNIFICATION & SIMPLIFIED CLAIMS PROCESS

- No manual loss adjustment; a simplified proof of loss statement initiates loss settlement.
- Quick payouts: liquidity, cash-flow stabilization, and earnings/balance sheet protection.
- Can cover ANY economic loss: physical damage, business interruption, non-damage business interruption, gap protection, debris removal, difference in conditions and difference in limits.

ENHANCED COVERAGE & PORTFOLIO DIVERSIFICATION

- Carving out the natural catastrophe exposure can protect loss ratios of a traditional program.
- Alternative solution to traditional deductible buy-down options, protecting self-insured retentions.
- Offers capacity that may be limited in the traditional market.

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COMING UP

RISKWORLD 2025:

- **05/05/25**: Parametric Insurance: From Buzzword to Coverage Solution presented by Brian Thompson
- **05/06/25**: The Evolving Wildfire Landscape presented by Tiffany Kinne

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All parametric cover carries the risk that the trigger index may not be perfectly correlated with the underlying risk exposure, with the result that the insured may suffer a loss without the parametric insurance being triggered.

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