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INSIGHT

Parametric Insurance for Natural Disasters: Frequently Asked Questions

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The Administration and Congress are considering reform to the Federal Emergency Management Agency (FEMA). Recent media articles report that one of the changes being considered is the introduction of a parametric system of awarding disaster aid, with federal assistance no longer based on the real costs of a disaster. Details of how FEMA would implement a parametric approach are not yet known. This Insight answers some frequently asked questions about parametric insurance and how it has been used for natural disasters.

What Is Parametric Disaster Insurance?

Parametric (or index-based) insurance is a type of insurance contract that insures a policyholder against the occurrence of a specific disaster event by paying a pre-agreed amount based on the magnitude of the event, as opposed to the size of losses. The amount of the payout is set according to an objective measure of the event rather than the cost of damage sustained. For example, a parametric policy could pay out a pre-determined amount if the wind speeds of a named storm exceed 80 mph in a defined geographical area.

A contract for parametric insurance typically specifies (1) the payment amount; (2) the trigger (a pre-determined parameter based on observable data); and (3) an impartial third party to verify that the trigger was met (for example, the National Hurricane Center).

How Does It Compare to Traditional (Indemnity) Insurance?

In traditional disaster indemnity insurance, claims are paid after loss of or damage to a physical asset. The policyholder documents their losses and submits a claim after an event, the insurer reviews the claim, and an adjuster assesses and validates the claim before payment is made.

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What Are the Advantages of Parametric Insurance?

Parametric insurance has a number of advantages:

- The elimination of the claims adjustment process allows money to reach policyholders much more quickly. Payment can be made in a matter of weeks with a parametric contract versus months or years with a standard indemnity contract. For example, in 2017, Dominica received a payout of nearly $19.3 million within 14 days of Hurricane María from a parametric policy through the Caribbean Catastrophe Risk Insurance Facility (CCRIF), and, in 2024, CCRIF issued $85 million in parametric payments to five Caribbean countries two weeks after Hurricane Beryl.
- The use of a clearly defined trigger may make it easier for the insured to understand the coverage provided and reduce policy disputes. Triggers may also make it easier for insurers to calculate premiums, particularly for extreme events that occur infrequently.
- Parametric insurance can provide coverage for events not normally included in traditional insurance, particularly those without physical damage, such as extreme heat.
- Parametric insurance can provide flexibility to the insured, as payments can generally be used for any immediate disaster-related needs. For example, under a traditional insurance policy, the insured may be required to use the payment to repair the damaged property, whereas a parametric policy could be used to offset any expense caused by the event.

What Are the Disadvantages of Parametric Insurance?

Disadvantages of parametric insurance include:

- Compensation from parametric policies is not linked to actual losses, so the claim payment may be higher or lower than the losses incurred. This is known as basis risk.
- An appropriate loss trigger may be difficult to determine—such a trigger should be reliable, accessible, and highly correlated to losses. For example, a city which purchased hurricane parametric coverage with barometric pressure as a trigger might not be able to claim if the damage was due to storm surge rather than wind.
- Policyholders would not be covered for a loss if the trigger is not met. For example, the New Orleans School District had purchased parametric wind insurance for 2024; however, the winds from Hurricane Francine did not meet the 100 mph trigger and the policy did not pay out despite damage to school facilities.
- Most existing insurance laws are designed to specifically address indemnity insurance, so parametric products may not be fully regulated. Some states are introducing legislation to integrate parametric insurance into their existing regulatory frameworks.

Is Parametric Insurance Being Used in the United States?

Parametric disaster insurance is relatively new in the United States. Most parametric policies in the U.S. are purchased by public sector organizations for different perils; some examples are given below.

- The states of Alabama, Florida, and Texas, as well as Miami-Dade County, Florida, have purchased parametric wind policies.
- New York City purchased parametric coverage for flooding from excess rainfall and storm surge events in 2023, using it as a financing tool for an emergency assistance

- program for low- and moderate-income households. The Mississippi River Cities and Towns Initiative is piloting a parametric flood policy, using water depths from United States Geological Survey streamgages as triggers. The City of Isleton, California, introduced a two-year community-based parametric flood insurance to supplement NFIP coverage, and the city of Fremont, California, also purchased a parametric flood insurance policy.
- Parametric coverage for both hurricanes and earthquakes was purchased by the government of Puerto Rico in 2023 in order to meet FEMA's requirement to obtain and maintain insurance coverage after receiving FEMA Public Assistance. Several microinsurance products have also been launched in Puerto Rico, including a parametric microinsurance product that covers both hurricanes and earthquakes, and a hurricane microinsurance product.
- An earthquake policy purchased by the state of Utah allocated funds less than four weeks after an earthquake.
- The Los Angeles Department of Water and Power has issued three parametric wildfire catastrophe bonds since 2020, each with a different trigger, transferring risk to capital market investors.
- The Nature Conservancy has purchased parametric insurance since 2022 to cover damage to coral reefs in Hawai'i.

The market for parametric insurance in the U.S. has grown in recent years and a number of companies offer parametric insurance to homeowners or businesses. As examples, Jumpstart Insurance offers small parametric policies for earthquakes. Parametric coverage for hurricanes is offered by StormPeace in Florida, and Vortex offers hurricane insurance in Hawai'i. FloodFlash offers parametric insurance for floods, and Recoop Disaster Insurance offers multiperil parametric policies.

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