

PARAMETRIC INSURANCE--How Do Other Jurisdictions Manage Hurricane
Risk Exposure?
By Don Brown

As I have watched Hurricane Beryl mark its' path through the Caribbean, particularly the island of Carriacou (an island of the Grenadine Islands, part of Grenada), I could not help but wonder how well residents and business owners there are insured for hurricane damage.

After some research I learned that the traditional property insurance market in the Caribbean is projected to reach \$2.92 billion by 2024¹ I also learned that property insurance rates in the Caribbean increased 4% in Q12024 however, premiums are 50-100% higher than 2 years ago. Many homeowners and businesses in the Caribbean do not have hurricane insurance due to affordability constraints.

Another interesting fact is that Parametric insurance is growing in popularity in the Caribbean, with the Caribbean Catastrophe Risk Insurance Facility (CCRIF) offering 5 different parametric insurance products (for tropical cyclones, excess rainfall, earthquakes, fisheries, and electric utilities).

What is parametric insurance and what are its advantages relative to traditional property insurance?

Parametric insurance is a type of insurance that pays out based on the occurrence of a specific event, such as a hurricane or earthquake, rather than the actual loss incurred. The key advantages of parametric insurance relative to traditional property insurance include:

1. **Rapid Payouts:** Parametric insurance pays out quickly, often within weeks, as the payout is based on the occurrence of the event rather than the actual loss assessment.

¹ <https://www.statista.com/outlook/fmo/insurances/non-life-insurances/property-insurance/caribbean>

2. **Flexibility in Use of Funds:** Parametric insurance provides policyholders with the flexibility to use the payout as they see fit, rather than being restricted to specific losses or damages.
3. **Transparency:** Parametric insurance contracts are transparent, with clear and predefined payout structures, reducing ambiguity and disputes.
4. **Reduced Moral Hazard:** Parametric insurance reduces moral hazard, as the payout is based on the event rather than the actual loss, reducing the incentive for policyholders to take advantage of the insurance.
5. **Dynamic Pricing:** Parametric insurance premiums are tailored to reflect the actual probability and severity of the insured event, providing fairer and more equitable pricing.
6. **Data-Driven Insights:** Parametric insurance uses advancements in data and AI to enhance product design, underwriting, and claims processing, leading to more precise and effective risk management strategies.
7. **Coverage for Hard-to-Insure Risks:** Parametric insurance can provide coverage for risks that are difficult or impossible to insure through traditional means, such as natural catastrophes or business interruption risks.

Overall, parametric insurance offers a unique set of benefits that can complement traditional property insurance, particularly for risks that are difficult to insure or require rapid payouts.

The Caribbean Catastrophe Risk Insurance Facility (CCRIF) is the largest dedicated parametric risk pool in the world, with over \$1 billion in insurance coverage from its 19 Caribbean and 3 Central American government members.

CCRIF has made over \$260 million in payouts to date, with around \$50 million of that due to earthquakes.

There are also other parametric insurance providers and products emerging in the Caribbean market, like the new Aura Parametric product from Lloyds.

However, the overall size or market share of parametric insurance compared to traditional insurance in the Caribbean is not clear from my research, but it is growing.

For instance, I was able to find that the use of parametric insurance policies is quite prolific in the Caribbean. Here are some key findings:

1. **Wide Adoption:** Parametric insurance policies have been widely adopted in the Caribbean, with many countries and organizations utilizing them to manage climate-related risks. For example, the Caribbean Catastrophe Risk Insurance Facility (CCRIF) offers parametric insurance products to 19 Caribbean governments and three Central American governments.^{2,3,4}
2. **Variety of Products:** A range of parametric insurance products are available, covering various risks such as tropical cyclones, earthquakes, excess rainfall, and fisheries sector risks.^{5,6,7}
3. **Government Support:** Governments in the region have actively promoted the use of parametric insurance. For instance, the UK government has provided significant funding to support the development of parametric insurance products in the Caribbean.^{8,9}
4. **Rapid Payouts:** Parametric insurance policies have been shown to provide rapid payouts in the aftermath of disasters, which is critical for disaster

² <https://www.preventionweb.net/news/developing-new-parametric-insurance-models-caribbean-and-central-american-countries>

³ <https://reliefweb.int/report/world/caribbean-water-utilities-access-parametric-insurance-coverage-against-extreme-weather-events>

⁴ https://www.ccrif.org/?language_content_entity=en

⁵ <https://reliefweb.int/report/world/caribbean-water-utilities-access-parametric-insurance-coverage-against-extreme-weather-events>

⁶ <https://www.ccrif.org/sites/default/files/DRF-Course-2023/CCRIFModel-Evolution-February2023.pdf>

⁷ <https://www.lexisnexis.com/community/insights/legal/practical-guidance-journal/b/pa/posts/insuring-for-climate-change-the-role-of-parametric-insurance>

⁸ <https://reliefweb.int/report/world/caribbean-water-utilities-access-parametric-insurance-coverage-against-extreme-weather-events>

⁹ <https://www.ilo.org/projects-and-partnerships/projects/climate-risk-adaptation-and-insurance-caribbean>

response and recovery. For example, CCRIF has made payouts of approximately \$260 million, with \$50 million of that due to earthquakes.^{10,11}

5. **Capacity Building:** Efforts have been made to build the capacity of insurance companies and distribution channels to offer parametric insurance products effectively. This includes projects like the Climate Risk Adaptation and Insurance in the Caribbean (CRAIC) project, which aims to promote weather-index based insurance in the region.^{12,13}
6. **Innovative Applications:** Parametric insurance is being applied in innovative ways, such as the development of parametric weather-index based risk insurance products for low-income individuals and lending institutions.^{14,15}

Overall, the use of parametric insurance policies in the Caribbean is significant, with a wide range of products and initiatives in place to support disaster risk management and climate resilience.

Since Florida has much in common with many Caribbean nations related to hurricane risk, why are parametric insurance products almost unheard of in Florida?

Parametric insurance products are more prevalent in the Caribbean than in Florida due to several key differences:

1. **Rapid Payouts:** Parametric insurance provides quick payouts based on predefined parameters, which is particularly important in the Caribbean where timely financial support is crucial for disaster response and recovery. This rapid response helps mitigate the impact of disasters and supports the swift recovery of affected communities.

¹⁰ <https://www.preventionweb.net/news/developing-new-parametric-insurance-models-caribbean-and-central-american-countries>

¹¹ <https://www.wtwco.com/en-us/insights/2023/12/enhancing-disaster-resilience-addressing-basis-risk-in-parametric-insurance>

¹² <https://www.ilo.org/projects-and-partnerships/projects/climate-risk-adaptation-and-insurance-caribbean>

¹³ <https://climate-insurance.org/projects/climate-risk-adaptation-and-insurance-in-the-caribbean/>

¹⁴ <https://www.ilo.org/projects-and-partnerships/projects/climate-risk-adaptation-and-insurance-caribbean>

¹⁵ <https://climate-insurance.org/projects/climate-risk-adaptation-and-insurance-in-the-caribbean/>

2. **Government Support:** Governments in the Caribbean have actively promoted the use of parametric insurance, recognizing its benefits in managing disaster risk. This support has led to the establishment of regional risk pools like the Caribbean Catastrophe Risk Insurance Facility (CCRIF), which provides insurance coverage for hurricanes and earthquakes to Caribbean countries.
3. **Regional Risk Pools:** The Caribbean has a well-established regional risk pool, CCRIF, which pools risk across multiple countries, reducing the cost of insurance and providing a unified approach to managing disaster risk. This collaborative approach has contributed to the wider adoption of parametric insurance in the region.

In contrast, the adoption of parametric insurance in Florida and the U.S. has been slower due to several factors:

1. **High Costs:** Parametric insurance products can be expensive, making them less accessible to individual homeowners. This high cost is a significant barrier to wider adoption in Florida.¹⁶
2. **Limited Availability:** Parametric insurance products are not as widely available in Florida as they are in the Caribbean. Few insurance companies offer these products, and they are often not well-suited for individual homeowners.
3. **Reliance on Traditional Insurance:** The traditional insurance market in Florida is well-established, and many homeowners rely on these policies for their insurance needs. This reliance on traditional insurance has contributed to the slower adoption of parametric insurance products.

Overall, the differences in government support, regional risk pools, and the insurance market have contributed to the more widespread use of parametric insurance in the Caribbean compared to Florida.

¹⁶ <https://www.fox13news.com/news/what-is-parametric-insurance-and-should-floridians-have-it>

If parametric insurance products are commonly used by low-income individuals in the Caribbean, why would parametric insurance products be expensive relative to traditional insurance in Florida? In other words, why does it work well in the Caribbean but not in Florida?

Parametric insurance products are commonly used by low-income individuals in the Caribbean because they provide quick financial support in the aftermath of disasters, which is critical for these communities. In contrast, parametric insurance products are not as widely adopted in Florida due to several key differences:

1. **Government Support:** Governments in the Caribbean have actively promoted the use of parametric insurance, recognizing its benefits in managing disaster risk. This support has led to the establishment of regional risk pools like the Caribbean Catastrophe Risk Insurance Facility (CCRIF), which provides insurance coverage for hurricanes and earthquakes to Caribbean countries.^{17,18,19}
2. **Regional Risk Pools:** The Caribbean has a well-established regional risk pool, CCRIF, which pools risk across multiple countries, reducing the cost of insurance and providing a unified approach to managing disaster risk. This collaborative approach has contributed to the wider adoption of parametric insurance in the region.
3. **Microinsurance:** Parametric insurance products in the Caribbean are often designed as microinsurance, which is specifically tailored for low-income individuals. These products provide some stability to the financial situation of vulnerable individuals after a disaster through quick liquidity, allowing them to avoid coping strategies that could lead them deeper into poverty.²⁰
4. **Cost and Availability:** Parametric insurance products are not as widely available in Florida as they are in the Caribbean. Few insurance companies

¹⁷ <https://www.fox13news.com/news/what-is-parametric-insurance-and-should-floridians-have-it>

¹⁸ <https://www.wtwco.com/en-us/insights/2023/12/enhancing-disaster-resilience-addressing-basis-risk-in-parametric-insurance>

¹⁹ <https://www.preventionweb.net/news/developing-new-parametric-insurance-models-caribbean-and-central-american-countries>

²⁰ https://www.ccrif.org/projects/crai/climate-risk-adaptation-insurance?language_content_entity=en

offer these products, and they are often more expensive than traditional insurance policies, making them less accessible to individual homeowners.²¹

5. **Traditional Insurance Market:** The traditional insurance market in Florida is well-established, and many homeowners rely on these policies for their insurance needs. This reliance on traditional insurance has contributed to the slower adoption of parametric insurance products.

In summary, the differences in government support, regional risk pools, microinsurance, cost, and availability, as well as the reliance on traditional insurance, have contributed to the more widespread use of parametric insurance in the Caribbean compared to Florida.

Based on Florida's experience with excessive litigation over traditional insurance due in large measure to the length of time from loss to claim payment, would not parametric products with their fast payouts benefit from reduced litigation?

Yes, parametric insurance products with their fast payouts would likely benefit from reduced litigation in Florida. The state's experience with excessive litigation over traditional insurance is largely due to the length of time from loss to claim payment, which can lead to disputes and legal battles.

Parametric insurance, by eliminating the lengthy claims adjustment process, reduces administrative costs and the potential for disputes. The quick payouts also improve cash flow and reduce the need for litigation, as policyholders receive timely financial support.

Additionally, the transparent and predictable process of parametric insurance minimizes basis risk and moral hazard, further reducing the likelihood of litigation. By complementing traditional insurance, parametric products can fill gaps and provide rapid relief, which can help mitigate the litigation issues plaguing Florida's insurance market.

²¹ <https://www.propertycasualty360.com/2023/10/18/navigating-floridas-insurance-challenges-with-parametric-solutions/?slreturn=2024070203704>

How is the Caribbean Catastrophe Risk Insurance Facility (CCRIF) and the Florida Hurricane Catastrophe Fund (FHCF) difference other than the fact that the emphasis for the CCRIF is parametric products and the emphasis for the FHCF is traditional insurance products?

The Caribbean Catastrophe Risk Insurance Facility (CCRIF) and the Florida Hurricane Catastrophe Fund (FHCF) differ in several key aspects beyond their emphasis on parametric and traditional insurance products:

1. **Geographic Scope:** CCRIF covers Caribbean and Central American countries, while FHCF only covers Florida.^{22,23}
2. **Participation:** CCRIF is a voluntary facility, whereas FHCF is mandatory for all residential property insurance companies doing business in Florida.²⁴
3. **Risk Coverage:** CCRIF offers coverage for multiple perils including hurricanes, earthquakes, and excess rainfall, whereas FHCF primarily focuses on hurricanes.
4. **Payout Structure:** CCRIF uses parametric triggers to determine payouts, whereas FHCF reimburses actual losses.
5. **Funding:** Both facilities use premiums, but CCRIF also relies on donor contributions to support its operations.
6. **Risk Pooling:** CCRIF pools risk across countries, while FHCF pools risk within Florida.
7. **Governance:** CCRIF has international oversight, whereas FHCF is state controlled.
8. **Purpose:** CCRIF aims to provide quick liquidity to governments after a disaster, whereas FHCF's primary goal is to maintain insurance capacity in Florida.

These differences highlight the distinct approaches and objectives of each facility in managing disaster risk and providing financial support to their respective regions.

²² https://www.ccrif.org/about-us?language_content_entity=en

²³ https://en.wikipedia.org/wiki/Caribbean_Catastrophe_Risk_Insurance_Facility_Segregated_Portfolio_Company

²⁴ <https://fhcf.sbafla.com/about-the-fhcf/>

How could Florida benefit from a facility like the CCRIF to supplement the FHCF?

Florida could benefit from a facility like the Caribbean Catastrophe Risk Insurance Facility (CCRIF) in several ways:

1. **Enhanced Financial Resilience:** A parametric insurance facility like CCRIF could provide Florida with additional financial resources to respond to natural disasters, enhancing the state's financial resilience and ability to recover quickly.
2. **Supplementing FHCF:** The facility could supplement the Florida Hurricane Catastrophe Fund (FHCF) by providing an additional layer of financial protection, helping to mitigate the financial impact of catastrophic events on the state's insurance market.
3. **Faster Payouts:** Parametric insurance products, like those offered by CCRIF, can provide faster payouts compared to traditional insurance products, which can accelerate disaster response and recovery efforts.
4. **Reducing Basis Risk:** By using parametric triggers, the facility can reduce basis risk, which is the difference between the actual loss and the payout based on the trigger. This can lead to more predictable and reliable payouts.
5. **Encouraging Risk Reduction:** Parametric insurance can incentivize policyholders to invest in risk reduction measures, as they would still receive payouts even if their actual losses are lower than the trigger.
6. **Diversifying Risk:** A facility like CCRIF can help diversify risk by pooling it across multiple entities, reducing the burden on individual insurers and the state.
7. **Supporting Economic Stability:** By providing quick liquidity after a disaster, the facility can help maintain economic stability and support the state's overall recovery efforts.
8. **Innovative Risk Management:** A parametric insurance facility can encourage innovative risk management practices, such as the use of advanced modeling and data analytics to better understand and manage risk.

9. **Regional Cooperation:** Florida could explore regional cooperation with other states or entities to establish a similar facility, sharing knowledge and best practices in managing disaster risk.
10. **Long-term Sustainability:** A facility like CCRIF can contribute to long-term sustainability by providing a stable source of funding for disaster response and recovery, reducing the reliance on ad-hoc funding sources.

By establishing a facility like CCRIF, Florida can enhance its disaster risk management capabilities, improve its financial resilience, and support the state's overall economic stability.

Realizing that any catastrophe fund violates one of the fundamental tenets of insurance – spreading the risk. It also supplants private-sector reinsurance, which is fully paid for in advance.

Private reinsurance spreads the risk globally, and the cost of that reinsurance is paid upfront. A state catastrophe fund concentrates that risk in one jurisdiction and shifts the financial risk of catastrophic losses from private sector insurers to insurance buyers and taxpayers.

Private reinsurance, on the other hand, promotes the spreading of risk and loss. Results from the 2005 hurricanes indicate that the losses were borne as follows: 41% in the private insurer market, 24% among Bermuda reinsurers, 11% for U.S. reinsurers, 13% among European reinsurers, 9% in Lloyds, and 1% for other. Risk spreading fosters a viable competitive market; risk concentration among a few insurers and state funds inhibits a competitive market.

Based on this statement how important would it be that any program created by Florida to facilitate wider use of parametric products not rely solely on risk retention but rather use risk transfer techniques such as reinsurance, Cat Bonds and other ILS products to manage hurricane risk?

The importance of using risk transfer techniques such as reinsurance, Cat Bonds, and other ILS products to manage hurricane risk in any program created by Florida to facilitate wider use of parametric products cannot be overstated. The cautionary

note highlights the limitations of relying solely on risk retention, as it concentrates risk in one jurisdiction and shifts the financial burden to insurance buyers and taxpayers. In contrast, private reinsurance promotes the spreading of risk and loss, fostering a viable competitive market. In order to ensure a comprehensive risk management strategy, Florida should consider the following approach:

1. **Risk Assessment:** Conduct a thorough risk assessment to identify the specific hurricane risks that need to be managed.
2. **Risk Transfer Techniques:** Utilize a mix of risk transfer techniques, including reinsurance, Cat Bonds, and other ILS products, to manage hurricane risk. This will help spread the risk globally and reduce the financial burden on insurance buyers and taxpayers.
3. **Parametric Insurance Products:** Implement parametric insurance products that provide rapid payouts and flexibility in coverage. These products can be designed to complement traditional insurance products and provide additional financial protection.
4. **Comprehensive Risk Management Strategy:** Develop a comprehensive risk management strategy that balances risk retention and risk transfer. This strategy should consider the use of reinsurance, Cat Bonds, and other ILS products to manage hurricane risk.
5. **Regulatory Framework:** Establish a regulatory framework that supports the use of parametric insurance products and risk transfer techniques. This framework should ensure that insurance companies and reinsurers are adequately capitalized to manage the risks they assume.
6. **Education and Awareness:** Educate insurance buyers and taxpayers about the benefits and limitations of parametric insurance products and risk transfer techniques. This will help increase awareness and adoption of these products.

By adopting this approach, Florida can create a comprehensive risk management strategy that balances risk retention and risk transfer, promoting a viable competitive market and reducing the financial burden on insurance buyers and taxpayers.

The final question is: Has Florida explored all available alternatives to hurricane risk management? Should Florida explore the use of parametric insurance products to

supplement the traditional insurance system we rely so heavily on now. What do you think. Let's have a conversation.

This paper written by

Donald Brown

Former Insurance Agent and

Former Chairman of the Florida House of Representatives Insurance Committee