# Pricing Dynamics in Catastrophe Bond Issuance

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## Abstract

Catastrophe bonds play an increasingly important role in transferring natural catastrophe risk from insurers and reinsurers to capital markets. This paper examines how issuance conditions influence catastrophe bond spreads in primary markets.

Using a comprehensive dataset of catastrophe bond transactions issued over an extended period, we investigate how spreads vary with issuance timing and market conditions. The empirical framework combines standard regression models with a causal machine learning approach [1], allowing the estimation of heterogeneous pricing effects across transactions.

The results indicate that bonds issued earlier in the calendar year tend to exhibit lower spreads than otherwise comparable bonds issued later in the year. The magnitude of these differences varies across transactions and appears stronger for larger issues and during periods of greater capital availability in insurance-linked securities markets.

Overall, the findings highlight the role of issuance conditions and market environments in catastrophe bond pricing and contribute to the growing empirical literature on insurance-linked securities and catastrophe risk transfer.

**Keywords:** Catastrophe bonds, insurance-linked securities, catastrophe risk transfer, pricing dynamics, machine learning.

## References

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