UNIVERSITÀ CATTOLICA
del Sacro Cuore

Dipartimento di Matematica per le Scienze economiche, finanziarie ed attuariali

Nell'ambito delle iniziative seminariali del Dipartimento, rivolte alla ricerca ed alla didattica avanzata,

martedì 18 marzo 2025, alle ore 10.00
presso l'Aula 200 – via Necchi 9

si svolgerà il **SEMINARIO**

« ASSESSING THE PRESENCE OF PHYSICAL RISK WITH A MULTI-JUMP STRUCTURAL CREDIT RISK MODEL»
joint work with Davide Radi

Speaker Elia Smaniotto
Università Cattolica del Sacro Cuore

The rising rate of climate-related disaster events, which can significantly impact firms and economic sectors activities, has fostered the need to design newly pricing models which incorporates factors specifically aimed at modeling physical risk events. In this work, we propose a multi-jump structural credit-risk model to price Credit Default Swap (CDS) under physical risk scenarios, where the arrival rate of jumps related to climate disaster events, negatively impacting the value of the firm, is stochastic.
To estimate the climate-related disaster probabilities modeling the arrival rate of physical-risk jumps, we include country-based temperature anomalies and historical climate-related disaster events, distinguishing among climatological, meteorological and hydrological categories.
In the empirical analysis, we perform daily model calibrations to CDS quotations of several European firms, aiming to assess how the presence of the physical risk changes across the dataset cross-section. First, we examine how the magnitude of the model implied jumps, which separately account for the credit risk and physical risk components, varies for the firms under study. Second, by analyzing the occurrence of spikes in the model-implied physical risk CDS spreads compared to market CDS quotations, we assess the model capability to price debt instruments by disentangling the credit from physical risk component.

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Tutti gli interessati sono invitati a partecipare.