Università di Genova | DIEC DIPARTIMENTO DI ECONOMIA

Economics and Quantitative Methods PhD Seminar Series

"The impact of climate change on fisheries"

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Abstract

This study investigates the economic impact of climate change on fisheries by examining the effect of sea surface temperatures (SST) variations on fishing revenues. We formalize this relationship with a theoretical model and estimate it empirically using over 2.6 million spatially disaggregated observations of fishing revenues from European vessels (2013–2022), matched with satellite-based SST data. The identification strategy leverages a novel exposure metric, Marine Degree Days, which quantifies species-specific temperature exposure relative to biologically-established thermal tolerance intervals, allowing us to capture heterogeneous sensitivity to thermal anomalies. Within this framework we address key identification challenges in the fisheries context, including non-random spatial selection by fishers and ecological interdependencies across species. We find that deviations from species' thermal preferences, whether colder or warmer, lead to significant losses in fishing revenues, with hot exposure causing the most pronounced impacts. Projections across different climate scenarios point to widespread revenue declines by 2100, though impacts vary considerably by region. Lower-income, equatorial areas are expected to suffer the most, while some colder regions may see modest gains. Taken together, our findings reveal the asymmetric and non-linear effects of ocean warming on fisheries, reinforcing the urgent need for adaptive strategies to support marine-based livelihoods.

Monday 22 September 2025, h. 14.30
Aula Acquario