



Università
di Genova

DIEC DIPARTIMENTO
DI ECONOMIA

Economics and Quantitative Methods PhD Seminar Series

“ODTE Option Pricing”

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Abstract

The market for ultra short-tenor (zero days-to-expiry or oDTE) options has grown exponentially over the last few years. In 2023, daily volume in oDTEs reached over 45% of overall daily option volume. After briefly describing this exploding new market, we present a novel pricing formula designed to capture the shape of the oDTE implied volatility surface. Pricing hinges on an Edgeworth-like expansion of the conditional characteristic function of the continuous portion of the underlying's price process. The expansion shifts probability mass from an otherwise locally Gaussian return density by adding time-varying skewness (through leverage) and time-varying kurtosis (through the volatility-of-volatility). The expansion is local in time and, therefore, naturally suited to price ultra short-tenor instruments, like oDTEs. We document considerable (1) price and (2) hedging improvements as compared to state-of-the-art specifications. We conclude by providing suggestive results on nearly instantaneous predictability by estimating oDTE-based return/variance risk premia.

Wednesday 19 February 2025, h. 14.30

Aula Acquario