Primary Auction Information, Price Discovery, and Liquidity in Carbon Futures

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Abstract

This paper examines price and liquidity dynamics in European carbon futures around the publication of primary auction results in the European Union Emissions Trading System. Because auction outcomes are released at predetermined times while futures trade continuously, they provide a clean setting to study incremental information arrival. Using five-minute intraday data from 2022–2025, we document statistically significant price adjustments at announcement and systematic liquidity responses consistent with heightened information arrival. We further exploit variation in auction outcomes, measured by auction price surprises and bidding intensity, to quantify how the informational content of auctions shapes price adjustments and liquidity dynamics. The findings show that primary-market auctions meaningfully contribute to secondary-market price discovery in carbon markets, highlighting their role not only as an allocation mechanism but also as a source of information that enhances short-run market efficiency.