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Emissions Trading Systems with Cap Adjustments*

Sascha Kollenberg[a †] Luca Taschini[b ‡]

[a] *University of Duisburg-Essen*

[b] *London School of Economics*

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Abstract

Emissions Trading Systems (ETSs) with fixed caps lack provisions to address systematic imbalances in the supply and demand of permits due to changes in the state of the regulated economy. We propose a mechanism which adjusts the allocation of permits based on the current bank of permits. The mechanism spans the spectrum between a pure quantity instrument and a pure price instrument. We solve the firms' emissions control problem and obtain an explicit dependency between the key policy stringency parameter – the adjustment rate – and the firms' abatement and trading strategies. We present an analytical tool for selecting the optimal adjustment rate under both risk-neutrality and risk-aversion, which provides an analytical basis for the regulator's choice of a responsive ETS policy.

Keywords: EU ETS Reform; Dynamic Allocation; Policy Design; Responsiveness; Resilience; Supply Management Mechanism; Risk-Aversion.

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†Address: Chair for Energy Trading and Finance, University of Duisburg-Essen, Universitätsstraße 12, 45141 Essen, Germany. E-mail: `sascha.kollenberg@uni-due.de`. Tel: +49 (0)201 183 4964.

‡Address: The Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science, Houghton St - London WC2A 2AE, UK. E-mail: `l.taschini1@lse.ac.uk`. Tel: +44 (0)20 7852 3736.