

REAPING THE CARBON RENT: ABATEMENT AND OVER-ALLOCATION PROFITS IN THE EUROPEAN CEMENT INDUSTRY, INSIGHTS FROM AN LMDI DECOMPOSITION

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We analyse variations of carbon emissions in the European cement industry from 1990 to 2011, at the European level (EU 27), and at the national level for six major producers (Germany, France, Spain, United Kingdom, Italy and Poland). We apply a Log-Mean Divisia Index (LMDI) method, crossing data from three databases: the Getting the Numbers Right (GNR) database developed by the Cement Sustainability Initiative, the European Union Transaction Log (EUTL), and the Eurostat International Trade database.

Our decomposition method allows disentangling seven channels of emissions change: activity, clinker trade, clinker share, alternative fuels, thermal and electric energy efficiency, and electricity decarbonisation. We find that, apart from a slow trend of emissions reductions coming from technological improvements (first from a decrease in the clinker share, then from an increase in alternative fuels), most of the emissions changes can be attributed to the activity effect.

Using counterfactual scenarios, we estimate that the introduction of the EU ETS brought small but positive technological abatement ($2.0\% \pm 1.1\%$ between 2005 and 2011). Moreover, we find that the European cement industry have gained 3.5 billion euros of “overallocation profits”, mostly due to the slowdown of production.