

Carbon Leakage or Bridging the Energy Efficiency Gap: The case of the Japanese Emission Trading Scheme

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Abstract

Local governments in two of forty-seven prefectures in Japan, Tokyo and Saitama, introduced Cap-and-Trade Emission Trading Schemes in 2010 and 2011, respectively. These schemes require large-scale facilities located in Tokyo and Saitama to reduce CO₂ emissions generated from energy consumption to certain levels. There are several literatures reporting that the policy implementation has reduced CO₂ emissions by the compliance facilities to some extent. However, there remains a concern about an issue of “carbon leakage” that can lead to an increase in CO₂ emission from non-regulated facilities, that has not been examined yet.

In this study, we employ a difference-in-difference analysis using a facility-level panel data to investigate whether a compliance institute (the owner of compliance facilities) increase CO₂ emission at large-scale facilities outside Tokyo and Saitama. The preliminary results suggest that the compliance institute reduces CO₂ emission at large-scale facilities outside Tokyo and Saitama. This finding implies that once a facility faces such a severe regulation and its institute starts investing energy-efficient appliances and/or learning a better way to save energy, these practices are applied also to other facilities under the same institute. In other words, the result may reflect the fact that introducing the Cap-and-Trade Emission Trading Schemes in Japan contributed to reduce the so-called energy efficiency gap, whose positive effect exceeded the negative effect of emission leakage.