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Possible impacts of environmental taxes, subsidies and emissions trading on the foundry industry, a supporting industry for the machinery industry (e.g., automobile) : a domestic and global analysis

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Abstract

To create a more practical model for comparing the long-run impact of environmental taxes and subsidies on an industry using partial equilibrium analysis, this paper examines the long-run impact of (1) a CO_2 tax, (2) subsidies for CO_2 emissions reduction (e.g., favourable tax treatment for investment in equipment with advanced technology that can reduce real CO_2 emissions) and (3) CO_2 emissions trading on the foundry industry, which is a supporting industry for the machinery industry (e.g,, automobile) both domestically and globally. Energy intensity is considered as a key parameter indicating the state of energy conservation technology for equipment. The model was used to estimate the possibilities of (1) analysing the above 3 measures within the same framework, (2) a serious impact on the Japanese foundry industry by the CO_2 tax, (3) global and local reductions in industrial CO_2 emissions by a subsidy, (4) serious difficulties in the implementation of emissions trading, (5) CO_2 emissions trading having basically the same impact as the tax or subsidy, (6) increases in global industrial CO_2 emissions by a tax introduced in industrialised countries only.