Impact of Sino-Japan trade on Energy use and CO2 emission —Application of Sino-Japan international input-output table

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Along with the active trade in goods and services between China and Japan, energy use and environment issues also become complex. Under the support of Japan International Cooperation Agency (JICA), a multi-regional input-output table of energy use and CO2 emission for China and Japan is established in this paper. Based on the table, this study puts emphasis on the relation between Japan and China in energy use and CO2 emission in 2007 by employing a series of models. The paper not only evaluates the interregional impact of final demand on energy use and CO2 emission of China and Japan, but also proposes a method to evaluate the energy use and CO2 emissions embodied in bilateral trade using international input-output table. Besides, by supposing a non-trade scenario, the paper also estimates the effect of Sino-Japan trade on energy use and CO2 emission of China and Japan. The results indicate that for the same production in 2007 in bilateral trade, China not only has consumed more energy, but also has discharged more CO2 than Japan. For both Japan and China, most of their energy use and CO2 emission are ascribed to their own domestic final demand. But compared with Japan, more energy use and CO2 emission of China is generated by the final demand of foreign countries. In Sino-Japan trade of 2007, China is net importer of goods and services, but net ‘exporter’ of energy and CO2. The results also witness that Sino-Japan trade is helpful to reduce energy consumption and CO2 emission of China, while drive up that of Japan, but overall, the Sino-Japan trade is beneficial to the environment.