Session Two

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The measurement of CO_2 embodiments in international trade:
Evidence from the OECD Input-Output Tables for the mid 1990s – early 2000s

Efforts such as Kyoto protocol to reduce the greenhouse gas (GHG) emission which is linked to the global climate change might fail to reduce the global emission level of GHG, if the domestic productions of the ratified states relocate their production activities abroad, and/or substituted to import goods from non-energy efficient countries. Obviously, the increase in imports from more GHG intensive countries goes against the purpose of the protocols. This paper analyses the international transfer effects of GHG emissions using the input-output and bilateral trade data of OECD and energy statistics of IEA. The simulation result under base case scenario shows that 10 OECD countries have reduced the production basis CO2 emissions, and but the consumption basis emissions were increased in 25 OECD countries in 1995-2000. About half (54%) of the world increases in the CO2 emissions is produced in non-OECD countries, and the two-third of the increase in the consumption basis emissions has roots in the emissions by OECD countries. The net exports of CO_2 emissions in the early 2000s are negative in the large OECD countries such as the United States (-0.9Gt), Japan (-0.3Gt), and four large EU countries (the United Kingdom, Germany, Italy, and France: total -0.6Gt). On the other hand, four major non-OECD countries, Russia (0.6 Gt), China (0.5 Gt), Indonesia (0.06 Gt) and India (0.06 Gt) accounted for 80% of the non-OECD group's positive CO2 trade surplus.