

Melting Ice Caps and the Economic Impact of Opening the Northern Sea Route

Topic: CGE Applications to Handle Complex Data Issues

Author: Hugo Rojas-Romagosa

Besides the environmental effects, another consequence of the melting Arctic ice caps is the possibility of opening up the Northern Sea Route (NSR) for high volume commercial traffic. This shipping route will connect North East Asia (i.e. Japan, South Korea and China) with Northwestern Europe through the Arctic Ocean. This represents a sizeable reduction in shipping distances and a decrease in the average transportation days by around one-third compared to the usual Southern Sea Route. We use econometric techniques as well as a computable general equilibrium (CGE) model to examine the economic impact of the opening of the Northern Sea Route. The process will involve a dramatic shift of bilateral trade flows between Asia and Europe, diversion of trade within Europe, heavy shipping traffic in the Arctic, and a substantial drop in traffic through Suez. These reductions translate not only into fuel savings and overall transport costs, but also to significant transport time savings that may effectively force supply chains in industries between East Asia and Europe to change. Therefore, the estimated redirection of trade has major geopolitical implications linked to both a drop in traffic on the Southern Sea Route (i.e. Suez) and heavy traffic along ecologically sensitive Arctic routes.