

Abstract

In this thesis we carry out two empirical exercises and one theoretical model is constructed to find out the linkage between fragmentation and environment. In the first empirical exercise, we consider one form of production fragmentation, i.e., outsourcing and find that the cost of environmental input (we considered energy prices as a proxy for that) influences outsourcing decisions of Indian manufacturing firms. This indicate that larger firms tend to outsource production in part to smaller firms or informal units in order to cope with rising energy prices. This may lead to a rise in pollution since the informal units faces relatively laxer environmental regulation. In our second empirical exercise, we focus on the other aspect of production fragmentation namely intra-industry trade. The empirical analysis in this chapter deals with eight south Asian countries in order to estimate if export and import of intermediate products affect the emission of carbon dioxide in these countries. The main results indicate that greater fragmentation indeed leads to more emission, although deepening industrial base moderates the overall impact. Finally, we construct a theoretical model which includes three sectors: a labour-intensive export sector, a capital-intensive import competing sector (which is used as an intermediate good) that generates pollution and a non-traded sector which uses the import competing good. The model also consists of abatement cost, an environmental tax and a tariff rate. The results suggest that at a given threshold level of abatement cost, withdrawal of tariff rate lowers emission. On the other hand, if abatement cost is above a threshold level trade policy becomes relatively ineffective while if abatement cost is below the threshold level, trade policy is much more effective in changing the level of emissions. Thus, the analyses of this thesis suggest that production fragmentation can have significant environmental impacts. Addressing these impacts will require coordinated efforts across different actors in the production chain.