

Indirect Pollution Haven Hypothesis in a context of Global Value Chain

Topic: Environmental IO models 5

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Firms locate different stages of their production in third countries with the aim of reducing costs (labour, institutional, raw materials, etc. and also environmental costs), increasing their flexibility and, finally, generating growing economies of scale. This international fragmentation of production has led to a big increase in international trade of final goods and, particularly, intermediate inputs. This paper investigates whether there is a positive or negative link between value added provided by different countries to the global production chains and their environmental impact. In order to do this we develop a multi-regional input-output model that allows us to isolate the different rounds or stages of production required by a good to reach final demand, and in this way, to calculate emissions generated by this product in several countries.

The impact on climate change from global value chains depends on three factors. First, the technology used in the factory located in the emerging country. Second, the differences in energy and environmental intensity that exist along the chain of suppliers between the countries of origin and destination. Third, emissions linked to the growth in international trade of these components (Cadarso et al., 2010). A negative relationship between total value added and total CO₂ emissions linked to global production chains, and focused on emerging countries, will show a disconnection between economic and environmental costs. Firms would not take into account the indirect costs on the environment when making decisions on location or on origin of their suppliers, as they do not internalise these costs. This would support an indirect pollution haven hypothesis, as the fall in trade barriers would have implied a transformation of global production chains that, together with a growth in trade, would boost global emissions. This increase would not be due to using a technique that is directly less efficient in terms of emissions, but because of their linkage effects on production and emissions in the country of destination and on the emissions linked to international freight transport.