Pollution Exporting Example

Assume global market for dirty goods is in equilibrium $\Rightarrow$ global Q_D = global Q_S

@ t=0 $\Rightarrow$ global Q_D = global Q_S = 100
$\Rightarrow$ OECD Q_D = 50
$\Rightarrow$ OECD Q_S = 50
$\Rightarrow$ non-OECD Q_D = 50
$\Rightarrow$ non-OECD Q_S = 50

$\therefore$ OECD responsible for 50% of global demand and 50% of global supply at t=0. & non-OECD responsible for 50% global demand and 50% global supply at t=0.

@ t=1 $\Rightarrow$ increased specialization due to trade has resulted in OECD shifting production out of dirty goods and into clean goods
$\Rightarrow$ simultaneously demand for dirty goods has also fallen in OECD nations (due to income growth resulting from increased trade)
$\Rightarrow$ OECD Q_S = 40 ($\Rightarrow$ 20% reduction in dirty goods production)
$\Rightarrow$ OECD Q_D = 25 ($\Rightarrow$ 50% reduction in dirty goods demand)
$\Rightarrow$ non-OECD Q_S = 35 ($\Rightarrow$ 30% reduction in dirty goods production)
$\Rightarrow$ non-OECD Q_D = 50 ($\Rightarrow$ no change in demand for dirty goods)
$\Rightarrow$ global Q_D = global Q_S = 75

$\therefore$ OECD now responsible for just 33% of global demand and 53% of global supply $\Rightarrow$ net effect of the change in OECD demand and supply is pollution *imports* into OECD nations and out of non-OECD nations, despite the fact that OECD nations have specialized in clean goods.

Problems with this view
$\Rightarrow$ empirical evidence is mixed (at best)
$\Rightarrow$ depends critically upon how we define "dirty goods"
$\Rightarrow$ tells us nothing about concentration of production within "non-OECD" nations
ie. @ t=0 non-OECD Q_S = 50 split between 2 producers (25 units each)
@ t=1 now non-OECD Q_S = 35 produced by just 1 nation (concentration/pollution imports within non-OECD)

For more detailed discussion involving pollution exports between the US and Mexico see Grossman and Krueger (1992), "Environmental Impact of NAFTA". Rothman and de Bruyn (1998, p. 145) dispense with this "inverse exports" argument very efficiently.