

Table 1: Multi-country studies on the pollution havens hypothesis

Paper	Dependent variable	Environmental measure	(# of countries; Main Findings # years)
Low & Yeats (1992)	RCAs for polluting industries	PACE	109 ; 1965-88 RCAs ↑ in polluting industries for LDCs RCAs ↓ in polluting industries in DCs
Hettige, Lucas & Wheeler (1992)	TRI per unit of output	Toxic release based on UE EPA TRI	88 ; 1960-88 Toxic intensity ↑ in DCs in 60s (↓ in 70s and 80s) Toxic intensity ↑ in LDCs in 70s & 80s. Higher toxic intensity in economies closed to trade Net exports not determined by environmental stringency
Tobey (1990)	Net exports (of - based industries)	Ordinal index 1-7	23; 1977
Grether & de Melo (1996)	RCAs for polluting industries	PACE	53; 1965-90
Van Beers & Van den Bergh (1997)	Bilateral trade in 1992	Composite index compiled from OECD data	30 ; 1992
Mani & Wheeler (1999)	Factor intensities, production and consumption ratios	IPPS	OECD; 1965-92 RCAs ↑ in polluting industries for LDCs, stable for DCs Coefficient on environmental index no larger for polluting industries than on average. Pollution intensive output fell steadily in OECD

Notes:

- DCs: developed countries
- LDCs: developing countries
- RCA: Revealed comparative advantage
- TRI: toxic release index
- PACE: Pollution abatement expenditure (US data)
- IPPS : Industrial pollution projection system (Hettige et al. (1995). Composite emission index (see text)

Table 2: Developing countries world trade shares

(percentages except for RCA, RCD))

	Polluting products		All products		Revealed comparative Indices	
	Exports	Imports	Exports	Imports	Advantage (RCA)	Disadvantage (RCD)
	(1)	(2)	(3)	(4)	(1)/(3)	(2)/(4)
81-83	9.08	18.87	9.40	15.73	0.97	1.20
96-98	14.46	22.98	15.93	18.67	0.91	1.23
Average annual growth rate	3.15	1.32	3.58	1.15		

Table 3: North-South bilateral RCAs for polluting products*

Sector	ΔRCA	ΔN	ΔS
Pulp & paper (341)	0.23	0.10	0.13
Ind. Chemicals (351)	0.41	0.21	0.20
Non-metallic minerals (369)	0.38	0.61	-0.22
Iron & Steel (371)	0.66	0.39	0.27
Non-ferrous metals (372)	-0.57	-0.79	0.22

* Computed from equation (6)

Table 4 : Gravity equation: panel estimates

Dependent variable: $\ln M_{ijt}$ (imports of i from j in period t)

Independent	$\ln M_{ijt}$					
	All ^a	POL ^a	ALL1-HT	POL1-HT	ALL2-HT	POL2-HT
$\ln (Y_{it})$	1.84** (30.0)	1.60** (21.5)	1.81** (25.9)	1.50** (19.4)	1.81** (25.9)	1.50** (19.4)
$\ln (Y_{jt})$	1.23** (20.3)	0.99** (13.2)	1.28** (17.5)	0.92** (10.9)	1.27** (17.5)	0.92** (10.9)
$\ln [(Y_{it}/N_{it}) -$	-0.06** (2.6)	0.003 (0.1)	-	-	-0.06** (3.0)	0.007 (0.3)
$\ln \text{DIST}_{ij}$	-	-	-0.83** (16.8)	-1.12** (17.6)	-0.82** (16.6)	-1.12** (17.7)
BOR_{ij}	-	-	1.28** (6.7)	1.30** (5.5)	1.27** (6.6)	1.30** (5.5)
LL_i	-	-	-0.89** (3.7)	0.50 (1.7)	-0.92** (3.74)	0.49 (1.66)
LL_j	-	-	-0.43 (1.78)	-0.42 (1.21)	-0.42 (1.74)	-0.42** (1.22)
$\ln \text{INF}_{it}$	0.15* (2.2)	0.003 (0.04)	0.37** (5.8)	0.46** (6.4)	0.36** (5.7)	0.46** (6.43)
$\ln \text{INF}_{jt}$	0.38** (5.1)	0.70** (7.7)	0.37** (5.8)	0.64* (7.7)	0.39** (6.0)	0.64** (7.7)
$\ln \text{RER}_{ijt}$	-0.34** (15.5)	-0.46** (17.5)	-0.32** (13.4)	-0.40** (14.3)	-0.32** (13.4)	-0.40** (-14.3)
Number of obs (NT)	34563	30345	34563	30345	34563	30345
Number of	2371	2300	2371	2300	2371	2300
R^2 ^{d)}	0.54	0.47	0.46	0.49	0.52	0.52
Bilateral fixed	34.2** <i>F</i> (2370,	31.0** <i>F</i> (2299,2802				
Hausman test W vs. <i>Chi-2</i> (Kw)	265.3** <i>Chi-2</i> (21)	161.3** <i>Chi-2</i>	-		-	
Hausman test HT <i>chi-2</i> (K)			496.6** <i>Chi-2</i> (24)	758.9** <i>Chi-2</i> (24)	413.1** <i>Chi-2</i> (25)	614.7** <i>Chi-2</i> (25)

** and * significant at 99% and 95% respectively (t-student under the corresponding coefficient)

Time dummy variables and constant term not reported .

a) Fixed effect

b) Random estimates (endogenous variables : Y_i , Y_j)

c) Random estimates (endogenous variables : Y_i , Y_j , $(Y_i/N_i - Y_j/N_j)$)

d) Calculated, for HT, from [1-Sum of Square Residuals] / [Total Sum of Squares] on the transformed model. Note that the impact of random specific effects are not in the R^2 but are part of residuals.

Table 5 : Panel estimates by industry

Industries	Equation (9)	
	β_1	α_9
Non-polluting industries	-0.82**	-0.06**
All polluting industries	-1.12**	0.007
Pulp and paper *	-1.40**	0.08*
Industrial Chemicals	-1.23**	0.03
Non-metallic minerals	-1.21**	0.12**
Iron & Steel	-1.12**	0.11**
Non-Ferrous Metals	-0.95**	-0.04

** and * significant at 99% and 95% respectively

* An estimate of -1.40 [-0.95] implies that if trade flows are normalized to 1 for a distance of 1000km, a doubling of distance to 2000 would reduce bilateral trade volume to 0.38 [0.52].
