

Appendix

Table I: Climate Smart Goods

1	380210	Activated carbon
2	392690	Articles of plastics & arts. ofoth. mats. of 39.01-39.14, n.e.s. in Ch.39
3	392010	PVC or polyethylene plastic membrane systems to provide an impermeable base for landfill sites and protect soil under gas stations, oil refineries, etc. from infiltration by pollutants and for reinforcement of soil.
4	560314	Nonwovens, whether or not impregnated, coated, covered or laminated: of manmade filaments; weighing more than 150 g/m ² for filtering wastewater.
5	701931	Thin sheets (voiles), webs, mats, mattresses, boards, and similar nonwoven products.
6	730820	Towers and lattice masts for wind turbine.
7	730900	Containers of any material, of any form, for liquid or solid waste, including formunicipal Ordangerouswaste.
8	732111	Solar driven stoves, ranges, grates, cookers (including those with subsidiary boilers for central heating), barbecues, braziers, gas-rings, plate warmers and similar non-electricdomestic appliances, and parts thereof, of iron or steel.
9	732190	Stoves, ranges, grates, cookers (including those with subsidiary boilers for centralheating), barbecues, braziers, gas-rings, plate warmers and similar non-electric domestic appliances, and parts thereof, of iron or steel.
10	732490	Watersavingshower.
11	761100	Aluminum reservoirs, tanks, vats and similar containers for any material (specificallytanks or vats for anaerobic digesters for biomass gasification).
12	761290	Containers of any material, of any form, for liquid or solid waste, including formunicipal Ordangerouswaste.
13	840219	Vapor generating boilers, not elsewhere specified or included hybrid.
14	840290	Super-heated water boilers and parts of steam generating boilers.
15	840410	Auxiliary plant for steam, water, and central boiler.
16	840490	Parts for auxiliary plant for boilers, condensers for steam, vapor power unit.
17	840510	Producer gas or water gas generators, with or without purifiers.
18	840681	Turbines, steam and other vapor, over 40 MW, not elsewhere specified or included.
19	841011	Hydraulic turbines and water wheels of a power not exceeding 1,000 kW.
20	841090	Hydraulic turbines and water wheels; parts, including regulators.
21	841181	Gas turbines of a power not exceeding 5,000 kW.
22	841182	Gas turbines of a power exceeding 5,000 kW.

23	841581	Compression type refrigerating, freezing equipment incorporating a valve for reversal of cooling/heating cycles (reverse heat pumps).
24	841861	Compression type refrigerating, freezing equipment incorporating a valve for reversal of cooling/heating cycles (reverse heat pumps).
25	841869	Compression type refrigerating, freezing equipment incorporating a valve for reversal of cooling/heating cycles (reverse heat pumps).
26	841919	Solar boiler (waterheater).
27	841940	Distilling or rectifying plant.
28	841950	Solar collector and solar system controller, heat exchanger.
29	841989	Machinery, plant or laboratory equipment whether or not electrically heated (excluding furnaces, ovens etc.) for treatment of materials by a process involving a change of temperature.
30	841990	Medical, surgical or laboratory stabilizers.
31	848340	Gears and gearing and other speed changers (specifically for wind turbines).
32	848360	Clutches and universal joints (specifically for wind turbines).
33	850161	AC generators not exceeding 75 kVA (specifically for all electricity generating renewable energy plants).
34	850162	AC generators exceeding 75 kVA but not 375 kVA (specifically for all electricity generating renewable energy plants).
35	850163	AC generators not exceeding 375 kVA but not 750 kVA (specifically for all electricity generating renewable energy plants).
36	850164	AC generators exceeding 750 kVA (specifically for all electricity generating renewable energy plants).
37	850231	Electric generating sets and rotary converters; wind-powered.
38	850680	Fuel cells use hydrogen or hydrogen-containing fuels such as methane to produce an electric current, through an electrochemical process rather than combustion.
39	850720	Other lead acid accumulators.
40	853710	Photovoltaic system controller.
41	853931	Discharge lamps, (ex ultraviolet), fluorescent.
42	854140	Photosensitive semiconductor devices, including photovoltaic cells whether or not assembled in modules or made up into panels; light-emitting diodes.
43	900190	Mirrors of other than glass (specifically for solar concentrator systems).
44	900290	Mirrors of glass (specifically for solar concentrator systems).
45	903210	Thermostats.
46	903220	Manostats.
47	700800	Multiple-walled insulating units of glass

48	730431	Tubes, pipes & hollow profiles (excl. of 7304.10-7304.29), seamless, of circular cross-section, of cold-drawn/cold-rolled (cold-reduced) steel
49	730441	Tubes, pipes & hollow profiles (excl. of 7304.10-7304.39), seamless, of circular cross-section, of stainless steel, cold-drawn/cold-rolled (cold-reduced)
50	730451	Tubes, pipes & hollow profiles (excl. of 7304.10-7304.49), seamless, of circular cross-section, of alloy steel other than stainless steel, cold-drawn/cold-rolled (cold-reduced)
51	840682	Steam turbines & oth. vapour turbines (excl. for marine propulsion), of an output not >40MW
52	841012	Hydraulic turbines & water wheels, of a power >1000kW but not >10000kW
53	841013	Hydraulic turbines & water wheels, of a power >10000kW
54	850239	Electric generating sets n.e.s. in 85.02
55	850300	Parts suit. for use solely/princ. with the machines of 85.01/85.02
56	850440	Staticconverters
57	902830	Electricity meters, incl. calibrating meters therefor
58	903020	Cathode-ray oscilloscopes & cathode-ray oscillographs
59	903031	Multimeters
60	903039	Instruments & app. for meas./checking voltage/current/resistance/power (excl. of 9030.31), without a recording device
61	890790	Floating structures other than inflatable rafts (e.g., rafts (excl. inflatable), tanks, coffer-dams, landing-stages, buoys & beacons)
62	847989	Machines & mech. appls. having individual functions, n.e.s./incl. in Ch.84
63	842129	Filtering/purifying mach. & app. for liquids (excl. of 8421.21-8421.23)
64	842139	Filtering/purifying mach. & app. for gases, other than intake air filters for int. comb.engines

Source: UNESCAP, APTIR, 2011

Table III: List of 96 Industries at 2 Digit Level, HS 2002 given in WITS

HS 2002 Product Code	HS 2002 Product Description	RowNum
01	Live animals	1
02	Meat and edible meat offal	2
03	Fish & crustacean, mollusc & other aquatic invert	3
04	Dairy prod; birds' eggs; natural honey; edible pr	4
05	Products of animal origin, nes or included.	5
06	Live tree & other plant; bulb, root; cut flowers	6
07	Edible vegetables and certain roots and tubers.	7
08	Edible fruit and nuts; peel of citrus fruit or me	8

09	Coffee, tea, mati and spices.	9
10	Cereals	10
11	Prod.mill.indust; malt; starches; inulin; wheat g	11
12	Oil seed, oleagi fruits; miscell grain, seed, fru	12
13	Lac; gums, resins & other vegetable saps & extrac	13
14	Vegetable plaiting materials; vegetable products	14
15	Animal/veg fats & oils & their cleavage products;	15
16	Prep of meat, fish or crustaceans, molluscs etc	16
17	Sugars and sugar confectionery.	17
18	Cocoa and cocoa preparations.	18
19	Prep.of cereal, flour, starch/milk; pastrycooks'	19
20	Prep of vegetable, fruit, nuts or other parts of	20
21	Miscellaneous edible preparations.	21
22	Beverages, spirits and vinegar.	22
23	Residues & waste from the food indust; prepr ani	23
24	Tobacco and manufactured tobacco substitutes	24
25	Salt; sulphur; earth & ston; plastering mat; lime	25
26	Ores, slag and ash.	26
27	Mineral fuels, oils & product of their distillati	27
28	Inorgn chem; compds of prec mtl, radioact element	28
29	Organic chemicals.	29
30	Pharmaceutical products.	30
31	Fertilisers.	31
32	Tanning/dyeing extract; tannins & derivs; pigm et	32
33	Essential oils & resinoids; perf, cosmetic/toilet	33
34	Soap, organic surface-active agents, washing prep	34
35	Albuminoidal subs; modified starches; glues; enzy	35
36	Explosives; pyrotechnic prod; matches; pyrop allo	36
37	Photographic or cinematographic goods.	37
38	Miscellaneous chemical products.	38
39	Plastics and articles thereof.	39
40	Rubber and articles thereof.	40
41	Raw hides and skins (other than furskins) and lea	41
42	Articles of leather; saddlery/harness; travel goo	42
43	Furskins and artificial fur; manufactures thereof	43
44	Wood and articles of wood; wood charcoal.	44

45	Cork and articles of cork.	45
46	Manufactures of straw, esparto/other plaiting mat	46
47	Pulp of wood/of other fibrous cellulosic mat; was	47
48	Paper & paperboard; art of paper pulp, paper/pape	48
49	Printed books, newspapers, pictures & other produ	49
50	Silk.	50
51	Wool, fine/coarse animal hair, horsehair yarn & f	51
52	Cotton.	52
53	Other vegetable textile fibres; paper yarn & wove	53
54	Man-made filaments.	54
55	Man-made staple fibres.	55
56	Wadding, felt & nonwoven; yarns; twine, cordage,	56
57	Carpets and other textile floor coverings.	57
58	Special woven fab; tufted tex fab; lace; tapestri	58
59	Impregnated, coated, cover/laminated textile fabr	59
60	Knitted or crocheted fabrics.	60
61	Art of apparel & clothing access, knitted or croc	61
62	Art of apparel & clothing access, not knitted/cro	62
63	Other made up textile articles; sets; worn clothi	63
64	Footwear, gaiters and the like; parts of such art	64
65	Headgear and parts thereof.	65
66	Umbrellas, walking-sticks, seat-sticks, whips, et	66
67	Prepr feathers & down; arti flower; articles huma	67
68	Art of stone, plaster, cement, asbestos, mica/sim	68
69	Ceramic products.	69
70	Glass and glassware.	70
71	Natural/cultured pearls, prec stones & metals, co	71
72	Iron and steel.	72
73	Articles of iron or steel.	73
74	Copper and articles thereof.	74
75	Nickel and articles thereof.	75
76	Aluminium and articles thereof.	76
78	Lead and articles thereof.	77
79	Zinc and articles thereof.	78
80	Tin and articles thereof.	79
81	Other base metals; cermets; articles thereof.	80

82	Tool, implement, cutlery, spoon & fork, of base m	81
83	Miscellaneous articles of base metal.	82
84	Nuclear reactors, boilers, mchy & mech appliance;	83
85	Electrical mchy equip parts thereof; sound record	84
86	Railw/tramw locom, rolling-stock & parts thereof;	85
87	Vehicles o/t railw/tramw roll-stock, pts & access	86
88	Aircraft, spacecraft, and parts thereof.	87
89	Ships, boats and floating structures.	88
90	Optical, photo, cine, meas, checking, precision,	89
91	Clocks and watches and parts thereof.	90
92	Musical instruments; parts and access of such art	91
93	Arms and ammunition; parts and accessories thereo	92
94	Furniture; bedding, mattress, matt support, cushi	93
95	Toys, games & sports requisites; parts & access t	94
96	Miscellaneous manufactured articles.	95
97	Works of art, collectors' pieces and antiques.	96

Source: WITS Data base

Table III: Trade in 20 Specialized Products of Ecuador with MERCOSUR, ANDEAN, China, Japan, Mexico, United States and India

PartnerName	Year	Trade Flow Name	ECU in 1000 USD
andeancustomsunionwithoutecuador --	2010	Gross Exp.	1591667.804
andeancustomsunionwithoutecuador --	2010	Gross Imp.	1116073.952
China	2010	Gross Exp.	294625.329
China	2010	Gross Imp.	46976.609
India	2010	Gross Exp.	10137.907
India	2010	Gross Imp.	3789.544
Japan	2010	Gross Exp.	398847.687
Japan	2010	Gross Imp.	602.410
latinamericancommonmarket --- mercosur	2010	Gross Exp.	2748685.830
latinamericancommonmarket --- mercosur	2010	Gross Imp.	1773188.192
Mexico	2010	Gross Exp.	73680.365
Mexico	2010	Gross Imp.	14688.304

United States	2010	Gross Exp.	5984676.802
United States	2010	Gross Imp.	2206778.350

Table IV: 213 out of more than 5300 Industries at 6 digit HS level in which Ecuador has Comparative Advantage in Production in 2009

HS 2002	Country	COUNTRY	YEAR	6 DIGIT Product Code	RCA
H2	ECU	Ecuador	2009	560729	1.0155
H2	ECU	Ecuador	2009	392410	1.0165
H2	ECU	Ecuador	2009	081340	1.0169
H2	ECU	Ecuador	2009	520942	1.0236
H2	ECU	Ecuador	2009	721011	1.0303
H2	ECU	Ecuador	2009	392220	1.0453
H2	ECU	Ecuador	2009	480451	1.0658
H2	ECU	Ecuador	2009	391590	1.0675
H2	ECU	Ecuador	2009	392190	1.1048
H2	ECU	Ecuador	2009	902129	1.1057
H2	ECU	Ecuador	2009	551321	1.1185
H2	ECU	Ecuador	2009	441129	1.1317
H2	ECU	Ecuador	2009	740400	1.1540
H2	ECU	Ecuador	2009	611790	1.1630
H2	ECU	Ecuador	2009	681190	1.1632
H2	ECU	Ecuador	2009	480525	1.1671
H2	ECU	Ecuador	2009	854072	1.1679
H2	ECU	Ecuador	2009	210210	1.1700
H2	ECU	Ecuador	2009	830990	1.1709
H2	ECU	Ecuador	2009	902121	1.1739
H2	ECU	Ecuador	2009	580500	1.1847
H2	ECU	Ecuador	2009	721720	1.1908
H2	ECU	Ecuador	2009	160520	1.1947
H2	ECU	Ecuador	2009	852721	1.2000
H2	ECU	Ecuador	2009	841810	1.2069
H2	ECU	Ecuador	2009	780110	1.2698
H2	ECU	Ecuador	2009	830910	1.2788
H2	ECU	Ecuador	2009	540110	1.2796
H2	ECU	Ecuador	2009	841229	1.2821

H2	ECU	Ecuador	2009	820719	1.3358
H2	ECU	Ecuador	2009	730630	1.3581
H2	ECU	Ecuador	2009	600621	1.3672
H2	ECU	Ecuador	2009	480519	1.3816
H2	ECU	Ecuador	2009	691010	1.4036
H2	ECU	Ecuador	2009	071332	1.4523
H2	ECU	Ecuador	2009	180200	1.5204
H2	ECU	Ecuador	2009	580429	1.5239
H2	ECU	Ecuador	2009	480830	1.5367
H2	ECU	Ecuador	2009	380890	1.5391
H2	ECU	Ecuador	2009	550932	1.5417
H2	ECU	Ecuador	2009	100890	1.5566
H2	ECU	Ecuador	2009	940290	1.5702
H2	ECU	Ecuador	2009	160419	1.5887
H2	ECU	Ecuador	2009	401590	1.6124
H2	ECU	Ecuador	2009	740110	1.6230
H2	ECU	Ecuador	2009	960810	1.6504
H2	ECU	Ecuador	2009	870210	1.6510
H2	ECU	Ecuador	2009	480810	1.6600
H2	ECU	Ecuador	2009	200510	1.6870
H2	ECU	Ecuador	2009	540239	1.6984
H2	ECU	Ecuador	2009	271019	1.7119
H2	ECU	Ecuador	2009	843221	1.7345
H2	ECU	Ecuador	2009	140110	1.7438
H2	ECU	Ecuador	2009	611511	1.7596
H2	ECU	Ecuador	2009	760820	1.7631
H2	ECU	Ecuador	2009	470720	1.7856
H2	ECU	Ecuador	2009	160415	1.7956
H2	ECU	Ecuador	2009	071022	1.8433
H2	ECU	Ecuador	2009	760529	1.8925
H2	ECU	Ecuador	2009	740321	1.8934
H2	ECU	Ecuador	2009	610331	1.9012
H2	ECU	Ecuador	2009	480449	1.9271
H2	ECU	Ecuador	2009	540251	1.9299
H2	ECU	Ecuador	2009	392020	1.9583
H2	ECU	Ecuador	2009	071410	1.9855

H2	ECU	Ecuador	2009	180310	10.0348
H2	ECU	Ecuador	2009	550952	10.1456
H2	ECU	Ecuador	2009	140190	10.4097
H2	ECU	Ecuador	2009	060390	10.5258
H2	ECU	Ecuador	2009	240110	10.6413
H2	ECU	Ecuador	2009	200899	10.8063
H2	ECU	Ecuador	2009	482020	10.9693
H2	ECU	Ecuador	2009	650400	11.0853
H2	ECU	Ecuador	2009	560210	11.4382
H2	ECU	Ecuador	2009	691090	11.4788
H2	ECU	Ecuador	2009	081190	11.4863
H2	ECU	Ecuador	2009	030342	12.3346
H2	ECU	Ecuador	2009	030344	13.0412
H2	ECU	Ecuador	2009	080720	14.9536
H2	ECU	Ecuador	2009	581100	144.3902
H2	ECU	Ecuador	2009	200799	15.0508
H2	ECU	Ecuador	2009	540252	15.1690
H2	ECU	Ecuador	2009	650200	155.4081
H2	ECU	Ecuador	2009	030410	16.2073
H2	ECU	Ecuador	2009	170410	16.8875
H2	ECU	Ecuador	2009	030341	17.4121
H2	ECU	Ecuador	2009	080450	17.7824
H2	ECU	Ecuador	2009	100610	18.6659
H2	ECU	Ecuador	2009	030339	19.1615
H2	ECU	Ecuador	2009	151321	19.2521
H2	ECU	Ecuador	2009	270750	19.4288
H2	ECU	Ecuador	2009	230120	19.6393
H2	ECU	Ecuador	2009	391723	2.0072
H2	ECU	Ecuador	2009	340120	2.0256
H2	ECU	Ecuador	2009	720410	2.0762
H2	ECU	Ecuador	2009	151790	2.1184
H2	ECU	Ecuador	2009	640419	2.1241
H2	ECU	Ecuador	2009	442190	2.1291
H2	ECU	Ecuador	2009	030229	2.1636
H2	ECU	Ecuador	2009	230990	2.2349
H2	ECU	Ecuador	2009	090411	2.3542

H2	ECU	Ecuador	2009	071390	2.3858
H2	ECU	Ecuador	2009	390750	2.4056
H2	ECU	Ecuador	2009	630691	2.4214
H2	ECU	Ecuador	2009	511000	2.4300
H2	ECU	Ecuador	2009	382319	2.4719
H2	ECU	Ecuador	2009	110610	2.4863
H2	ECU	Ecuador	2009	030520	2.5216
H2	ECU	Ecuador	2009	051191	2.5237
H2	ECU	Ecuador	2009	071333	2.5438
H2	ECU	Ecuador	2009	550931	2.5753
H2	ECU	Ecuador	2009	845020	2.5881
H2	ECU	Ecuador	2009	081110	2.6299
H2	ECU	Ecuador	2009	731512	2.6314
H2	ECU	Ecuador	2009	410390	2.6661
H2	ECU	Ecuador	2009	761490	2.6793
H2	ECU	Ecuador	2009	251512	2.7396
H2	ECU	Ecuador	2009	170490	2.7653
H2	ECU	Ecuador	2009	630140	2.7928
H2	ECU	Ecuador	2009	441299	2.8911
H2	ECU	Ecuador	2009	960719	2.9173
H2	ECU	Ecuador	2009	060240	2.9702
H2	ECU	Ecuador	2009	521142	2.9723
H2	ECU	Ecuador	2009	030623	2.9799
H2	ECU	Ecuador	2009	790390	2.9882
H2	ECU	Ecuador	2009	150790	20.2600
H2	ECU	Ecuador	2009	640192	20.5715
H2	ECU	Ecuador	2009	440724	209.9347
H2	ECU	Ecuador	2009	732111	21.3406
H2	ECU	Ecuador	2009	080300	214.1825
H2	ECU	Ecuador	2009	210111	22.8189
H2	ECU	Ecuador	2009	030343	23.2776
H2	ECU	Ecuador	2009	521141	23.7559
H2	ECU	Ecuador	2009	030231	234.8317
H2	ECU	Ecuador	2009	030349	27.7126
H2	ECU	Ecuador	2009	080430	29.0371
H2	ECU	Ecuador	2009	030232	3.1417

H2	ECU	Ecuador	2009	090111	3.1802
H2	ECU	Ecuador	2009	845012	3.2275
H2	ECU	Ecuador	2009	870421	3.2561
H2	ECU	Ecuador	2009	220710	3.2659
H2	ECU	Ecuador	2009	040110	3.4176
H2	ECU	Ecuador	2009	190532	3.4516
H2	ECU	Ecuador	2009	382312	3.4681
H2	ECU	Ecuador	2009	030559	3.4710
H2	ECU	Ecuador	2009	200590	3.5786
H2	ECU	Ecuador	2009	440890	3.6048
H2	ECU	Ecuador	2009	030379	3.6527
H2	ECU	Ecuador	2009	180320	3.6665
H2	ECU	Ecuador	2009	200551	3.7394
H2	ECU	Ecuador	2009	151329	3.7923
H2	ECU	Ecuador	2009	440399	3.8004
H2	ECU	Ecuador	2009	551341	3.8550
H2	ECU	Ecuador	2009	740322	3.8818
H2	ECU	Ecuador	2009	740821	3.9123
H2	ECU	Ecuador	2009	551512	3.9424
H2	ECU	Ecuador	2009	841382	3.9767
H2	ECU	Ecuador	2009	650100	34.2127
H2	ECU	Ecuador	2009	521112	34.4334
H2	ECU	Ecuador	2009	151110	34.7290
H2	ECU	Ecuador	2009	591131	34.8201
H2	ECU	Ecuador	2009	200540	35.1679
H2	ECU	Ecuador	2009	071490	35.4994
H2	ECU	Ecuador	2009	200980	36.6786
H2	ECU	Ecuador	2009	151190	4.0921
H2	ECU	Ecuador	2009	151620	4.1298
H2	ECU	Ecuador	2009	030329	4.1557
H2	ECU	Ecuador	2009	611520	4.1613
H2	ECU	Ecuador	2009	160540	4.2641
H2	ECU	Ecuador	2009	200819	4.2747
H2	ECU	Ecuador	2009	320300	4.4758
H2	ECU	Ecuador	2009	030234	4.5269
H2	ECU	Ecuador	2009	180500	4.5890

H2	ECU	Ecuador	2009	030420	4.7840
H2	ECU	Ecuador	2009	720441	4.8523
H2	ECU	Ecuador	2009	180100	43.0211
H2	ECU	Ecuador	2009	160413	43.6109
H2	ECU	Ecuador	2009	200891	492.3349
H2	ECU	Ecuador	2009	220720	5.2962
H2	ECU	Ecuador	2009	282490	5.3659
H2	ECU	Ecuador	2009	520943	5.3997
H2	ECU	Ecuador	2009	030269	5.4959
H2	ECU	Ecuador	2009	842481	5.5893
H2	ECU	Ecuador	2009	780191	5.8136
H2	ECU	Ecuador	2009	180400	5.9946
H2	ECU	Ecuador	2009	070410	50.9050
H2	ECU	Ecuador	2009	121140	51.8823
H2	ECU	Ecuador	2009	530590	52.6017
H2	ECU	Ecuador	2009	010620	6.0976
H2	ECU	Ecuador	2009	960711	6.1924
H2	ECU	Ecuador	2009	871420	6.6318
H2	ECU	Ecuador	2009	350300	6.8441
H2	ECU	Ecuador	2009	841392	6.9572
H2	ECU	Ecuador	2009	410691	60.4764
H2	ECU	Ecuador	2009	030613	65.5791
H2	ECU	Ecuador	2009	731300	7.0505
H2	ECU	Ecuador	2009	560811	7.2157
H2	ECU	Ecuador	2009	150420	7.2583
H2	ECU	Ecuador	2009	441039	7.6309
H2	ECU	Ecuador	2009	551311	7.8919
H2	ECU	Ecuador	2009	731021	7.9283
H2	ECU	Ecuador	2009	060310	71.2811
H2	ECU	Ecuador	2009	160414	76.0869
H2	ECU	Ecuador	2009	030490	8.1029
H2	ECU	Ecuador	2009	440349	8.4478
H2	ECU	Ecuador	2009	270900	8.5413
H2	ECU	Ecuador	2009	291822	8.9697
H2	ECU	Ecuador	2009	960630	81.8677
H2	ECU	Ecuador	2009	441214	9.1791

H2	ECU	Ecuador	2009	630533	9.3292
H2	ECU	Ecuador	2009	071029	9.3305
H2	ECU	Ecuador	2009	030239	9.6216
H2	ECU	Ecuador	2009	160420	99.4395

Source

Table V: 238 out of more than 5300 Industries at 6 digit HS level in which Ecuador has Comparative Advantage in Production in 2010

HS 2002	Country	COUNTRY	YEAR	6 DIGIT Product Code	RCA
H2	ECU	Ecuador	2010	330119	1.0072
H2	ECU	Ecuador	2010	591110	1.0179
H2	ECU	Ecuador	2010	551321	1.0199
H2	ECU	Ecuador	2010	640419	1.0419
H2	ECU	Ecuador	2010	681310	1.0426
H2	ECU	Ecuador	2010	540233	1.0633
H2	ECU	Ecuador	2010	401590	1.1022
H2	ECU	Ecuador	2010	852721	1.1197
H2	ECU	Ecuador	2010	110311	1.1379
H2	ECU	Ecuador	2010	253090	1.1380
H2	ECU	Ecuador	2010	843490	1.1549
H2	ECU	Ecuador	2010	110610	1.1559
H2	ECU	Ecuador	2010	401490	1.1652
H2	ECU	Ecuador	2010	830990	1.1700
H2	ECU	Ecuador	2010	030371	1.1731
H2	ECU	Ecuador	2010	382319	1.1878
H2	ECU	Ecuador	2010	160520	1.1998
H2	ECU	Ecuador	2010	610331	1.2017
H2	ECU	Ecuador	2010	740400	1.2152
H2	ECU	Ecuador	2010	441129	1.2220
H2	ECU	Ecuador	2010	060491	1.2366
H2	ECU	Ecuador	2010	721661	1.2420
H2	ECU	Ecuador	2010	843230	1.2628
H2	ECU	Ecuador	2010	841920	1.2635
H2	ECU	Ecuador	2010	630631	1.2722
H2	ECU	Ecuador	2010	870431	1.2747

H2	ECU	Ecuador	2010	843850	1.2762
H2	ECU	Ecuador	2010	760529	1.2766
H2	ECU	Ecuador	2010	210210	1.2774
H2	ECU	Ecuador	2010	730630	1.2822
H2	ECU	Ecuador	2010	843680	1.2970
H2	ECU	Ecuador	2010	721622	1.3036
H2	ECU	Ecuador	2010	843359	1.3316
H2	ECU	Ecuador	2010	847740	1.3354
H2	ECU	Ecuador	2010	081110	1.3462
H2	ECU	Ecuador	2010	392220	1.3583
H2	ECU	Ecuador	2010	520942	1.3776
H2	ECU	Ecuador	2010	848050	1.3808
H2	ECU	Ecuador	2010	271019	1.3844
H2	ECU	Ecuador	2010	540110	1.3894
H2	ECU	Ecuador	2010	401511	1.3896
H2	ECU	Ecuador	2010	820719	1.4020
H2	ECU	Ecuador	2010	350110	1.4070
H2	ECU	Ecuador	2010	110422	1.4073
H2	ECU	Ecuador	2010	391590	1.4143
H2	ECU	Ecuador	2010	870210	1.4146
H2	ECU	Ecuador	2010	060210	1.4186
H2	ECU	Ecuador	2010	540720	1.4328
H2	ECU	Ecuador	2010	220590	1.4427
H2	ECU	Ecuador	2010	844832	1.4474
H2	ECU	Ecuador	2010	841810	1.4576
H2	ECU	Ecuador	2010	480524	1.4648
H2	ECU	Ecuador	2010	160415	1.4653
H2	ECU	Ecuador	2010	293690	1.4744
H2	ECU	Ecuador	2010	780110	1.4935
H2	ECU	Ecuador	2010	540251	1.4972
H2	ECU	Ecuador	2010	160419	1.5407
H2	ECU	Ecuador	2010	490191	1.5451
H2	ECU	Ecuador	2010	470720	1.5542
H2	ECU	Ecuador	2010	410390	1.6007
H2	ECU	Ecuador	2010	350190	1.6032
H2	ECU	Ecuador	2010	340119	1.6425

H2	ECU	Ecuador	2010	830910	1.7330
H2	ECU	Ecuador	2010	841382	1.7728
H2	ECU	Ecuador	2010	081340	1.7855
H2	ECU	Ecuador	2010	691010	1.8110
H2	ECU	Ecuador	2010	871420	1.8303
H2	ECU	Ecuador	2010	731431	1.8313
H2	ECU	Ecuador	2010	760820	1.8349
H2	ECU	Ecuador	2010	960810	1.8397
H2	ECU	Ecuador	2010	390910	1.8491
H2	ECU	Ecuador	2010	611520	1.8493
H2	ECU	Ecuador	2010	392112	1.8828
H2	ECU	Ecuador	2010	480519	1.8965
H2	ECU	Ecuador	2010	843221	1.9344
H2	ECU	Ecuador	2010	230990	1.9524
H2	ECU	Ecuador	2010	721720	1.9743
H2	ECU	Ecuador	2010	842490	1.9795
H2	ECU	Ecuador	2010	580429	1.9805
H2	ECU	Ecuador	2010	030342	10.2320
H2	ECU	Ecuador	2010	200899	10.3167
H2	ECU	Ecuador	2010	691090	10.8570
H2	ECU	Ecuador	2010	902129	11.0585
H2	ECU	Ecuador	2010	630533	11.3731
H2	ECU	Ecuador	2010	140190	11.4275
H2	ECU	Ecuador	2010	240110	11.8590
H2	ECU	Ecuador	2010	591131	113.8961
H2	ECU	Ecuador	2010	080450	12.0686
H2	ECU	Ecuador	2010	282590	12.1431
H2	ECU	Ecuador	2010	030239	12.2820
H2	ECU	Ecuador	2010	843210	12.3337
H2	ECU	Ecuador	2010	650400	12.4403
H2	ECU	Ecuador	2010	030410	13.0961
H2	ECU	Ecuador	2010	030341	13.4113
H2	ECU	Ecuador	2010	071029	13.5110
H2	ECU	Ecuador	2010	482020	14.1654
H2	ECU	Ecuador	2010	732111	14.9083
H2	ECU	Ecuador	2010	200799	15.0293

H2	ECU	Ecuador	2010	291822	15.1293
H2	ECU	Ecuador	2010	440349	15.3178
H2	ECU	Ecuador	2010	170410	15.6746
H2	ECU	Ecuador	2010	640192	16.0254
H2	ECU	Ecuador	2010	080720	16.9383
H2	ECU	Ecuador	2010	030343	17.2718
H2	ECU	Ecuador	2010	521141	18.2633
H2	ECU	Ecuador	2010	090411	18.5926
H2	ECU	Ecuador	2010	030520	2.0574
H2	ECU	Ecuador	2010	580500	2.1331
H2	ECU	Ecuador	2010	291421	2.1863
H2	ECU	Ecuador	2010	282300	2.2119
H2	ECU	Ecuador	2010	611511	2.2162
H2	ECU	Ecuador	2010	761490	2.2184
H2	ECU	Ecuador	2010	441299	2.3194
H2	ECU	Ecuador	2010	293629	2.3274
H2	ECU	Ecuador	2010	740821	2.3288
H2	ECU	Ecuador	2010	900490	2.3872
H2	ECU	Ecuador	2010	740322	2.4534
H2	ECU	Ecuador	2010	100890	2.4639
H2	ECU	Ecuador	2010	843860	2.4707
H2	ECU	Ecuador	2010	030379	2.5918
H2	ECU	Ecuador	2010	440399	2.6578
H2	ECU	Ecuador	2010	870421	2.6642
H2	ECU	Ecuador	2010	790390	2.6824
H2	ECU	Ecuador	2010	170490	2.6928
H2	ECU	Ecuador	2010	240130	2.7886
H2	ECU	Ecuador	2010	051191	2.8020
H2	ECU	Ecuador	2010	630140	2.8446
H2	ECU	Ecuador	2010	630699	2.8543
H2	ECU	Ecuador	2010	200590	2.8643
H2	ECU	Ecuador	2010	841392	2.8647
H2	ECU	Ecuador	2010	190532	2.8954
H2	ECU	Ecuador	2010	841280	2.9470
H2	ECU	Ecuador	2010	071333	2.9693
H2	ECU	Ecuador	2010	140490	2.9788

H2	ECU	Ecuador	2010	650200	205.5611
H2	ECU	Ecuador	2010	230120	21.3412
H2	ECU	Ecuador	2010	080300	211.3915
H2	ECU	Ecuador	2010	591132	22.2880
H2	ECU	Ecuador	2010	080430	22.6019
H2	ECU	Ecuador	2010	210111	22.6179
H2	ECU	Ecuador	2010	060390	22.6341
H2	ECU	Ecuador	2010	030231	227.8759
H2	ECU	Ecuador	2010	410691	23.1777
H2	ECU	Ecuador	2010	440724	231.4462
H2	ECU	Ecuador	2010	151110	25.8699
H2	ECU	Ecuador	2010	581100	25.8818
H2	ECU	Ecuador	2010	070410	27.2218
H2	ECU	Ecuador	2010	310100	29.8078
H2	ECU	Ecuador	2010	030623	3.0080
H2	ECU	Ecuador	2010	551341	3.0126
H2	ECU	Ecuador	2010	630691	3.0656
H2	ECU	Ecuador	2010	550932	3.0662
H2	ECU	Ecuador	2010	200819	3.1052
H2	ECU	Ecuador	2010	151190	3.2083
H2	ECU	Ecuador	2010	390750	3.2131
H2	ECU	Ecuador	2010	293890	3.2287
H2	ECU	Ecuador	2010	220710	3.2343
H2	ECU	Ecuador	2010	350710	3.2417
H2	ECU	Ecuador	2010	480525	3.3066
H2	ECU	Ecuador	2010	090111	3.3510
H2	ECU	Ecuador	2010	392020	3.4649
H2	ECU	Ecuador	2010	902121	3.5010
H2	ECU	Ecuador	2010	283330	3.6190
H2	ECU	Ecuador	2010	440890	3.6944
H2	ECU	Ecuador	2010	100610	3.7312
H2	ECU	Ecuador	2010	010620	3.7736
H2	ECU	Ecuador	2010	071022	3.7922
H2	ECU	Ecuador	2010	220720	3.8247
H2	ECU	Ecuador	2010	521142	3.8893

H2	ECU	Ecuador	2010	200551	3.8909
H2	ECU	Ecuador	2010	030559	3.9079
H2	ECU	Ecuador	2010	030234	3.9129
H2	ECU	Ecuador	2010	071490	33.1977
H2	ECU	Ecuador	2010	200980	33.4656
H2	ECU	Ecuador	2010	560811	34.5985
H2	ECU	Ecuador	2010	650100	37.1738
H2	ECU	Ecuador	2010	200540	38.4933
H2	ECU	Ecuador	2010	261690	4.0479
H2	ECU	Ecuador	2010	780191	4.0563
H2	ECU	Ecuador	2010	120799	4.0963
H2	ECU	Ecuador	2010	732190	4.1005
H2	ECU	Ecuador	2010	550952	4.2591
H2	ECU	Ecuador	2010	030229	4.2759
H2	ECU	Ecuador	2010	320300	4.5522
H2	ECU	Ecuador	2010	843880	4.5549
H2	ECU	Ecuador	2010	442190	4.5687
H2	ECU	Ecuador	2010	060240	4.5709
H2	ECU	Ecuador	2010	030232	4.5977
H2	ECU	Ecuador	2010	283210	4.7587
H2	ECU	Ecuador	2010	030420	4.8074
H2	ECU	Ecuador	2010	842481	4.9806
H2	ECU	Ecuador	2010	160413	41.8332
H2	ECU	Ecuador	2010	180100	42.5268
H2	ECU	Ecuador	2010	200891	440.0011
H2	ECU	Ecuador	2010	530590	45.3757
H2	ECU	Ecuador	2010	121140	49.6400
H2	ECU	Ecuador	2010	150790	5.1354
H2	ECU	Ecuador	2010	270750	5.5605
H2	ECU	Ecuador	2010	550931	5.6201
H2	ECU	Ecuador	2010	350300	5.6756
H2	ECU	Ecuador	2010	731021	5.7011
H2	ECU	Ecuador	2010	151620	5.8017
H2	ECU	Ecuador	2010	180400	5.8099
H2	ECU	Ecuador	2010	282490	5.8160

H2	ECU	Ecuador	2010	441214	5.8357
H2	ECU	Ecuador	2010	180500	5.9592
H2	ECU	Ecuador	2010	610329	6.2350
H2	ECU	Ecuador	2010	151329	6.3184
H2	ECU	Ecuador	2010	150420	6.3796
H2	ECU	Ecuador	2010	071080	6.8384
H2	ECU	Ecuador	2010	551030	6.8429
H2	ECU	Ecuador	2010	521112	65.8305
H2	ECU	Ecuador	2010	030349	66.5027
H2	ECU	Ecuador	2010	160414	69.1536
H2	ECU	Ecuador	2010	180310	7.1265
H2	ECU	Ecuador	2010	030339	7.1427
H2	ECU	Ecuador	2010	180320	7.3915
H2	ECU	Ecuador	2010	340120	7.4426
H2	ECU	Ecuador	2010	540252	7.6386
H2	ECU	Ecuador	2010	441039	7.7524
H2	ECU	Ecuador	2010	030269	7.8148
H2	ECU	Ecuador	2010	060310	70.0387
H2	ECU	Ecuador	2010	391723	8.0609
H2	ECU	Ecuador	2010	902110	8.1478
H2	ECU	Ecuador	2010	843240	8.3045
H2	ECU	Ecuador	2010	040110	8.3791
H2	ECU	Ecuador	2010	843410	8.4327
H2	ECU	Ecuador	2010	731300	8.4546
H2	ECU	Ecuador	2010	843420	8.9175
H2	ECU	Ecuador	2010	030613	81.8905
H2	ECU	Ecuador	2010	160420	87.4395
H2	ECU	Ecuador	2010	960630	87.6294
H2	ECU	Ecuador	2010	081190	9.2526
H2	ECU	Ecuador	2010	030490	9.4154
H2	ECU	Ecuador	2010	270900	9.5642
H2	ECU	Ecuador	2010	030344	9.8240
H2	ECU	Ecuador	2010	151321	9.9991

Source: Author's work in WITS

Table VI Equations for Trade Creation and Trade Diversion

We follow James and Olareagga,2005.

Domestic prices are given by:

$$p_{g,c}^d = p_{g,c}^w (1 + t_{g,c}) \quad (3)$$

where $p_{g,c}^w$ is the world price of good g imported from c , $t_{g,c}$ is the tariff imposed on imports of good g imported from c , and is defined as:

$$t_{g,c} = t_g^{MFN} (1 - \theta_{g,c}) \quad (4)$$

where t_g^{MFN} is the Most Favored Nation (MFN) tariff imposed on good g , and $\theta_{g,c}$ is the tariff preference ratio on good g when imported from country c .¹

¹ By (4), $\theta_{g,c} = 1 - t_{g,c} / t_g^{MFN}$.

Trade creation

Trade creation is defined as the direct increase in imports following a reduction on the tariff imposed on good g from country c . To obtain this, SMART uses the definition of price elasticity of import demand:

$$\varepsilon_{g,c} = \frac{dm_{g,c}/m_{g,c}}{dp_{g,c}^d/p_{g,c}^d} < 0 \quad (5)$$

Solving (5) for $dm_{g,c}$ we obtain the trade creation ($TC_{g,c}$) evaluated at world prices and associated with the tariff reduction on good g when imported from country c :²

$$TC_{g,c} = p^w \frac{dm_{g,c}}{dp} = p^w \varepsilon_{g,c} m_{g,c} \frac{dt_{g,c}}{(1+t_{g,c})} = \varepsilon_{g,c} m_{g,c} \frac{dt_{g,c}}{(1+t_{g,c})} \quad (7)$$

Equation (7) defines the extent of trade creation on imports of good g from country c .

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If the tariff reduction on good g from country c is a preferential tariff reduction (i.e., it does not apply to other countries, c , then imports from country c are further going to increase due to the substitution away from imports of good g from other countries that becomes relatively more expensive. This is the definition of trade diversion in the SMART model.

In order to measure trade diversion, let us use the definition of the elasticity of substitution, $\sigma_{g,c,\neq c}$ across imports of good g from country c and all other countries (c):

$$\sigma_{g,c,\neq c} = \frac{d \left(\frac{m_{g,c}}{m_{g,\neq c}} \right) / \frac{m_{g,c}}{m_{g,\neq c}}}{d \left(\frac{p_{g,c}}{p_{g,\neq c}} \right) / \frac{p_{g,c}}{p_{g,\neq c}}} < 0$$

$$TD_{g,c} = dm_{g,c} = \frac{m_{g,\neq c} m_{g,c}}{m_{g,\neq c} + m_{g,c}} \frac{dt_{g,c}}{1+t_{g,c}} \sigma_{g,c,\neq c} \quad (12)$$

Table VII: Trade Creation, Trade Diversion and Total Trade Effects of Liberalizing Trade of 238 Products with MERCOSUR

<u>Partner Name</u>	<u>Trade Total Effect in 1000 USD</u>	<u>Trade Creation Effect in 1000 USD</u>	<u>Trade Diversion Effect in 1000 USD</u>	<u>Old Simple Duty Rate</u>	<u>New Simple Duty Rate</u>
World	62,008.734	62,008.734	0.001	11.77	6.59
Argentina	512.963	493.439	19.524	5.67	0.00
Belgium	-80.506	0.000	-80.506	8.44	8.44
Bolivia	234.473	225.201	9.272	7.50	0.00
Brazil	5,618.631	4,552.948	1,065.682	6.20	0.00
Chile	-2,505.149	17.379	-2,522.527	0.06	0.00
China	-2,810.155	0.000	-2,810.155	11.60	11.60
Colombia	38,642.954	30,662.966	7,979.987	12.23	0.00

Finland	-7.880	0.000	-7.880	8.13	8.13
France	-70.493	0.000	-70.493	8.59	8.59
Germany	-134.458	0.000	-134.458	9.50	9.50
Italy	-96.702	0.000	-96.702	8.75	8.75
Japan	-828.724	0.000	-828.724	12.27	12.27
Mexico	-1,240.764	0.000	-1,240.764	10.68	10.68
Netherlands	-15.076	0.000	-15.076	7.21	7.21
Spain	-303.619	0.000	-303.619	10.24	10.24
United Kingdom	-177.004	0.000	-177.004	11.93	11.93
United States	-1,966.266	0.000	-1,966.266	12.11	12.11
Venezuela	9,808.559	7,935.644	1,872.915	11.90	0.00
Uruguay	1.313	1.230	0.083	2.71	0.00
Paraguay	0.177	0.077	0.100	11.72	0.00
Peru	22,642.250	18,119.850	4,522.400	12.68	0.00

Source: author's work in WITS

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What if you could build your future and create the future?

One generation's transformation is the next's status quo. In the near future, people may soon think it's strange that devices ever had to be "plugged in." To obtain that status, there needs to be "The Shift".




Table VII Revenue, Welfare and Consumer Surplus Effects of Liberalizing Trade of 238 products with MERCOUR in 2010

<u>Revenue Effect in 1000 USD</u>	<u>Welfare in 1000 USD</u>	<u>Imports Before in 1000 USD</u>	<u>Import Change</u>	<u>Tariff Revenue in 1000 USD</u>	<u>Tariff New Revenue in 1000 USD</u>	<u>Tariff Change In Revenue in 1000 USD</u>	<u>Consumer Surplus in 1000 USD</u>
-32,972.615	5,863.381	3,053,362.446	62.008.734	359,266.300	205,174.992	-154,091.311	5,689.966

Source: author's work in WITS

Table VIII: Trade Creation Effects of Liberalizing Trade of 238 Products with the China, Japan and the US

<u>Partner Name</u>	<u>Trade Total Effect in 1000 USD</u>	<u>Trade Creation Effect in 1000 USD</u>	<u>Trade Diversion Effect in 1000 USD</u>	<u>Old Simple Duty Rate</u>	<u>New Simple Duty Rate</u>
World	45,743.157	45,743.155	0.001	11.77	7.65
Argentina	-95.350	0.000	-95.350	5.67	5.67
Austria	-11.062	0.000	-11.062	2.54	2.54
Belgium	-32.102	0.000	-32.102	8.44	8.44
Bolivia	-98.524	0.000	-98.524	7.50	7.50
Brazil	-687.729	0.000	-687.729	6.20	6.20
Canada	-17.872	0.000	-17.872	11.41	11.41
Chile	-601.623	0.000	-601.623	0.06	0.06
China	22,452.945	15,970.726	6,482.219	11.60	0.00
Colombia	-3,357.426	0.000	-3,357.426	12.23	12.23
France	-117.360	0.000	-117.360	8.59	8.59
Germany	-107.905	0.000	-107.905	9.50	9.50
Italy	-120.328	0.000	-120.328	8.75	8.75
Japan	23,426.521	14,253.482	9,173.039	12.27	0.00
United Kingdom	-64.391	0.000	-64.391	11.93	11.93
United States	24,290.050	15,518.947	8,771.103	12.11	0.00
Venezuela	-247.008	0.000	-247.008	11.90	11.90
Mexico	-1,091.793	0.000	-1,091.793	10.68	10.68
Netherlands	-8.153	0.000	-8.153	7.21	7.21
Korea, Rep.	-1,495.916	0.000	-1,495.916	10.45	10.45

Peru	-1,565.454	0.000	-1,565.454	12.68	12.68
Spain	-168.490	0.000	-168.490	10.24	10.24
Thailand	-8,971.571	0.000	-8,971.571	13.65	13.65

Table VIII: Welfare, Revenue and Consumer Surplus Effects of Liberalizing Trade OF 238 Products with the China, Japan and the US

<u>Welfare in 1000 USD</u>	<u>Revenue Effect in 1000 USD</u>	<u>Imports Before in 1000 USD</u>	<u>Import Change</u>	<u>Tariff Revenue in 1000 USD</u>	<u>Tariff New Revenue in 1000 USD</u>	<u>Tariff Change In Revenue in 1000 USD</u>	<u>Consumer Surplus in 1000 USD</u>
4,164.738	-35,146.525	3,053,362.44	45.743.157	359,266.30	236,978.974	-122,287.329	4,440.046

Source: author's work in WITS

Table IX: Liberalizing Trade OF 238 Products with the EU27 in 2010

<u>Partner Name</u>	<u>Trade Total Effect in 1000 USD</u>	<u>Trade Creation Effect in 1000 USD</u>	<u>Trade Diversion Effect in 1000 USD</u>	<u>Old Simple Duty Rate</u>	<u>New Simple Duty Rate</u>
World	3,227.968	3,227.968	0.000	11.77	10.58
Argentina	-26.647	0.000	-26.647	5.67	5.67
Austria	53.683	28.156	25.527	2.54	0.00
Belgium	232.872	99.409	133.462	8.44	0.00
Bolivia	-35.433	0.000	-35.433	7.50	7.50
Brazil	-139.523	0.000	-139.523	6.20	6.20
Canada	-4.277	0.000	-4.277	11.41	11.41
Chile	-130.223	0.000	-130.223	0.06	0.06
China	-291.306	0.000	-291.306	11.60	11.60
Colombia	-560.776	0.000	-560.776	12.23	12.23
France	997.024	566.422	430.602	8.59	0.00
Germany	752.843	371.363	381.479	9.50	0.00
Italy	1,015.885	531.426	484.460	8.75	0.00
Japan	-66.192	0.000	-66.192	12.27	12.27
Mexico	-282.787	0.000	-282.787	10.68	10.68

Netherlands	69.341	35.641	33.700	7.21	0.00
Paraguay	-0.094	0.000	-0.094	11.72	11.72
Peru	-394.963	0.000	-394.963	12.68	12.68
Spain	1,286.169	666.652	619.517	10.24	0.00
United Kingdom	693.585	369.266	324.319	11.93	0.00
United States	-330.679	0.000	-330.679	12.11	12.11

Source: author's work in WITS

Table IX: Welfare, Revenue and Consumer Surplus Effects of Liberalizing Trade OF 238 Products with the EU27

<u>Trade Total Effect in 1000 USD</u>	<u>Welfare in 1000 USD</u>	<u>Revenue Effect in 1000 USD</u>	<u>Imports Before in 1000 USD</u>	<u>Import Change</u>	<u>Tariff Revenue in 1000 USD</u>	<u>Tariff New Revenue in 1000 USD</u>	<u>Tariff Change in Revenue in 1000 USD</u>	<u>Consumer Surplus in 1000 USD</u>
3,227.968	367.072	-2,904.662	3,053,362.446	3.227.968	359,266.300	323,425.47	-35,840.829	360.685

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Sources: Keuzegids Master ranking 2013; Elsevier 'Beste Studies' ranking 2012; Financial Times Global Masters in Management ranking 2012

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Table X: Theoretical Justification of Using the Gravity Model (in this Study) and Volume of Trade and Trade Equality

To understand the relationship between dispersions of incomes across countries and volume of trade we refer to the most simple version of the Gravity Model. The most simple version relates volume of trade between two countries is directly proportional to GDP of the exporting country(higher the GDP, higher is the number of varieties produced, more are the varieties traded), the relative size of the importing country approximated by the importing country's share in World GDP and inversely related to the distance between countries. Therefore,

$$\text{Trade} = (\text{GDP}_1 * \text{share}) / \text{Dist}^n = (1/\text{GDP}_w) * (\text{GDP}_1 * \text{GDP}_2) / \text{Dist}^n$$

Start with the GDP of Country 1, GDP_1 . Each of the goods produced in Country 1 is a differentiated product, so they are different from the varieties produced in other countries. Every other country will demand the goods of Country 1 (because they are different from their home produced goods), and the amount of their demand will depend on two factors (1) the relative size of the importing country because larger countries demand more and (2) the distance between two countries because being farther away will lead to higher transportation costs and less trade.

We use the most simple Gravity Model (without distance) to show the relationship between inequality of income and volume of trade. Consider a model of all differentiated goods with same and homothetic tastes. The utility function is Dixit Stiglitz Utility Function with all varieties entering the utility function. Consider three countries (1, 2 and 3) in the entire world. The volume of trade is worked out using the simple matrix below

To Imports from Country

Exports from Country!

	Country1	Country2	Country3	Volume of Trade
Country 1		$\text{GDP}_1 * s_2$	$\text{GDP}_1 * s_3$	$\text{GDP}_1 * s_2 + \text{GDP}_1 * s_3$
Country2	$\text{GDP}_2 * s_1$		$\text{GDP}_2 * s_3$	$\text{GDP}_2 * s_1 + \text{GDP}_2 * s_3$
Country3	$\text{GDP}_3 * s_1$	$\text{GDP}_3 * s_2$		$\text{GDP}_3 * s_1 + \text{GDP}_3 * s_2$
Volume of Trade	$\text{GDP}_2 * s_1 + \text{GDP}_3 * s_1$	$\text{GDP}_1 * s_2 + \text{GDP}_3 * s_2$	$\text{GDP}_1 * s_3 + \text{GDP}_2 * s_3$	Total Volume Of Trade= $\text{GDP}_1 * s_2 + \text{GDP}_1 * s_3 + \text{GDP}_2 * s_1 +$ $\text{GDP}_2 * s_3 + \text{GDP}_3 * s_1 + \text{GDP}_3 * s_2 =$ $\text{GDP}_2 * s_1 + \text{GDP}_3 * s_1 + \text{GDP}_1 * s_2$ $+ \text{GDP}_3 * s_2 + \text{GDP}_1 * s_3 + \text{GDP}_2 * s_3$

Here $s_j = \text{GDP}_j / \text{GDP}_w$ $j=1,2,3$

$$\text{GDP}_1 + \text{GDP}_2 + \text{GDP}_3 = \text{GDP}_w$$

$$\text{Total Volume of Trade} = \text{GDP}_2 * s_1 + \text{GDP}_3 * s_1 + \text{GDP}_1 * s_2 + \text{GDP}_3 * s_2 + \text{GDP}_1 * s_3 + \text{GDP}_2 * s_3$$

Trade in Climate Smart Goods

$$= s_1(\text{GDP}_w - \text{GDP}_1) + s_2(\text{GDP}_w - \text{GDP}_2) + s_3(\text{GDP}_w - \text{GDP}_3) = \text{GDP}_w(s_1 + s_2 + s_3) - \sum s_j \text{GDP}_j = \text{GDP}_w - \sum s_j \text{GDP}_j = \text{GDP}_w(1 - \sum s_j^2) = \text{GDP}_w(1 - H), \text{ where } H \text{ is the Herfindahl Index of Trade Concentration.}$$

Consider now the World with n countries. Also, now countries 1, 2 and 3 form a preferential trading arrangement (say A). See how reducing dispersion of income across countries will increase volume of trade between countries.

$$S_j = \text{GDP}_j / \text{GDP}_w = (\text{GDP}_j / \text{GDP}_A) * (\text{GDP}_A / \text{GDP}_w) = s_{jA} * s_A, \quad \text{where}$$

$$\text{GDP}_1 + \text{GDP}_2 + \text{GDP}_3 = \text{GDP}_A, s_A = \text{GDP}_A / \text{GDP}_w$$

Now Total Volume of Trade (VT) between countries 1, 2 and 3 in a World of n countries =

$\text{GDP}_A s_A - \sum s_j \text{GDP}_j = \text{GDP}_A s_A - \sum s_{jA} * s_A * s_{jA} * \text{GDP}_A = \text{GDP}_A s_A (1 - \sum s_{jA}^2) = \text{GDP}_A s_A (1 - H_A) = \text{VT}_A$. The volume of trade between any other three countries who have formed an economic union (B), will be $\text{VT}_B = \text{GDP}_B s_B (1 - H_B)$. If $s_A = s_B$, then regional group whose $H_A < H_B$, then $\text{VT}_A > \text{VT}_B$. In another words regional groups whose trade is less concentrated than another region whose trade is more concentrated, the volume of trade in the first group (among itself) will be larger. Also, volume of trade and term $(1 - \sum s_{jA}^2)$ is directly and positively related. One can prove that Variance of s_{jA} and term $(1 - \sum s_{jA}^2)$ is inversely related. Therefore, lower dispersion of income across countries in terms of their GDP share in regional GDP will increase volume of trade in the region. Further, in regional group if there are only two countries, then term $(1 - \sum s_{jA}^2)$ is equal to $2s_i * s_j$. Baier and Bergstrand (2001) in his gravity formulation include among traditional variables (size of trading partners and distance and other trade cost), include term $s_i * s_j$ as indicator of dispersion of income between two countries and prices of traded goods in exporting and importing countries. The study also uses Baier and Bergstrand gravity formulation.

Appendix Table XI: Details of the 6 digit products in which Ecuador has RCA Advantage in 2010

0106.20.00	- Reptiles (including snakes and turtles)
0302.29.00	- Other
0302.31.00	- Albacore or white tuna (Thunnus alalunga)
0302.32.00	- Yellowfin tunas (yellowfin) (Thunnus albacares)
0302.34.00	- Bigeye tuna or bigeye (Thunnus obesus)
0302.39.00	- Other
0302.69.00	- Other
0303.39.00	- Other
0303.41.00	- Albacore or white tuna (Thunnus alalunga)
0303.42.00	- Yellowfin tunas (yellowfin) (Thunnus albacares)
0303.43.00	- Skipjack or stripe-bellied bonito
0303.44.00	- Bigeye tuna or bigeye (Thunnus obesus)
0303.49.00	- Other
0303.71.00	- Sardines (Sardina pilchardus, Sardinops spp.), Sardinella (Sardinella spp.) And sprat (Sprattus sprattus)
0303.79.00	- Other:

0304.10.00	- Fresh or chilled:
0304.20.00	- Frozen fillets:
0304.90.00	- Other:
0305.20.00	- Livers and roes of fish, dried, smoked, salted or in brine
0305.59.00	- Other:
0306.13.00	- Shrimps and prawns:
0306.23.00	- Shrimps and prawns:
0401.10.00	- Of a fat content not exceeding 1% by weight
0511.91.00	- Products of fish or crustaceans, molluscs or other aquatic invertebrates, dead animals of Chapter 3:
0602.10	- Unrooted cuttings and slips:
0602.40.00	- Roses, grafted
0603.10.00	- Fresh:
0603.90.00	- Other:
0604.91.00	- Fresh
0704.10.00	- Cauliflowers and headed broccoli ("broccoli")
0710.22.00	- Beans (beans, beans, beans, bean) (<i>Vigna</i> spp., <i>Phaseolus</i> spp.)
0710.29.00	- Other
0710.80	- Other vegetables:
0713.33	- Beans (beans, beans, beans, beans) (<i>Phaseolus vulgaris</i>):
0714.90	- Other:
0803.00	Bananas, including plantains, fresh or dried.
0804.30.00	- Pineapple (pineapple)
0804.50	- Guavas, mangoes and mangosteens:
0807.20.00	- Papayas
0811.10	- Strawberries (strawberries):
0811.90	- Other:
0811.90.10	- Containing added sugar or other sweetening matter
0813.40.00	- Other fruits or nuts
0901.11	- Not decaffeinated:
0904.11.00	- Neither crushed nor ground
1006.10	- Paddy rice (rice "paddy"):
1008.90	- Other cereals:
1103.11.00	- Of wheat
1104.22.00	- Of oats
1106.10.00	- Of the vegetables of heading 07.13
1207.99	- Other:

1211.40.00	- Poppy straw
1401.90.00	- Other
1404.90	- Other:
1504.20	- Fats and fish oils and their fractions, other than liver oils:
1507.90	- Other:
1511.10.00	- Crude oil
1511.90.00	- Other
1513.21	- Crude oil:
1513.29	- Other:
1516.20.00	- Fats and oils and their fractions
1604.13	- Sardines, sardinella and sprats:
1604.14	- Tunas, skipjack and bonito (<i>Sarda</i> spp.)
1604.15.00	- Mackerel
1604.19.00	- Other
1604.20.00	- Other prepared or preserved fish
1605.20.00	- Shrimps and prawns
1704.10	- Chewing gums, including sugar-coated:
1704.90	- Other:
1801.00	Cocoa beans, whole or broken, raw or roasted.
1803.10.00	- Not defatted
1803.20.00	- Degreased totally or partially
1804.00	Butter, cocoa fat and oil.
1805.00.00	Cocoa powder, not containing added sugar or other sweetening matter.
1905.32.00	- Waffles and wafers ("wafers", "wafer") and "waffles" ("waffles")
2005.40.00	- Peas (peas, peas) (<i>Pisum sativum</i>)
2005.51.00	- Shelled
2005.90.00	- Other vegetables (even 'wild') and mixtures of vegetables:
2007.99	- Other:
2008.19	- Other, including mixtures:
2008.91.00	- Palm hearts
2008.99	- Other:
2009.80	- Any fruit juice or fruit, or vegetable:
2101.11.00	- Extracts, essences and concentrates
2102.10	- Yeasts:
2205.90.00	- Other
2207.10.00	- Undenatured ethyl alcohol of alcoholic strength of not less than 80% vol

2207.20.00	- Ethyl alcohol and other spirits, denatured, of any strength
2301.20	- Flours, meals and "pellets" of fish or crustaceans, molluscs or other aquatic invertebrates:
2309.90	- Other:
2401.10	- Snuff without STEMMED OR STRIPPED:
2401.30.00	- Waste of snuff
2530.90.00	- Other
2616.90	- Other:
2707.50	- Other mixtures of aromatic hydrocarbon including losses, a higher or equal to 65% by volume at 250 ° C, ASTM D 86:
2709.00.00	Crude oils obtained from bituminous minerals.
2710.19.00	- Medium oils and preparations:
2823.00	Oxides of titanium.
2824.90.00	- Other:
2825.90	- Other:
2832.10.00	- Sodium sulphite
2833.30	- Alum:
2914.21.00	- Camphor
2918.22	- O-Acetylsalicylic acid, its salts and esters:
2936.29	- Other vitamins and their derivatives:
2936.90.00	- Other, including natural concentrates
3101.00	Animal manure or plant, whether or not mixed together or chemically treated, fertilizers produced by the mixing or chemical treatment of animal or vegetable.
3203.00	Colouring matter of vegetable or animal origin (including dyeing extracts but excluding animal black), whether or not chemically defined; preparations as specified in Note 3 to this Chapter based on coloring matter of vegetable or animal origin.
3301.19	- Other:
3401.19	- Other:
3401.20.00	- Soap in other forms
3501.10.00	- Casein
3501.90	- Other:
3503.00	Gelatin (gelatin in square or rectangular sheets, including surface-worked or colored) and their derivatives, isinglass, other glues of animal origin, excluding casein glues of heading 35.01.
3507.10.00	- Rennet and concentrates
3823.19.00	- Other
3907.50.00	- Alkyd resins
3909.10	- Urea resins, resins thiourea:
3915.90.00	- Of other plastics

3917.23	- Of polymers of vinyl chloride:
3921.12.00	- Of polymers of vinyl chloride
3922.20.00	- Toilet seats and covers
4014.90.00	- Other
4015.11.00	- Surgical
4015.90	- Other:
4103.90.00	- Other
4106.91.00	- In the wet state (including "wet-blue")
4403.49.00	- Other
4403.99.00	- Other
4407.24.00	Virola, Mahogany
4408.90.00	- Other
4410.39.00	- Other
4411.29.00	- Other:
4412.14.00	- Other plywood, consisting solely of sheets of wood (other than bamboo), each ply not exceeding 6 mm:
4412.99.00	- Other
4421.90	- Other:
4707.20.00	- Other paper or paperboard made mainly of bleached chemical pulp, not colored in the mass
4805.19.00	- Other
4805.24.00	- Of a weight exceeding 150 g/m ²
4805.25.00	- Weighing more than 150 g/m ²
4820.20.00	- Notebooks
4901.91.00	- Dictionaries and encyclopaedias, and serial installments
5209.42.00	- Woven fabrics of denim ("Denim")
5211.12.00	- In twill, including cross twill or 4
5211.41.00	- Plain weave
5211.42.00	- Woven fabrics of denim ("Denim")
5305.90.00	- Other
5401.10	- Of synthetic filaments:
5402.33.00	- Of polyesters
5402.51.00	- Of nylon or other polyamides
5402.52.00	- Of polyesters
5407.20.00	- Woven fabrics obtained from strip or the like
5509.31.00	- Single
5509.32.00	- Or cabled

5509.52.00	- Mixed mainly or solely with wool or fine animal hair
5510.30.00	- Other yarn, mixed mainly or solely with cotton
5513.21.00	- Of polyester staple fibers, plain weave
5513.41.00	- Of polyester staple fibers, plain weave
5608.11.00	- Made up fishing Networks
5804.29.00	- Of other textile materials
5805.00.00	Hand-woven tapestries (Gobelins, Flanders, Aubusson, Beauvais and the like) and needle (for example, of "petit point" cross stitch) made in panels.
5811.00.00	Quilted textile products in the piece, composed of one or more layers of textile materials combined with a matter of padding by stitching or otherwise securing, other than embroidery of heading 58.10.
5911.10.00	- Textile fabrics, felt and felt-lined woven fabrics, combined with one or more layers of rubber, leather or other material, of a kind used for the manufacture of card clothing and similar products for other technical purposes, including narrow fabrics of velvet impregnated with rubber, for covering warp
5911.31.00	- Weighing less than 650 g/m ²
5911.32.00	- Weighing not less than 650 g/m ²
6103.29	- Of other textile materials:
6103.31.00	- Of wool or fine animal hair
6115.11.00	- Of synthetic fibers, of title less than 67 decitex per single yarn
6115.20.00	- Other pantyhose and tights:
6117.90	- Parts:
6301.40.00	- Blankets of synthetic fibers (excluding electric)
6305.33	- Other, strip or the like, of polyethylene or polypropylene:
6306.91.00	Synthetic fiber sails
6306.99.00	- Of other textile materials
6401.92.00	- Covering the ankle but not covering the knee
6404.19.00	- Other
6501.00.00	Helmets without lasting board or profiled wing platters (disks) and cylinders but are cut in the sense of height, felt for hats
6502.00	Hat-shapes, plaited or made by assembling strips of any material, lasting board or profiled wing and no garnish.
6504.00.00	Hats and other headgear, plaited or made by assembling strips of any material, trimmed
68.13.10.00	Brake linings and pads
6910.10.00	- Of porcelain
6910.90.00	- Other
7216.22.00	- T sections
7216.61.00	- Obtained from flat-rolled products
7217.20.00	- Zinc

7306.30	- Other, welded, of circular cross section, of iron or non-alloy steel:
7310.21.00	- Cans to be closed by soldering or crimping
7313.00	Barbed wire of iron or steel wire (single or double) and strips, twisted, even barbed, of iron or steel, of a kind used for fencing.
7314.31.00	- Galvanized
7321.11	- For gas fuel or for both gas and other fuels:
7321.90	- Parts:
7403.22.00	- A copper-tin (bronze)
7404.00.00	Waste and scrap copper.
7408.21.00	- A copper-zinc (brass)
7605.29.00	- Other
7608.20.00	- The aluminum alloys
7614.90.00	- Other
7801.10.00	- Refined lead
7801.91.00	- Antimony as the principal other element by weight
7903.90.00	- Other
8207.19	- Other, including parts:
8309.10.00	- Cover crown
8309.90.00	- Other
8412.80	- Other:
8413.82.00	- Liquid Elevators
8413.92.00	- Of liquid elevators
8418.10	- Combined refrigerator-freezers with separate external doors:
8419.20.00	- Sterilizers medical, surgical or laboratory
8424.81	- For agricultural or horticultural:
8424.90	- Parts:
8432.10.00	- Ploughs
8432.21.00	- Harrows (scraper) disks
8432.30.00	- Seeders, planters and transplanters
8432.40.00	- Manure spreaders and fertilizer distributors
8433.59	- Other:
8434.10.00	- Milking machines
8434.20.00	- Machinery for the dairy industry
8434.90	- Parts:
8436.80	- Other machines and apparatus:
8438.50	- Machinery for the preparation of meat:

8438.60.00	- Machinery for the preparation of fruits or vegetables
8438.80	- Other machines and apparatus:
8448.32	- Of machines for preparing textile fibers, other than card clothing:
8477.40.00	- Vacuum molding machines and other thermoforming machines
8480.50.00	- Moulds for glass
8527.21.00	- Combined with sound recording or reproducing apparatus
8702.10	- With piston engine (piston) compression ignition (diesel or semi-diesel):
8704.21	- The maximum gross vehicle weight exceeding 5 t:
8704.31	- The maximum gross vehicle weight exceeding 5 t:
8714.20.00	- From wheelchairs and other vehicles for disabled
9004.90	- Other:
9021.10	- Articles and equipment for orthopedics or fractures:
9021.21.00	- Artificial teeth
9021.29.00	- Other
9606.30	- Button molds and other parts of buttons, button blanks:
9608.10	- Pens:

Source: authors work in WITS



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Appendix Table XII: Various Important Meetings Held by International Community to Tackle Climate Change

United Nations Conference on Environment and Development (Earth Summit), held in **Rio de Janeiro** on 14 June 1992 was a summit held under the aegis of the United Nations. The issue was sustainable development of countries. It was the planet's first summit to discuss global warming related issues.

The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing greenhouse gas (GHG) emissions. These amount to an average of five per cent against 1990 levels over the five-year period 2008-2012. The major distinction between the Protocol and the Convention is that while the Convention **encouraged** industrialised countries to stabilize GHG emissions, the Protocol **commits** them to do so. Recognizing that developed countries are principally responsible for the current high levels of GHG emissions in the atmosphere as a result of more than 150 years of industrial activity, the Protocol places a heavier burden on developed nations under the principle of "common but differentiated responsibilities."

The Kyoto Protocol was adopted in Kyoto, Japan, on 11 December 1997 and entered into force on 16 February 2005. The detailed rules for the implementation of the Protocol were adopted at COP 7 in Marrakesh in 2001, and are called the "Marrakesh Accords." **The Kyoto mechanisms** under the Treaty, countries must meet their targets primarily through national measures. However, the Kyoto Protocol offers them an additional means of meeting their targets by way of three market-based mechanisms.

The Kyoto mechanisms are:

- Emissions trading – known as "the carbon market"
- Clean development mechanism (CDM)
- Joint implementation (JI).

The mechanisms help stimulate green investment and help Parties meet their emission targets in a cost-effective way.

The Bali Action Plan is part of the Bali Road Map agreed to at the Thirteenth Session of the Conference of Parties of UNFCCC in Bali in December 2007. The Action Plan encompasses a comprehensive process to enable the implementation of the UNFCCC through long-term cooperative action up to and beyond 2012, by addressing the following pillars: (a) a shared vision for long-term cooperative action, including a long-term global goal for emission reductions; (b) enhanced national/international action on mitigation of climate change; (c) enhanced action on adaptation; (d) enhanced action on technology development and transfer to support action on mitigation and adaptation; (e) enhanced action on the provision of financial resources and investment to support action on mitigation and adaptation and technology cooperation.

Copenhagen Accord, 2009, reaffirms the importance of restricting global temperature rise to 2°C. It is not considered to be a legally binding agreement like the Kyoto Protocol. The Accord requires Annex I signatories to submit individual mitigation targets and non Annex I countries to submit NAMAs. Annex I countries are those member countries of UNFCCC and its Kyoto Protocol that are classified as industrialized countries and as countries with economies in

transition. Annex II countries, a subgroup of Annex I countries, comprise the developed countries that pay for the costs of developing countries. In addition, there is the group of developing countries (non-Annex I countries). Of particular concern, however, is the fact that the estimated sum of submitted targets by Annex I countries falls markedly short of limiting CO₂e concentrations to 450 ppm and the associated rise in global average temperatures of 2°C.

The urgency to tackle climate change was again underscored at **COP16** in Cancún, Mexico, held from 29 November to 10 December 2010 and **COP17 in Durban**, South Africa, held from 28 November to 9 December 2011. The agreement adopted by COP16 called again for a paradigm shift towards building a low-carbon society and establishing a “Green Climate Fund” worth \$100 billion annually by 2020, to assist poorer countries in financing emission reductions and adaptation. It also established a Technology Mechanism, which will consist of a Technology Executive Committee, and a Climate Technology Centre and Network.

COP17 agrees to an extension of the Kyoto Protocol, by five years and to advance the implementation of the Bali Action Plan, agreed at COP 13 in 2007, and the Cancún Agreements. The “Durban Platform for Enhanced Action” commits all countries to cut carbon emissions for the first time. A road map guides countries towards the conclusion of a legal agreement which includes mandatory cuts in carbon emissions for all countries by 2015, but the agreement will only come into affect from 2020 onwards.



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