

An Evaluation of Processed Food Tariffs Facing Exporters: Implications for Liberalization

Mark Gehlhar

John Wainio

For presentation at 5th Annual
Conference on Global Economic
Analysis June 5-7, 2002



Background of Agricultural Protection in GTAP

- In previous versions of the GTAP database import taxes on food not based on actual tariffs**
- GTAP version 5 made significant improvements with the use of Agricultural Market Access Database (AMAD)**

Some characteristics of processed food trade

- Faster growth relative to raw commodities**
- Diverse array of product categories similar to manufactured goods**
- Highly uneven tariffs within GTAP sectors
-see “Profiles of Tariffs in Global Agricultural Markets” an ERS report**
- Exporter specialization in few product categories**

Examples of GTAP sectors with selected products

GTAP sector 19

Vegetable oils fats

Soybean oil

Palm oil

Coconut oil

Olive oil

Joboba oil

Tung oil

Soy bean oil cake

Groundnut oil cake

Margarine

Other hydrogenated oils

GTAP sector 25

Food products nec

Fish fillets

Frozen shrimps and prawns

Prepared tomatoes

Frozen potatoes

Wheat flour

Wheat gluten

Dog or cat food

Pasta

Egg yolks dried

Couscous

GTAP sector 26

Beverages and tobacco

Whiskies

Gin and geneva

Beer

Sparkling wine

Grape wine

Malt

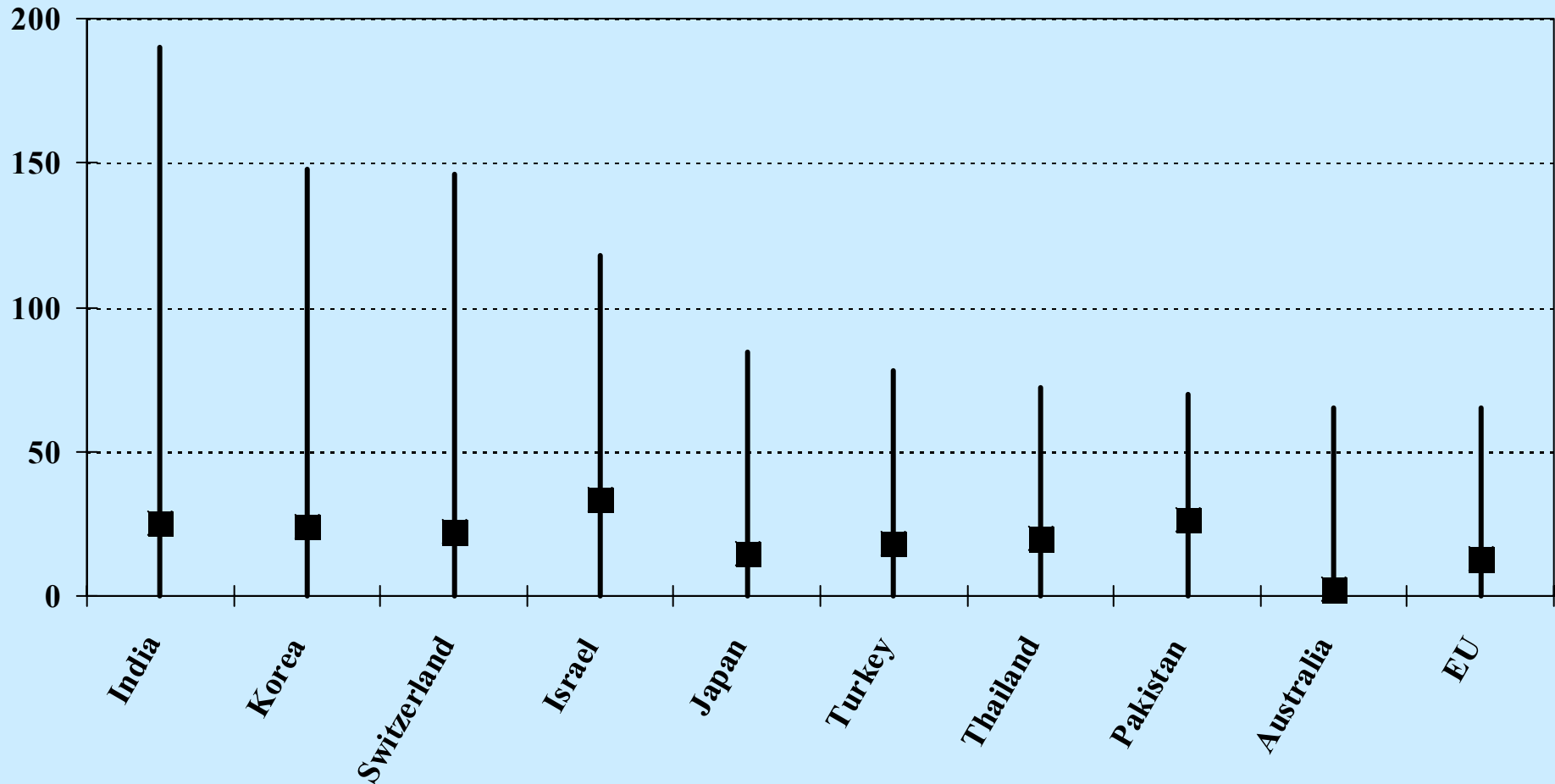
Mineral waters

Smoking tobacco

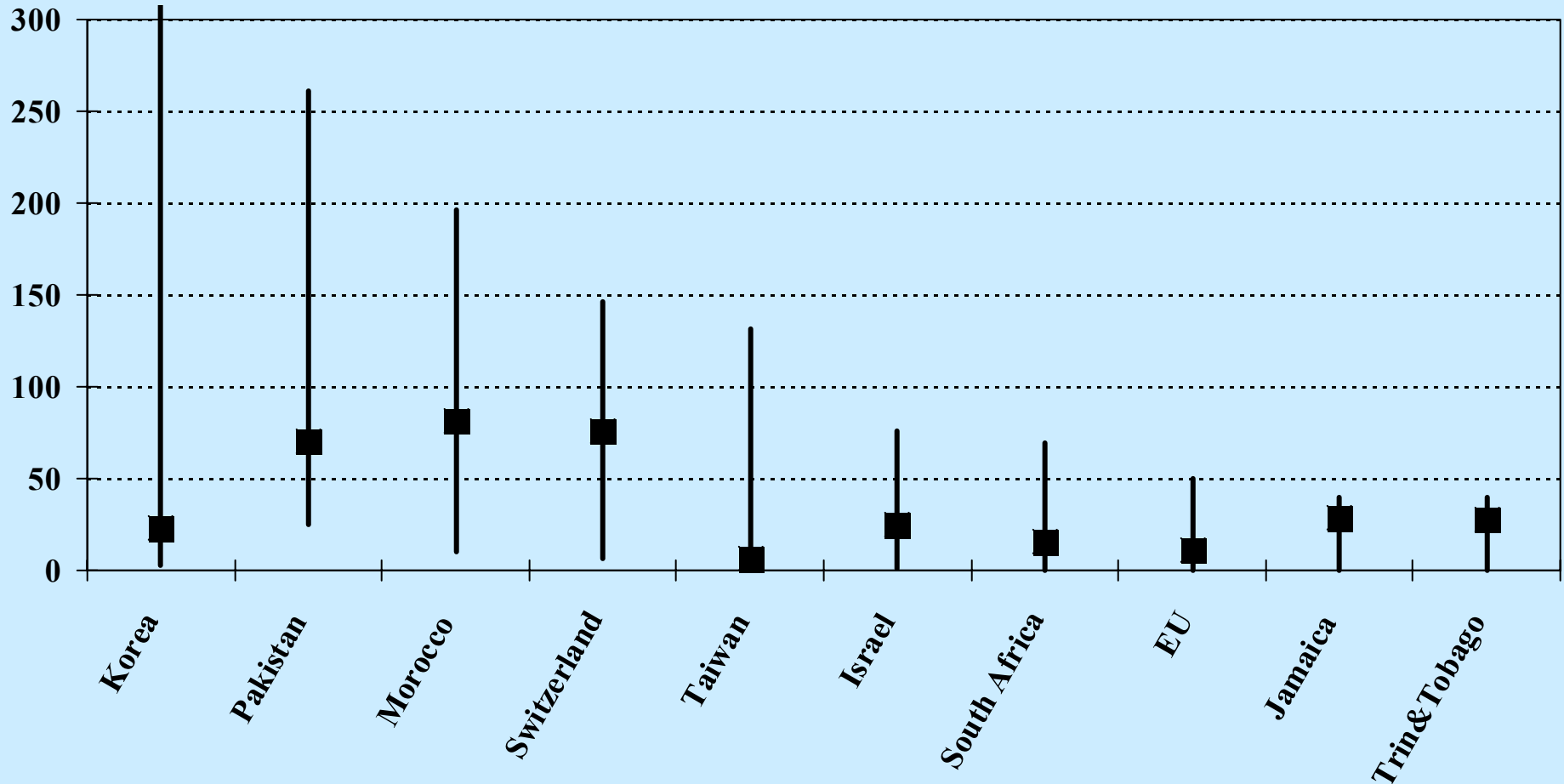
Cigarettes

Tobacco extracts

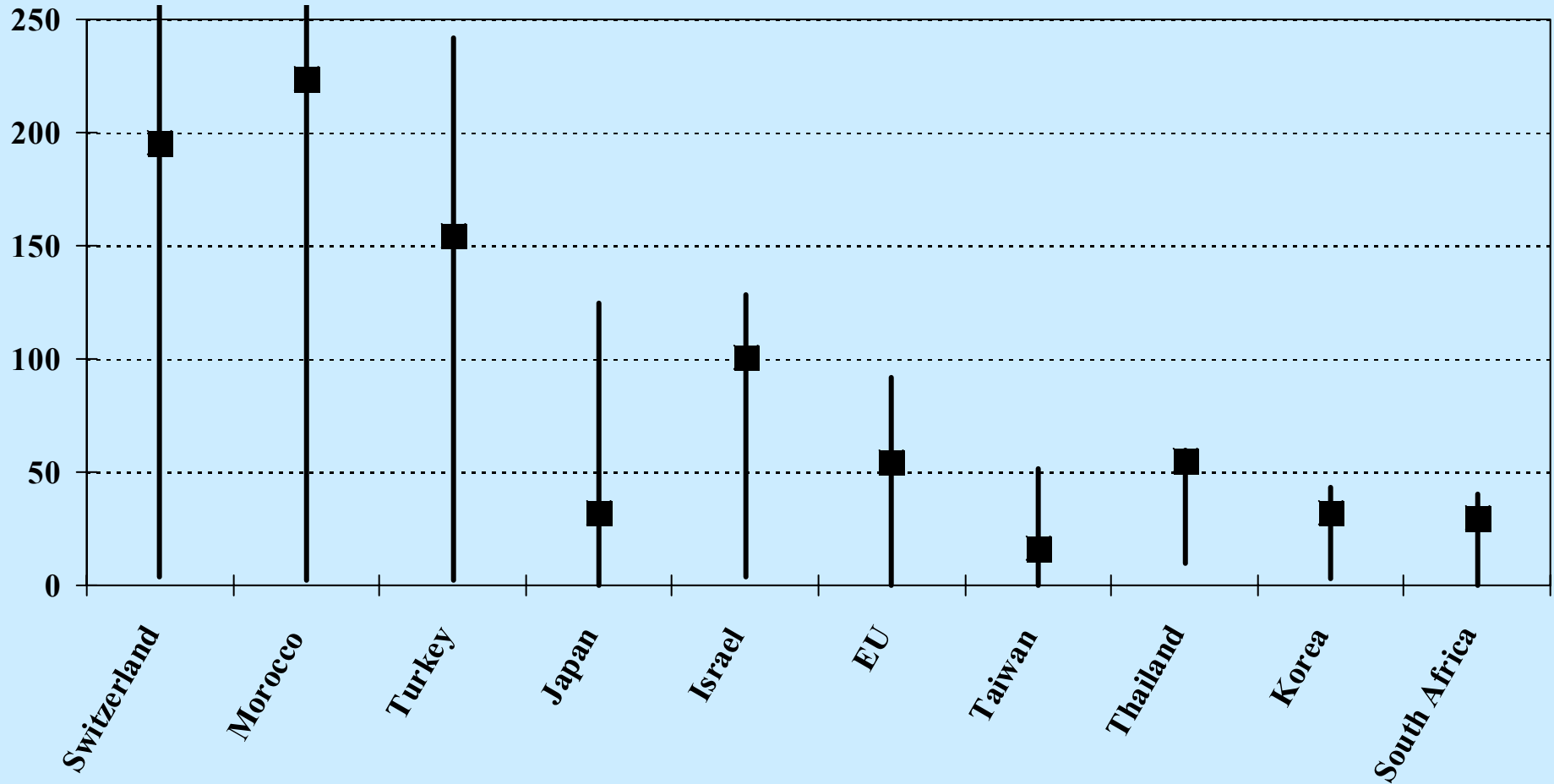
High, Low, and Mean Tariff in Other Food Products Category



High, Low, and Mean Tariff in Vegetable oil product category



High, Low, and Mean Tariff in Beef/Sheepmeat Category



Some countries have a wide spread in tariffs within the six commodity categories

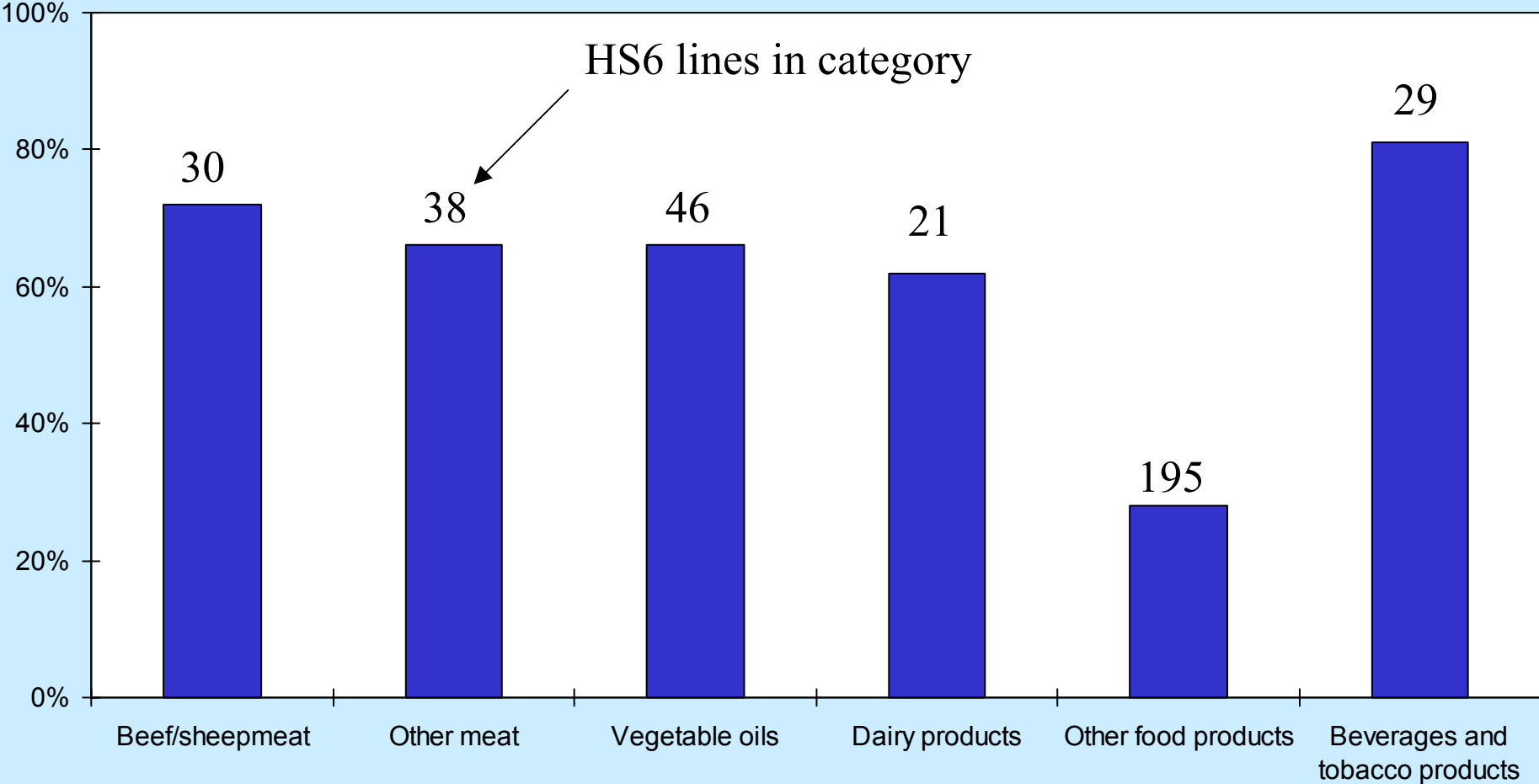
Korea, Switzerland, Israel, European Union, Turkey, Morocco, and Japan tend to have the widest dispersion in tariffs for these categories.

It is particularly in these countries where export weighted averages can make a difference.

In most countries, the bulk of exports are accounted for by a subset of products within the commodity category

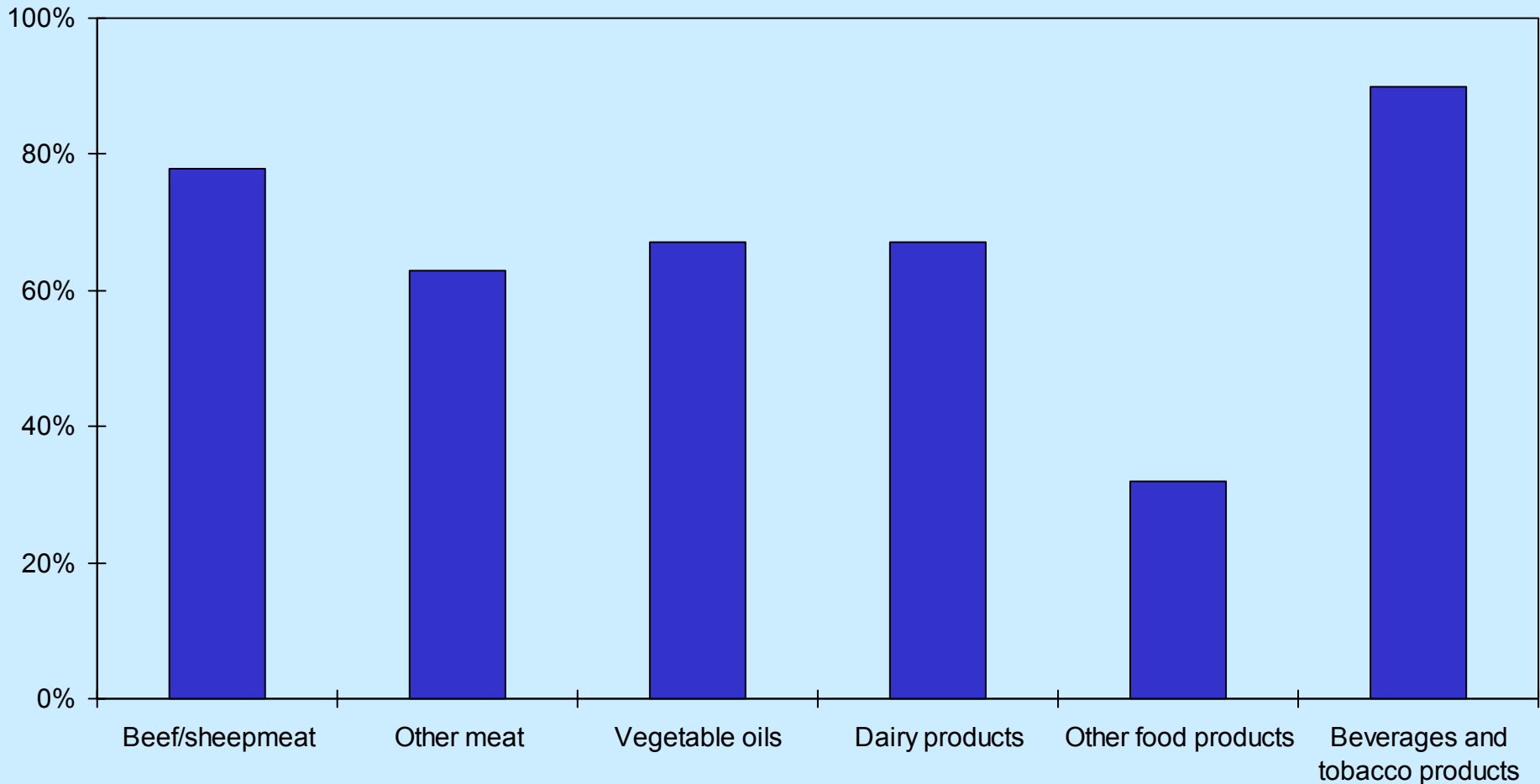
Proportion of Export Earnings Accounted for by Top 4 Products

United States



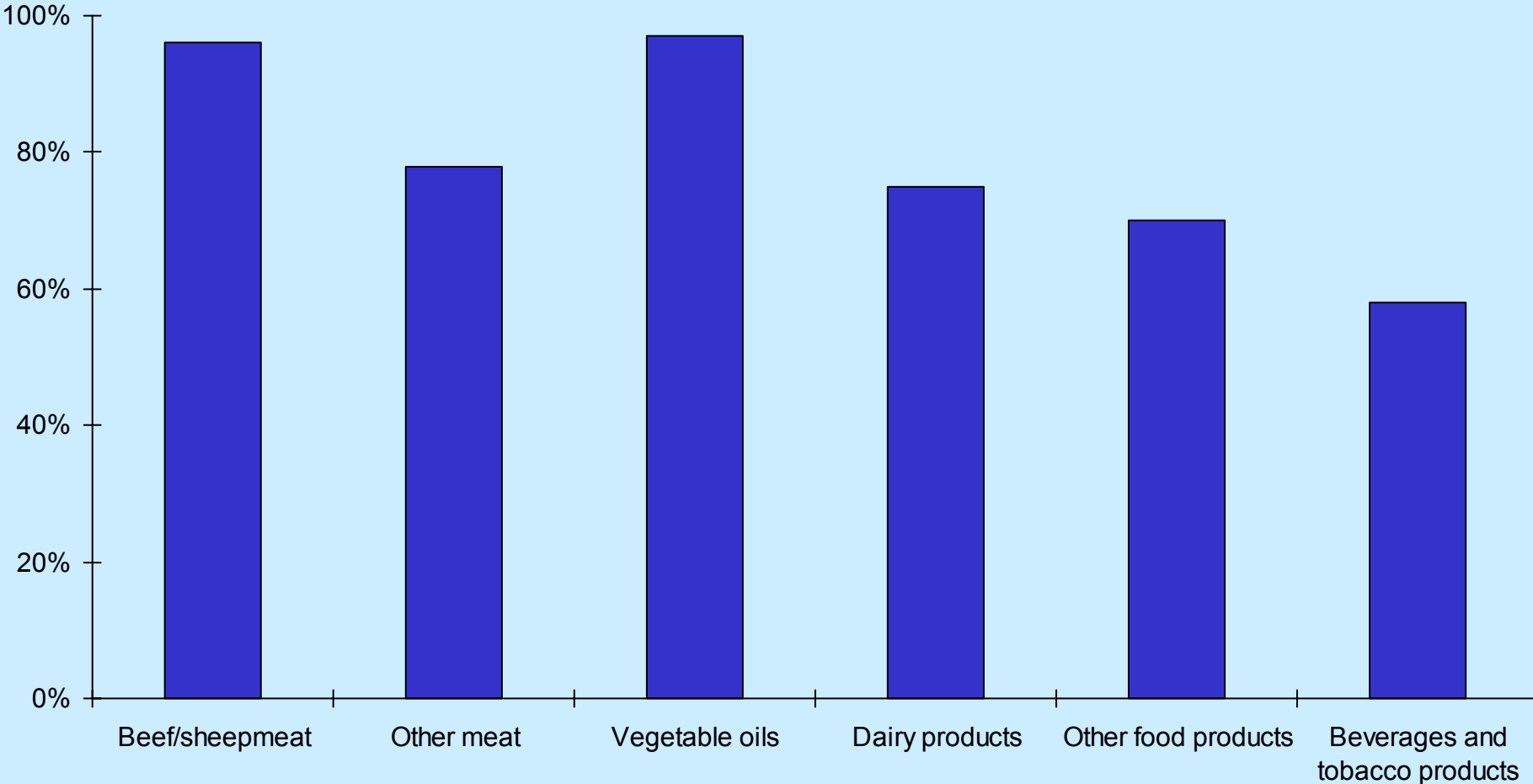
Proportion of Export Earnings Accounted for by Top 4 Products

Australia

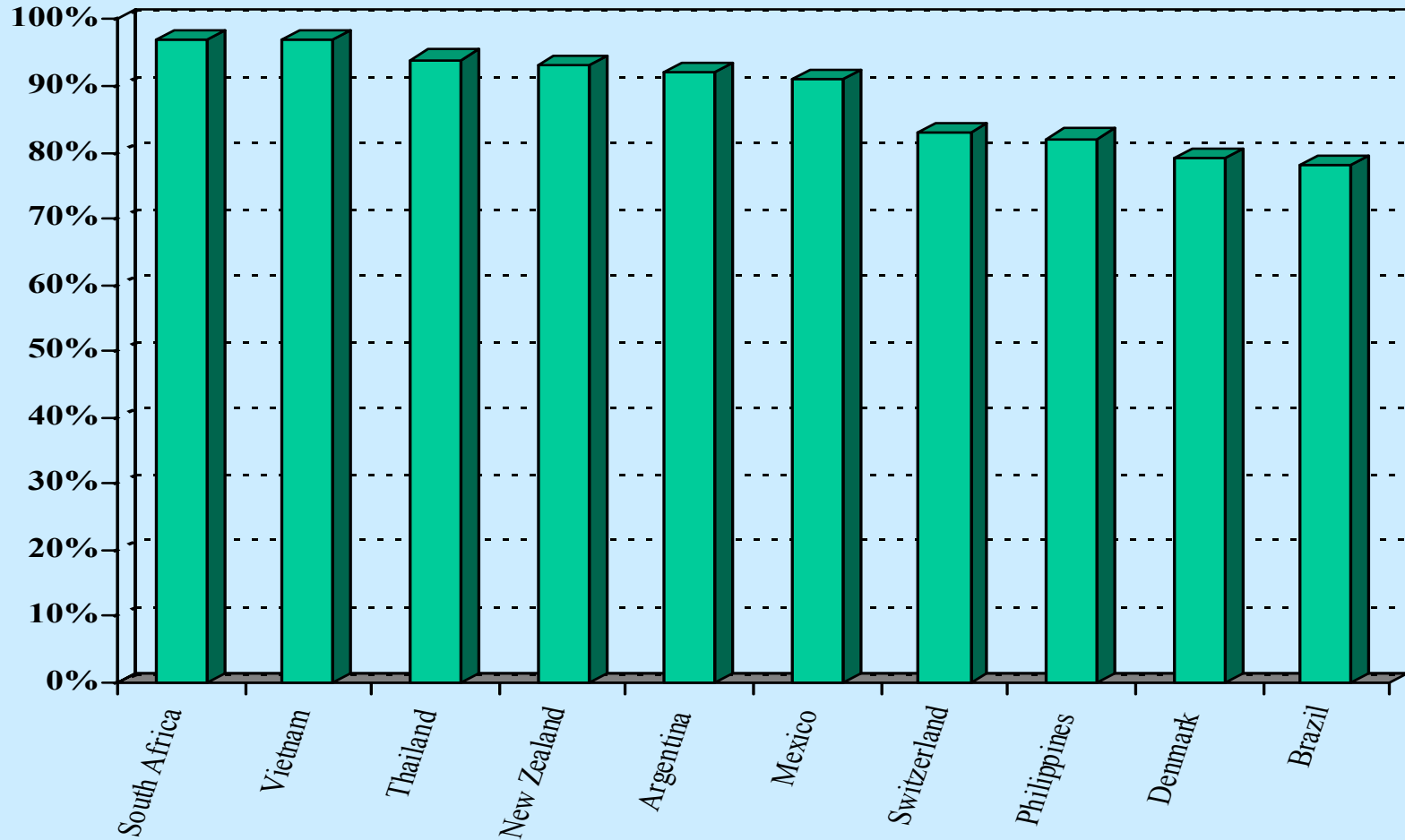


Proportion of Export Earnings Accounted for by Top 4 Products

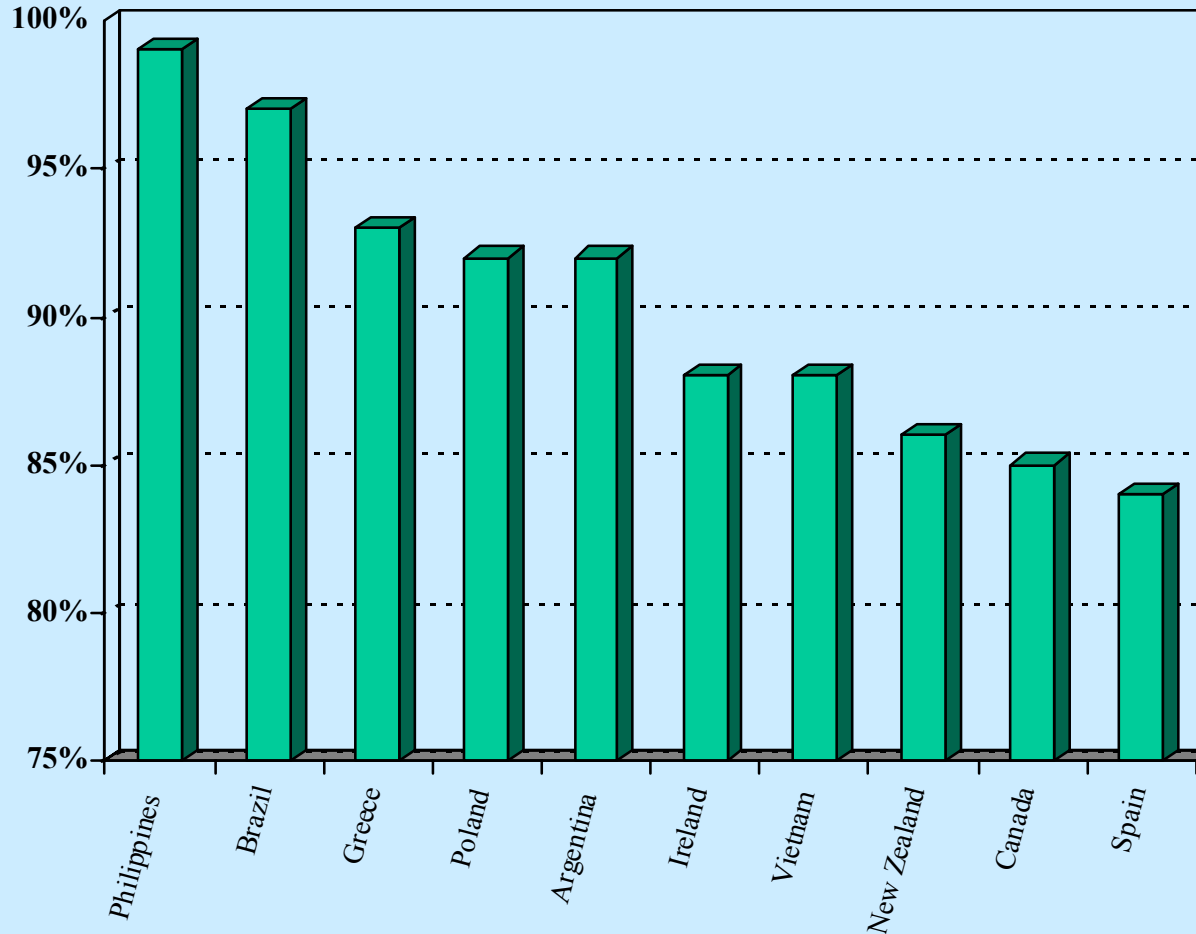
Brazil



Proportion of Export Earnings Accounted for by Top 4 Products within the Other Meats Category



Proportion of Export Earnings Accounted for by Top 4 Products in the Vegetable Oils Category



Top 4 Products in the Vegetable Oils/Meals Category

Philippines	Coconut oil, crude; coconut oil, refined; copra meal; palm oil, refined
Brazil	Soybean meal, soybean oil, crude; soybean oil, refined; vegetable waxes (excluding triglycerides), whether or not refined or colored
Greece	Olive oil, virgin; olive oil blends, refined/not refined; soybean meal; olive oil, refined
Poland	Rape/colza meal; margarine, excluding liquid margarine; edible mx/prep of anim/veg fats&oils; rape, colza or mustard oil, refined
Argentina	Soybean meal; soybean oil, crude; sunflowerseed/safflower oil, crude; sunflowerseed meal
Ireland	Margarine, excluding liquid margarine; soybean meal; sunflowerseed/safflower oil, refined; palm oil, crude
Vietnam	Coconut oil, crude; rape, colza or mustard oil, refined; palm oil, refined; sesame oil, whether or not refined
New Zealand	Edible mx/prep of anim/veg fats&oils; soybean meal; margarine, excluding liquid margarine; animal fats&oils
Canada	Rape, colza or mustard oil, refined; rape/colza meal; rape, colza or mustard oil, crude; veg oils, hydrogenated, inter/re-esterified, etc
Spain	Olive oil, virgin; olive oil, refined; soybean oil, crude; corn oil, refined

Simple vs Weighted Tariff Mean

- Tariffs currently in GTAP are simple average of numerous tariff-lines
- The same tariff is applied to imports of each trading partner.
- The challenge is to devise a method of calculating relative levels of tariff protection between trading partners that distinguishes between “less important” and “more important” tariffs.

China (hypothetical) tariffs and trade

	Tariffs	China's Imports
Wine	100	25
Cigarettes	0	75
Tobacco and Beverages		100
Wine trade	Exporter A	Exporter B
China	0	100
World	300	200
Cigarette trade		
China	100	100
World	200	300
Tobacco and beverage tariffs	Exporter A	Exporter B
Simple Average	50	50
Importer weighted	25	25
Bilateral weighted	0	50
Exporter weighted	60	40

Aggregation scheme: Relative Tariff Ratio Index (RTR)

- **Importer tariffs rates (MFN) weighted by exporters trade with world**
- **HS 6 digit level**
- **Generates bilateral tariffs since each exporter total trade composition varies**

Japan's trade weighted tariffs facing selected exporters

	Bovine and sheepmeat	Other meat	Dairy	Vegetable oil	Food products	Beverage and Tobacco
Argentina	40	21	106	6	15	24
Australia	37	28	108	18	20	18
Brazil	46	28	62	3	24	12
Canada	46	56	96	12	17	15
Denmark	58	59	98	9	14	13
Italy	42	76	48	2	23	14
Thailand	45	29	99	6	11	11
Turkey	6	9	91	11	19	14
United Kingdom	13	30	145	9	22	13
United States	42	28	105	6	22	15
Base tariff	36	58	287	7	38	16

Simulation Experiments

- **Results based on standard GTAP model**
- **Two data sets used: simple average tariff (in current 5.0 release) and trade weighted for processed food sectors**
- **A 50 percent cut in processed food sectors only**

Welfare differences

Summary of Welfare: Differences between use of Simple and Weighted tariffs

	Simple Tariff \$ millions	Weighted Tariff	Difference
NAFTA	2,066	2,116	50
Australasia	771	675	-96
France	605	382	-223
Germany	737	604	-133
U.K	1,298	1,123	-175
Italy	681	559	-122
Other EU 15	1,148	1,071	-77
Other W.Europe	2,597	2,126	-471
Japan	3,142	2,675	-467
Korea	245	106	-139
China	573	159	-414
Rest of Asia	1,004	1,183	179
Mid.East and N.Africa	3,412	3,794	382
Rest of World	3,613	3,293	-320
World	21,892	19,866	-2,026

Import volume differences

Summary of Import volumes: Differences in Results between use of Simple and Weighted tariffs

	Beef and sheepmeat	Other meat	Vegetable oil products	Dairy	Food products	Tobacco and beverages	Total
	\$ millions						
NAFTA	1	2	-9	-1	10	6	9
Australasia	0	-1	-2	-1	-6	-1	-11
France	10	-4	-10	-28	-54	4	-82
Germany	-5	-8	-18	-36	-45	3	-109
U.K	-20	-6	0	-7	-14	18	-29
Italy	11	-3	-8	-32	-24	7	-49
Other EU15	24	0	-24	-3	-68	105	34
Other W.Europe	-75	-8	-43	-48	-279	-170	-623
Japan	43	-137	-4	-15	-1,448	-102	-1,663
Korea	27	-5	-28	-1	-180	-24	-211
China	-1	-56	-284	-8	-117	-433	-899
Rest of Asia	-2	7	14	-8	-126	-284	-399
Mideast and N.Africa	66	58	26	232	157	229	768
Rest of World	-3	-10	-4	-6	-53	-9	-85
World	76	-171	-394	38	-2,247	-651	-3,349

Export volume differences

Summary of Export volumes: Differences in Results between use of Simple and Weighted tariffs

	Beef and sheepmeat	Other meat	Vegetable oil products	Dairy	Food products	Tobacco and beverages	Total
	\$ millions						
NAFTA	68	-245	-278	-37	-343	534	-279
Australasia	-189	-52	4	27	-166	1	-367
France	39	13	2	46	89	-563	-381
Germany	31	3	-101	70	57	-76	-27
U.K	19	-10	9	14	20	-373	-335
Italy	10	6	-1	-32	88	-35	40
Other EU15	-9	-109	-324	240	-611	361	-439
Other W.Europe	-6	34	-57	-371	506	-80	25
Japan	0	-1	11	-6	-235	-11	-243
Korea	0	-27	0	0	-439	0	-467
China	0	-200	21	-1	-846	-25	-1,050
Rest of Asia	0	136	548	7	-147	47	565
Mideast and N.Africa	7	1	136	22	117	121	410
Rest of World	106	280	-364	59	-337	-552	-829
World	76	-171	-394	38	-2,247	-651	-3,377

Allocative efficiency differences

Summary of Allocative Efficiency :Differences in Results between use of Simple and Weighted tariffs

	Beef and sheepmeat	Other meat	Vegetable oil products	Dairy	Food products	Tobacco and beverages	Total
	\$ millions						
NAFTA	0	1	0	6	2	-3	5
Australasia	0	0	0	0	-3	0	-3
France	-88	3	-7	-39	-51	4	-175
Germany	-96	-4	-3	-57	-44	2	-198
U.K	-105	-4	-1	-4	-20	10	-121
Italy	-41	0	1	-80	-26	-8	-154
Other EU15	-115	-11	-3	-70	-78	49	-220
Other W.Europe	-117	-30	-17	144	-243	-45	-348
Japan	39	19	1	-427	-329	-16	-713
Korea	16	0	22	13	-120	-7	-76
China	-1	-18	-229	-3	-63	-122	-439
Rest of Asia	-2	5	-1	-1	-32	0	-28
Mideast and N.Africa	105	57	17	244	71	70	592
Rest of World	-4	-1	-5	-9	-51	-23	-93
World	-409	17	-225	-283	-987	-89	-1971

Summary

- **Trade weighted tariffs tend lower average tariffs**
- **Overall global impacts of a trade weighted tariffs are small**
- **Country/sector specific trade impacts are most noticeable vegetable oils, other food products, meats**

Concluding remarks

- **Trade weighting tariffs is not new for GTAP users - it takes place automatically with every aggregation**
- **Benefit of starting at more detailed level is to facilitate analysis of sector specific trade impacts**
- **Establish greater creditability**
- **Getting the policy data right will yield better model performance**