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DUTY AND QUOTA-FREE ACCESS FOR LDCs: FURTHER EVIDENCE FROM CGE MODELLING

by

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ABSTRACT

The aim of this work is to assess the effects of trade policy initiatives aimed at improving market access for LDCs in Quad countries (Canada, European Union, Japan and United States). The study simulates the effects of two policy scenarios:

i) Elimination of all tariff and non tariff barriers against LDCs in the European Union. This experiment is aimed at simulating the effects of the already approved EBA initiative.
ii) Elimination of tariff and non tariff barriers faced by LDCs in all Quad markets. This experiment analyses the effects of a hypothetical coordinated action where the other Quad follow the lead of the European Union.

The policy experiments performed are analogous to those in Ianchovichina, Mattoo and Olarreaga (2000). Results, though, cannot be straightforwardly compared because of several reasons. First, beneficiary countries in our case are all LDCs, whereas in Ianchovichina, Mattoo and Olarreaga (2000) preferential market access is targeted to Sub-Saharan African countries only. Second, our analysis is conducted at a higher level of disaggregation, both sectoral and geographical. Finally, data in our simulations refer to 1997, whereas in Ianchovichina, Mattoo and Olarreaga (2000) the base year is 1995 (GTAP4 database).

Results show that non-reciprocal preferential trade liberalization targeted to LDCs is likely to entail non-negligible gains to beneficiary countries coupled with negligible losses for donor and third countries. When the only donor country is the European Union (EBA initiative), the gains accrue mainly to Sub-Saharan African countries, and are mostly explained by improved terms of trade for beneficiaries. In this case, the key sectors are paddy and processed rice, and sugar. Increased exports from LDCs are directed almost only to the European Union. When liberalization occurs in all Quad countries, the benefits from duty-free and quota-free market access rise substantially. Overall, welfare gains are ten times higher compared with EBA. All beneficiary countries gain notably more, and countries like Bangladesh and the rest of Sub-Saharan Africa enjoy disproportionately higher gains. In this case, in addition to rice and sugar, key sectors to benefit are wearing apparel, other food and diary products. Increased export flows from some LDCs are still mainly directed to the European Union under this scenario. For other beneficiary countries, however, the rise in exports is basically targeted to the United States market (Bangladesh), and to Japan (rest of Sub-Saharan Africa).

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List of Abbreviations

ACP	African Caribbean Pacific
AGOA	Africa Growth and Opportunity Act
APQLI	Augmented Physical Quality of Life Index
ASEAN	Association of South-East Asian Nations
ASSUC	Association des Organisations Professionnelles du Commerce des Sucres
BBS	Bangladesh Bureau of Statistics
BGMEA	Bangladesh Garments Manufacturers and Exporters Association
BPT	British Preferential Tariff
BTMA	Bangladesh Textile Mills Association
CAP	Common Agricultural Policy
CBI	Caribbean Basin Initiative
CBTPA	Caribbean Basin Trade Partnership Act
CCCT	Commonwealth Caribbean Countries Tariff
CDE	Constant Difference of Elasticities
CET	Constant Elasticity of Transformation
CGE	Computable General Equilibrium
CoO	Certificate of Origin
DFAIT	Department of Foreign Affairs and International Trade
EBA	Everything but Arms
ECU	European Currency Unit
EIB	European Investment Bank
EO	Export Oriented
EPB	Export Promotion Bureau
EU	European Union
EVI	Economic Vulnerability Index
FDI	Foreign Direct Investment
FTA	Free Trade Agreement
FY	Financial Year
GAO	General Accounting Office
GATT	General Agreement on Tariff and Trade
GDP	Gross Domestic Product
GOB	Government of Bangladesh
GPT	Generalized Preferential Tariff
GSP	Generalized System of Preference
GTAP	Global Trade Analysis Project
HACCP	Hazard Analysis Critical Control Point
HS x	Harmonized System, at x digit level
ISO	International Sugar Organisation
LAC	Latin America and the Caribbean
LDC	Least Developed Country
LDCT	Least Developed Country Tariff
M. ton	Metric ton
METI	Ministry of Economy, Trade and Industry of Japan
MFA	Multi-Fibre Agreement
MFN	Most Favoured Nation

NAFTA	North-American Free Trade Agreement
PTA	Preferential Trade Agreement
RC	Regional Cumulation
RMG	Ready Made Garments
RoO	Rules of Origin
ROW	Rest of the World
SAARC	South Asian Association for Regional Cooperation
SITC	Standard Industrial Trade Classification
SPS	Special Preferential Sugar
STABEX	Stabilisation of export earnings for agricultural commodities
SYSMIN	System for Safeguarding and Developing Mineral Products
TRAINS	Trade Information System
UNCTAD	United Nations Conference on Trade and Development
UR	Uruguay Round
US TDA	United States Trade and Development Act
USTR	United States Trade Representative
WSE	White Sugar Equivalent
WTO	World Trade Organization
$	Reference to 'dollars' ($) means United States dollars, unless otherwise indicated

I. LDCs AND THE POST-WWII INTERNATIONAL TRADING SYSTEM

Least developed countries (LDCs) have, for decades, been striving to find the right developmental strategy to enable them to reduce the economic disparities between them and more advanced economies. Over the past two decades an increasing number of LDCs have placed their hopes on a development strategy based on increased participation in the world economy, through exports and inward foreign investment.

LDC participation in the rapid trade liberalization process at the multilateral level brought by successive trade negotiation rounds constituted a major shift from import substitution strategies, which have been a feature of industrial policy in most developing countries. It was hoped that trade liberalization coupled with the development of export capabilities would create the basis for economic recovery and reduce the existing balance of payments deficits. Consequently, both developing countries and LDCs became increasingly involved in multilateral trade negotiations. As a result many agreements, declarations and arrangements of the World Trade Organization (WTO) take into account the special needs of developing countries. Notable examples of tailored-agreements for developing countries include the1994 Decision on Measures in Favour of Least Developed Countries and the Decision on Measures Concerning the Possible Negative Effects of the Reform Programme on Least Developed and Net Food Importing Developing Countries. The Uruguay round also included the requirement to phase-out trade-restrictive measures against key products of export interest to many developing countries. More generally, many agreements include provisions for special and differential treatment, also tariff reductions being implemented pursuant to Uruguay Round commitments represent gains in market access in both industrial and agricultural products from developing countries (Bora and Bacchetta, 2001).

Box I.1. What is an LDC?

Since 1971, the United Nations has denominated "Least Developed Countries" a category of States (presently 49) that are deemed structurally handicapped in their development process, and in need of the highest degree of consideration from the international community in support of their development efforts. In response to the socio-economic weaknesses of the Least Developed Countries, the United Nations grants these States a specially favourable treatment in the allocation of resources under its relevant cooperation programmes. At the same time, the organization gives a strong signal to the other development partners of the Least Developed Countries by periodically identifying these countries and highlighting their structural problems, thereby pointing to the need for special concessions in their favour, especially in the area of development finance and in the multilateral trade framework.

In its latest triennial review of the list of Least Developed Countries in 2000, the Economic and Social Council of the United Nations used the following three criteria for determining the new list, as proposed by the Committee for Development Policy:

- **a low-income criterion,** based on a three-year average estimate of the gross domestic product per capita (under $900 for inclusion, above $1,035 for graduation);
- **a human resource weakness criterion,** involving a composite *Augmented Physical Quality of Life Index (APQLI)* based on indicators of: (a) nutrition; (b) health; (c) education; and (d) adult literacy;
- **an economic vulnerability criterion,** involving a composite *Economic Vulnerability Index (EVI)* based on indicators of (a) the instability of agricultural production; (b) the instability of exports of goods and services; (c) the economic importance of non-traditional activities (share of manufacturing and modern services in GDP); (d) merchandise export concentration; and (e) the handicap of economic smallness (as measured through the population in logarithm).

In the 2000 review of the list, a country qualified to be added to the list if it met the above three criteria and did not have a population greater than 75 million. Application of this rule resulted in the admission of Senegal.

Source: Statistical Profiles of the Least Developed Countries (UNCTAD/LDC/Misc.72), New York and Geneva: United Nations, 2001.

Yet the Uruguay Round Agreements, while providing for global trade liberalization, did not yield significant gains for LDCs whose competitive production capabilities in industrial products remained low. Therefore, in this context of increased liberalization at the multilateral and regional level, non-reciprocal duty-free and quota-free market access for LDCs could be seen as a developmental tool.

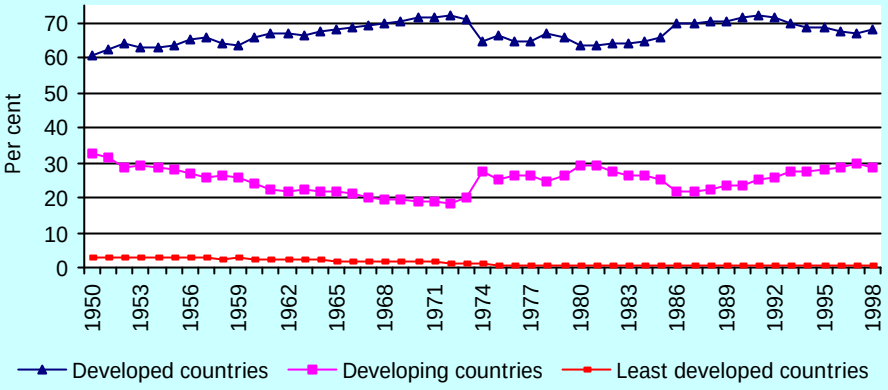
A. Patterns of trade

Throughout the post-WWII history, the trade performance of LDCs has remained locked in an unfavourable position. Between 1950 and 1973, international trade increased rapidly and was paralleled by an increasing reduction in trade restrictions on industrial exports to developed countries. With respect to agricultural and textile products – two sectors that were predominant in developing countries' exports – the advanced economies continued to follow protectionist policies throughout the period. Thus, some domestic producers in developed markets remained protected by high tariff and non-tariff barriers, leading to higher domestic prices. In some cases, protectionist policies were cou-

pled with policies that subsidized production and exports.

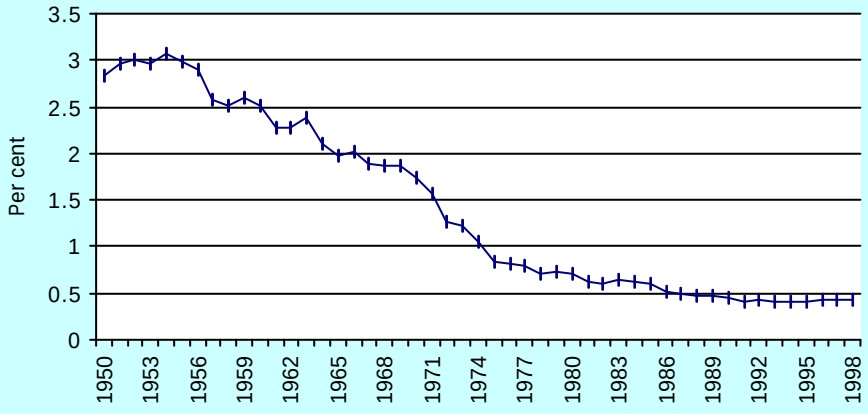
Following the successive reduction in tariffs on industrial goods as a result of multilateral trade negotiations, trade increased significantly over the past two decades. This liberalization process has led to a significant growth in exports from Western countries and certain successful developing countries. During the period between 1990 to 1998, more than 62 per cent of the increase in total world trade was accounted for by trade occurring between advanced economies. Developing countries have also seen their share increase during the same period, from 23.5 per cent in 1990 to 28.4 per cent in 1998 (figure I.1). The share of LDCs in international trade has always been low (figure I.2). Over the last four decades their share in world exports decreased constantly from 3.06 per cent in 1954 to 0.42 per cent in 1998. The decline was more rapid in the 1960s and 1970s.

Figure I.1. Composition of world exports by level of development, 1950-1998



Source: UNCTAD.

Figure I.2. LDC share in world exports, 1950-1998

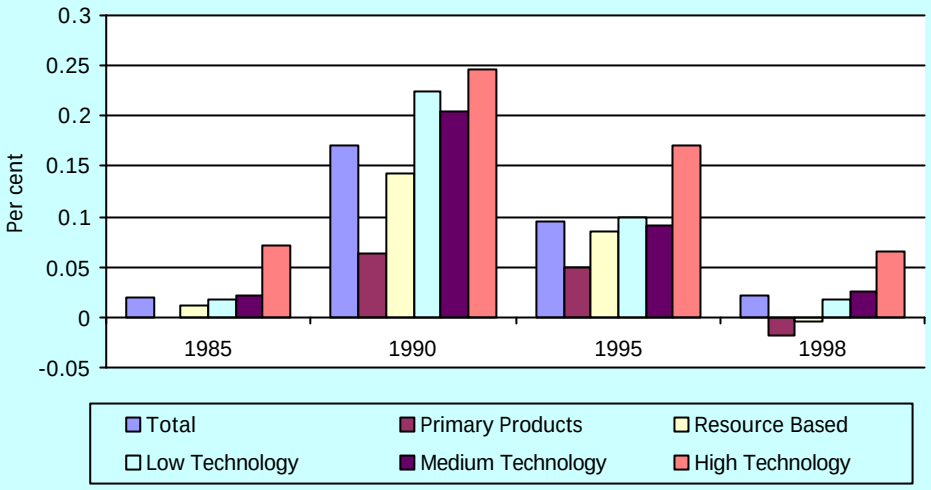


Source: UNCTAD.

During the same period, there was also a significant change in the structure of world trade. The category of exports showing consistently high levels of growth was high-technology products.[1] The slowest growing products were the primary and resource based manufacturing products, or the products where developing countries and LDCs in particular have a comparative advantage (figure I.3). As a result, high and medium technology intensive products now account for the largest share of world trade. Agricultural products, which only twenty years ago accounted for the largest proportion of the value of trade, now account for the smallest proportion (figure I.4). Indeed, the value of trade in office products now exceeds the value of agricultural trade. As a group, the developed countries have consistently held their market share of products in the high and medium technology sectors (figure I.5). On the other hand, developing countries as a group are the ones that have shown the most dynamic growth in the high technology sectors (figure I.6).

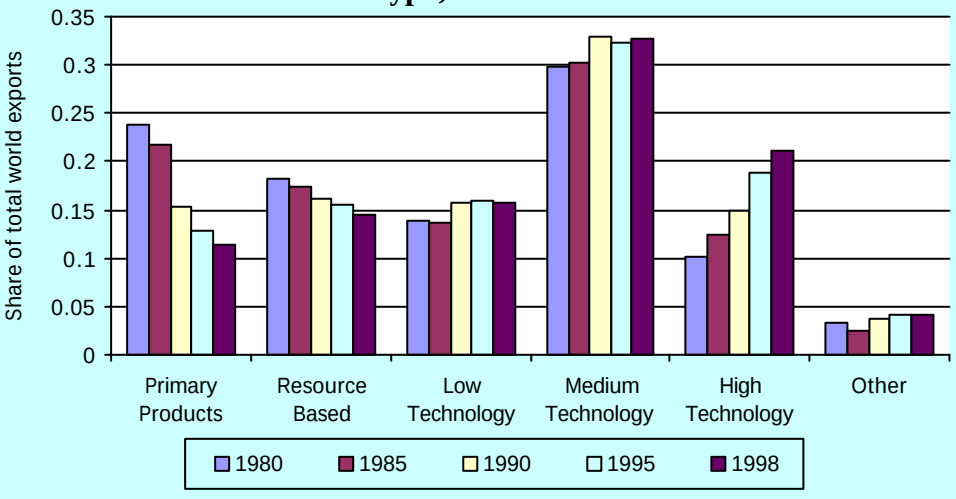
However, while this is a positive development, the less developed countries, in particular the LDCs have not been part of this growth process. Consider the developing countries of Africa as a group. Figure I.7 shows that their trade is dominated in value terms by primary products. Over the period between 1980 and 1998 there was some growth in their low technology exports in terms of value and to some extent medium technology exports. However, in terms of world trade they are the most competitive in primary products with approximately 5 per cent of total trade. Their share for the rest of the products is below 1 per cent. Therefore, these countries have a large share in products that are decreasing in importance in world trade.

Figure I.3. Rates of export growth by product type, 1980-1998



Source: UNCTAD.

Figure I.4. Composition of world exports by product type, 1980-1998



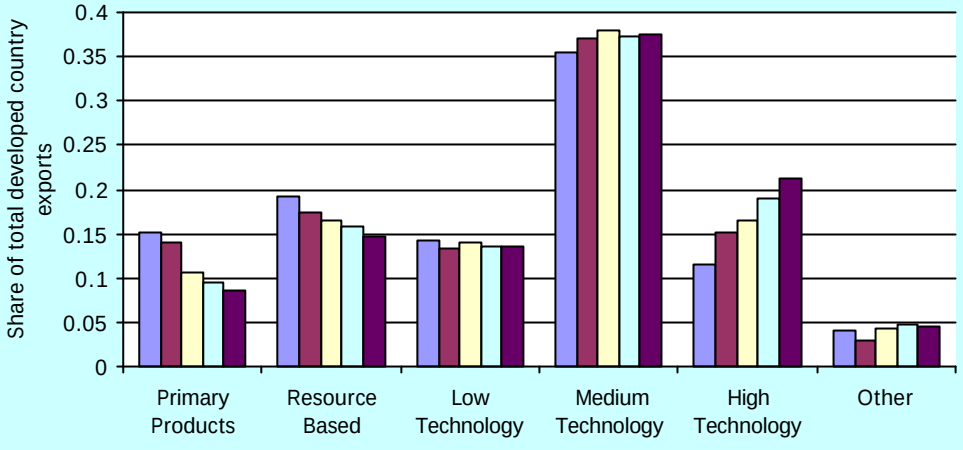
Source: UNCTAD.

This poor trade performance of LDCs also depends upon domestic factors, such as structural rigidities and bottlenecks that hamper the transition to manufactures and processed products (associated with insufficient human capital, missing capital markets, lacking infrastructure). Given the long-run tendency for relative commodity prices to deteriorate, the terms of trade of LDCs will continue to worsen if they remain locked in primary sector export production (figure I.8).

Table I.1 provides the export concentration indices and number of exported products for selected LDCs. Despite sustained efforts to diversify their export base, the number of products exported by LDCs is very small (especially for Pacific LDCs) while for others it is well below the 1998 non-LDC world average. Also, for certain LDCs, the export concentration index is close to 1 (Kiribati, Zambia and Vanuatu) and much higher than the average of non-LDC countries.

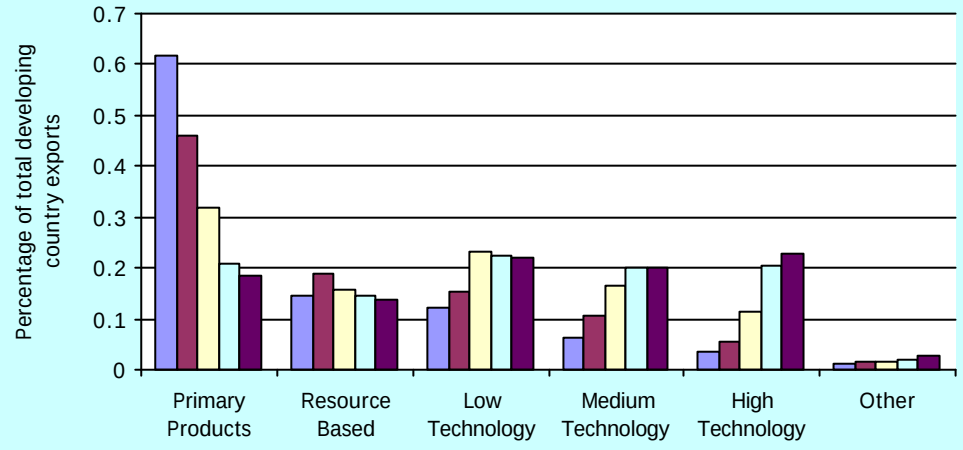
The absence of change in structure of LDC exports in the periods examined confirms that the level of economic restructuring and adaptation to the changes in the global economies was very limited. This lack of economic dynamism also largely explains why, over the years, many LDCs were not able to significantly alter the pre-colonial pattern of export concentration in agricultural or mineral products (table I.2).

Figure I.5. Composition of developed country exports by product type, 1980-1998



Source: UNCTAD.

Figure I.6. Composition of developing country exports by product type, 1980-1998



Source: UNCTAD.

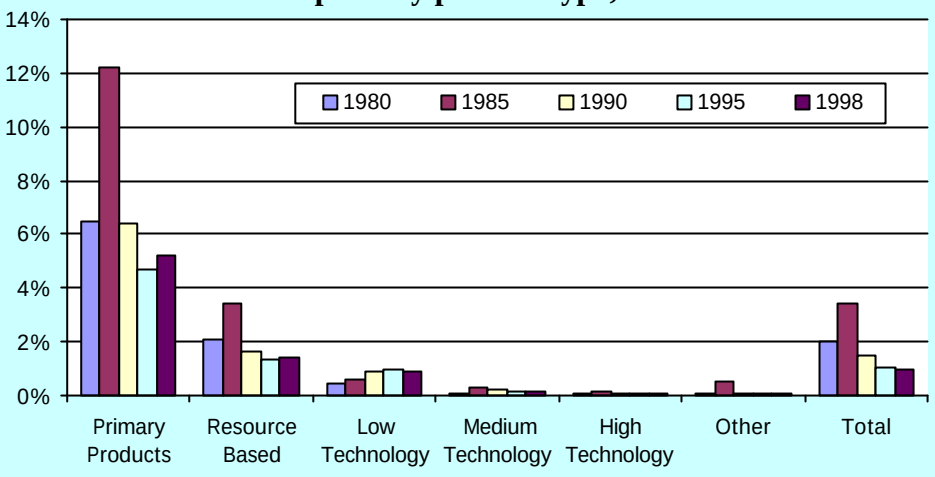
B. Patterns of protection

Tables I.3 and I.4 present a picture of the pattern of protection facing LDC exports. The tables were developed using a methodology that identifies the key products LDCs export to a range of geographic markets. Table I.3 shows the most favoured nation tariff rates. Table I.4 shows the a pplied tariff rates, which are those that apply to exports taking into account both non-preferential and preferential trading arrangements. The tables clearly show that the highest levels of protection faced by LDCs is in South Asia. Furthermore, the two tables give a measure of the value of preferences to LDCs, both in the context of non-reciprocal (Quad rates) and reciprocal agreements (Sub-Saharan Africa), which is defined as the difference between the MFN and applied rates.

Preferential market access for developing countries has its roots in the idea that unilateral preferential trade liberalization favours development.[2] The developmental-oriented trade measures initially sought by developing countries were inward-oriented. For instance article XVIII of the GATT, allowed developing countries to increase their tariff bindings and introduce quantitative restrictions if these measures served a developmental purpose. Later, in the 1960s and early 1970s, the inward oriented-approach was gradually paralleled by outward-oriented demands for preferential market access

in developed markets. The importance of export-oriented strategies for developing countries, as evidenced by the experience of Asian countries, led to a rethinking of the international development strategies. As early as 1964, the first UNCTAD conference in Geneva advanced the idea

Figure 1.7. Developing Africa's exports as a share of world exports by product type, 1980-1998



Source : UNCTAD.

Table I.1. Export concentration indicators for selected LDCs, 1980s-90s

Country	1980s[3]		1990s[3]	
	Export concentration index[1]	Number of commodities exported[2]	Export concentration index[1]	Number of commodities exported[2]
Bangladesh	0.36	44	0.32 [i]	83
Central African Republic	0.49	17	0.44	20
Haiti	0.26	35	0.25	30
Kiribati	0.75	2	0.73 [g]	5
Madagascar	0.47[d]	48	0.26	63
Malawi	0.64	37	0.68 [g]	52
Nepal	0.36	27	0.46	37
Samoa	0.55[b]	10	0.4 [e]	9
Togo	0.51[c]	36	0.47[e]	47
United Republic of Tanzania	n/a	n/a	0.27[h]	76
Vanuatu	0.84 [d]	7	0.4 [f]	15
Zambia	0.82 [a]	30	0.83 [g]	85
Non-LDC world average			0.20[i]	182[i]

Source: UNCTAD (2000).

1. Export concentration index takes values between 0 (minimum concentration) and 1 (maximum concentration). It is calculated using the following formula: $Ex_i = \frac{\sqrt{\sum_i^n \left(x_i / X\right)^2}}{\sqrt{1/n}}$, where n equals 239, the number of products at the three-digit SITC, Revision 2 level, and (x_i/X) represents the share of good in total exports.
2. Number of products exported at three-digit SITC, Revision 2 level; this figure includes only those products that are greater than $ 100,000 or more than 0.3 per cent of the country's total exports.
3. If otherwise stated, data are for 1988 and 1997.

a. 1979
b. 1980
c. 1981
d. 1984
e. 1990
f. 1994
g. 1995
h. 1996
i. 1998

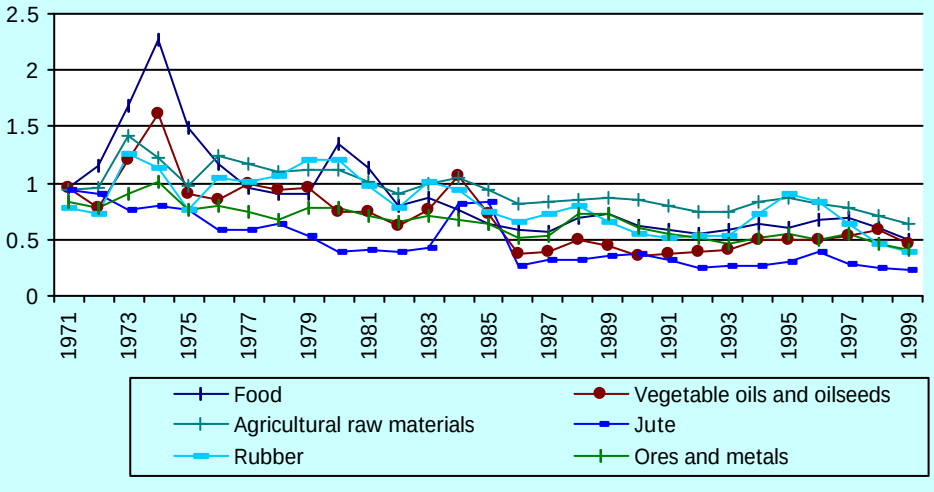
Table I.2. Selected LDC primary exports, 1999

	First product	Per cent	Second product	Per cent
Dominant agricultural export				
Sao Tome & Principe	Cocoa	96.4	n/a	
Uganda	Coffee	69.0	Cotton	20.2
Malawi	Tobacco	63.2	Tea	6.7
Solomon Islands	Timber	59.2	Fish products	21.2
Myanmar	Food & live animals	50.6	Crude materials (inedible)	28.2
Guinea-Bissau	Cashew nuts	85.8	Wood	6.3
Burundi	Coffee	80.7	Tea	7.8
Rwanda	Coffee	74.4	Tea	10.0
Ethiopia	Coffee	63.5	Hides	13.2
Chad	Cotton	59.4	Live cattle	10.9
Mauritania	Fish	56.3	Iron ore	41.8
Mali	Cotton fibre	55.5	Live animals	19.8
Afghanistan	Dried fruits and nuts	51.3	Carpet and rugs	13.1
Maldives	Fish products	59.4	Apparel and clothing	17.4
Kiribati	Copra	63.0	Fish	6.2
Gambia	Groundnuts	54.1	n/a	
Samoa	Coconut products	70.3	Kava	6.7
Dominant mineral exports				
Yemen	Petroleum	95.3	Animals	2.5
Angola	Petroleum	74.6	Diamonds	2.5
Guinea	Bauxite & alumina	59.9	n/a	
Liberia	Iron ore	55.1	Rubber	28.0
Zambia	Copper	52.0	Cobalt	11.3
Niger	Uranium	51.9	n/a	
Sierra Leone	Diamonds	50.6	Titanium	5.7
Dominant manufactured export				
Bangladesh	Clothing	62.7	n/a	
Lesotho	Clothing	54.8	n/a	
Nepal	Basic manufactures	51.6	Misc. manufactures	32.7

Source: UNCTAD.

of a special chapter on trade and development to be added to the GATT agreement. With this addition, the requirement of reciprocity in preferential trade negotiations was abandoned for developing countries. Furthermore, in response to UNCTAD's Resolution no. 21/1968 laying down the framework for a Generalized System of Preferences for developing countries, many developed countries introduced national schemes of preferential market access for developing countries.

Figure I.8. Relative commodity price indices to manufactures price index, 1970=100



Source: UNCTAD (2000).

During the 1970s, several advanced economies introduced preferential mar-

Table I.3. Weighted MFN tariff rates facing LDC exports, 1999
(in per cent)

Description	Developed countries	South Asia	Middle East and North Africa	Latin America and the Caribbean	Europe and Central Asia	East Asia and The Pacific	Sub-Saharan Africa	Quad	World
Agricultural and fishery products	**7.11**	**28.52**	**7.55**	**15.77**	**16.60**	**14.05**	**16.45**	**6.77**	**10.06**
Crustaceans (live)	7.74	16.40	15.06	30.02	19.79	9.61	36.71	7.83	8.07
Other fish	8.13	13.76	12.83	14.61	9.74	22.73	19.77	8.32	10.90
Edible fruit and nuts	6.92	38.04	12.95	17.04	8.95	6.41	32.93	7.04	26.85
Coffee and substitutes with coffee	1.43	35.00	16.34	12.71	14.44	0.88	7.92	1.44	3.44
Oil seeds and miscellaneous grain, seeds and fruits	0.51	33.56	8.14	11.20	8.01	14.07	17.32	0.43	4.60
Other agricultural and fishery products	14.91	13.80	29.19	18.63	21.96	3.16	26.08	15.49	15.40
Minerals and fuels	**0.05**	**6.47**	**14.40**	**5.90**	**0.66**	**4.51**	**11.19**	**0.05**	**2.91**
Ores, slag and ash	0.00	5.00	12.00	n.e.	0.00	1.30	n.e.	0.00	0.09
Crude and refined petroleum oil	0.10	30.00	20.00	6.02	3.85	4.54	15.73	0.11	3.64
Other minerals and fuels	0.00	5.00	n.e.	5.20	0.00	3.00	18.23	0.00	2.21
Manufactures	**7.52**	**25.33**	**12.61**	**10.79**	**8.11**	**2.40**	**10.69**	**7.73**	**7.54**
Rubber, leather and footwear products	7.78	13.05	12.74	11.89	14.11	1.38	21.82	7.68	6.44
Wood and wood products	0.88	7.69	11.54	18.11	3.23	1.96	13.51	0.84	2.34
Cotton products	0.32	4.54	11.90	8.38	0.00	1.96	2.99	0.00	2.15
Knitted or crocheted articles	13.88	35.69	16.04	27.53	21.30	1.90	68.35	13.87	13.95
Non-knitted or crocheted articles	11.86	35.46	13.32	24.90	22.99	6.29	26.48	11.80	11.96
Diamonds	0.00	40.00	4.17	4.54	5.00	0.34	n.e.	0.00	0.01
Other manufactured products	1.70	34.51	11.20	7.51	1.93	2.77	13.35	1.68	2.84
Other products not elsewhere specified	6.11	29.62	5.23	11.45	8.29	7.56	10.18	5.14	10.26
Total by geographical region	6.75	25.90	8.88	10.11	11.49	4.49	12.39	6.83	7.34

Source: UNCTAD and World Bank (2001).

n.e. = no exports.

ket access schemes for developing countries. The European Union and Japan introduced their GSP programmes in 1971, Canada in 1974, and the United States in 1976. Since these tariff preferences contradicted the general MFN principle, as embodied in GATT's article I, GSP schemes required a waiver from the main GATT rules. The GSP schemes were firstly introduced into the GATT framework in 1971, through a ten-year waiver. This waiver was superseded in 1979 by the Enabling Clause, making the Generalized System of Preferences (GSP) a perrenial feature in the multilateral trading system. Currently, there are 15 GSP programmes throughout the world that have been introduced over the years, which includes one programme for all member States of the European Union (UNCTAD, 1998a).

The number of GSP schemes increased in the 1980s as many other developed countries introduced bilateral schemes. Under the GSP, developed countries (GSP donor countries) applied, on a voluntary and unilateral basis, preferential tariff rates to imports from developing countries (GSP beneficiaries). Apart from the Quad countries, numerous other countries have introduced preferential market access schemes for LDCs (WTO, 2001b). However, they usually exempt many products deemed sensitive by donor countries (such as agricultural and textile products), and rules of origin differ markedly from one scheme to another.

Box I.2. The Generalized System of Preferences (GSP)

The concept of GSP originated in the work of UNCTAD with the objective of introducing a harmonized preferential regime across donor countries. The Generalized System of Preferences or "GSP" grants products originating in developing countries lower tariff rates than those normally enjoyed under Most-Favoured-Nation status as a special measure to increase developing countries' export earnings and promote their development.

The GSP is defined in UNCTAD Resolution no. 21/1968, and was permanently introduced into the WTO framework by the Decision on "Differential and More Favourable Treatment, Reciprocity, and Fuller Participation of Developing Countries" or the "Enabling Clause" of 1979. The main principles underlying the GSP schemes are:

- Generality (all developing countries are beneficiaries);
- Non-reciprocity (no obligation for developing countries to reciprocate);
- Non-discrimination among beneficiairies.

Source: UNCTAD.

Table I.4. Weighted applied tariff rates facing LDC exports, 1999
(in per cent)

Description	Developed countries	South Asia	Middle East and North Africa	Latin America and the Caribbean	Europe and Central Asia	East Asia and The Pacific	Sub-Saharan Africa	Quad	World
Agricultural and fishery products	**2.09**	**28.32**	**7.55**	**14.83**	**11.91**	**13.98**	**10.96**	**1.65**	**5.99**
Crustaceans (live)	0.65	16.40	15.06	30.02	14.34	9.40	11.49	0.66	1.83
Other fish	1.79	13.76	12.83	14.61	9.63	22.73	19.29	1.82	5.99
Edible fruit and nuts	0.09	38.04	12.95	17.04	8.89	6.41	23.49	0.03	23.99
Coffee and substitutes with coffee	0.00	35.00	16.34	12.71	7.40	0.88	4.51	0.00	1.66
Oil seeds and miscellaneous grain, seeds and fruits	0.38	33.35	8.14	11.19	5.77	14.07	7.60	0.31	4.41
Other agricultural and fishery products	5.11	13.04	29.19	16.79	18.41	3.16	7.82	5.25	6.94
Minerals and fuels	**0.00**	**6.47**	**14.40**	**5.90**	**0.66**	**4.51**	**9.32**	**0.00**	**2.85**
Ores, slag and ash	0.00	5.00	12.00	n.e.	0.00	1.30	n.e.	0.00	0.09
Crude and refined petroleum oil	0.00	30.00	20.00	6.02	3.85	4.54	15.41	0.00	3.61
Other minerals and fuels	0.00	5.00	n.e.	5.20	0.00	3.00	10.78	0.00	2.19
Manufactures	**4.37**	**24.65**	**12.61**	**10.29**	**7.98**	**2.38**	**7.43**	**4.50**	**5.00**
Rubber, leather and footwear products	2.75	13.00	12.74	11.54	13.80	1.35	17.37	2.59	3.39
Wood and wood products	0.36	7.68	11.54	18.11	3.19	1.96	5.76	0.31	2.18
Cotton products	0.32	4.54	11.90	8.38	0.00	1.96	1.04	0.00	2.10
Knitted or crocheted articles	8.32	35.69	16.04	26.28	21.14	1.84	23.97	8.37	8.45
Non-knitted or crocheted articles	7.19	35.46	13.32	20.77	22.86	6.24	13.40	7.21	7.36
Diamonds	0.00	40.00	4.17	4.54	5.00	0.34	n.e.	0.00	0.01
Other manufactured products	0.49	34.51	11.20	7.51	1.89	2.73	8.85	0.21	1.95
Other products not elsewhere specified	3.29	28.78	5.23	10.68	7.94	7.48	7.01	2.09	8.29
Total by geographical region	**3.45**	**25.47**	**8.88**	**9.69**	**9.43**	**4.47**	**8.79**	**3.43**	**4.88**

Source: UNCTAD and World Bank (2001).

n.e. = no exports.

Despite these policy initiatives the 1990s were marked by substantial erosion of the LDC preferential market access. One main factor that contributed to this situation was the implementation of the Uruguay Round results. Despite efforts from donor countries to expand the current coverage of their GSP schemes for LDCs, there are still a number of factors that negatively affect their exports. Thus, in terms of product coverage, at HS6 level there are still a significant number of tariff lines that continue to face ad-valorem or specific tariffs in Quad countries (table I.5).

Table I.5. Structure of LDC exports and protection in Quad countries, 1999

	Canada	European Union	Japan	United States
Total LDC imports[a] (1)	227 677	9 874 807	1 019 120	6 962 416
Total imports in identical product lines[a] (2)	83 670 842	637 766 105	126 378 101	528 279 235
Total imports[a] (3)	211 085 424	783 684 206	305 438 116	1 015 143 866
LDC share of competitive imports ((1) / (2))	0.27%	1.55%	0.81%	1.32%
LDC share of total imports ((1) / (3))	0.11%	1.26%	0.33%	0.69%
Total tariff lines (HS6)	758	2222	545	946
in lines with protection	201	55	74	335
of which above 5 per cent	181	51	36	282
LDC Exports entering duty free[a]	103 260	9 566 647	498 534	3 596 270
LDC Exports dutiable[a]	124 417	308 160	520 586	3 366 146
LDC Exports dutiable above 5 per cent[a]	123 827	308 134	226 274	3 272 917
Share of LDC exports facing protection	54.60%	3.12%	51.10%	48.30%
Share of LDC exports facing tariff > 5 per cent	54.40%	3.12%	22.20%	47.00%
Share of lines with tariff	18.50%	4.20%	12.10%	17.10%
Share of lines with tariff > 5 per cent	12.80%	3.80%	7.60%	14.10%

Source : UNCTAD.

[a] Thousands of US dollars.

C. Outline of the study

In response to the urgent need to assist LDCs better integrate themselves into the world economy a number of trade initiatives have been advanced. Of these the most notable has been the Everything But Arms (EBA) initiative of the European Union. This was accompanied by a number of additional market opening exercises from other countries such as Japan, Canada and New Zealand. The focus of this study is the economic impact of the EBA initiative and possible impacts if the initiative was to be adopted by Canada, Japan and the United States, the remaining members of the Quad.

The next section reviews the existing non-reciprocal preference schemes offered by Canada, Japan, the United States and the European Union. It places in context the current efforts to enhance market access. Section IV uses a computable general equilibrium model (CGE) to simulate the impacts of duty and quota free market access for LDCs into the European Union and the Quad. This part of the study advances the research into the development effects of trade preferences to LDCs in many

respects. First, it accounts for preferential trading agreements. Second, it isolates a number of LDCs for analysis, which is combined with a regional aggregate of Sub-Saharan Africa. The regional aggregation of the model also allows for the analysis of the impacts on third countries that are neither LDCs, nor members of the Quad. Third, the product aggregations also allow for an analysis of sectors that are of importance to LDCs. Despite these advances, CGE models have limitations as a research methodology, such as the high level of disaggregations. In order to account for some of these problems, section V analyses the possible impacts at a disaggregated level to identify both key products and key countries that will be affected by these types of initiatives. Section VI summarizes the principal conclusions of the study.

NOTES

[1] Product definition are contained in Bora (2001).

[2] North-South trade preferences existed before the introduction of GSP schemes in the form of colonial preferential trading schemes (see for instance the scheme between United Kingdom and the Commonwealth countries or the ones regulating trade between France and its ex-colonies). However, unlike the GSP schemes, these colonial preferences were reciprocal.

II. NON-RECIPROCAL AGREEMENTS, LDCs AND THE QUAD COUNTRIES

A. Introduction

This chapter reviews the experience of developing countries, and LDCs in particular with non-reciprocal agreements where the donor country is either Canada, the European Union, Japan or the United States. A number of key issues arise with respect to the pattern of trade and protection in the bilateral relationships of these countries with LDCs. In particular, there is a wide range of preference offered, in terms of products and countries. Also, given the specific features of these schemes, it appears that the relationship between the value of LDC exports and the size of the preference margin is not always positive. These issues are important in two ways. First, they assist in identifying the base from which complete duty and quota free access is to be provided. Clearly, countries that offer lower preference margins on a narrow range of products will find it politically difficult to implement complete market access. Second, this chapter will also assist in identifying both the sources of gains and losses and the degree of structural adjustment that countries giving trade preferences may experience in implementing complete market access.

B. Canada

Canada has, as have other developed countries, over the years introduced several non-reciprocal preferential schemes to improve market access for developing countries. Apart from the Generalized Preferential Tariff (GPT) regime, Canada currently grants several preferential tariff regimes (table II.1). Out of these, several are non-reciprocal: the Commonwealth Caribbean Countries Tariff (CCCT), the Generalized Preferential Tariff (GPT) and the Least Developed Country Tariff (LDCT). The British Preferential Tariff (BPT) has been terminated (WTO, 1998).[1]

Table II.1. Canada: Import duties by tariff regime, 1998

	MFN	UST	MT	MUST	CT	CIAT	GPT	LDCT	CCCT	AUT	NZT
Number of non-ad valorem lines	379	111	276	378	253	327	314	312	147	364	349
Share of duty-free lines (%)	45	98	77	68	84	92	60	82	86	47	48
Average of dutiable rates[b]	14	202	19	19	27	43	16	29	34	14	14
Average ad valorem tariff (%)	7.7	3.0	4.4	6.1	4.1	3.5	6.2	5.0	4.8	7.3	7.3
Of which:											
Agriculture and livestock (ISIC 11)[c]	8.7	5.2	5.5	8.8	6.0	7.4	7.7	6.7	5.5	8.2	8.2
Crude petroleum and gas (ISIC 22)	6.3	0.0	1.0	1.0	0.0	0.0	2.5	0.0	0.0	6.3	6.3
Food products (ISIC 311)[c]	28.3	23.4	23.5	28.0	24.0	26.8	27.2	26.1	24.1	28.0	28.0
Animal feeds and other food products (ISIC 312)[c]	37.3	30.7	31.7	37.3	31.2	33.6	35.4	34.0	31.5	37.2	37.2
Beverages (ISIC 313)[c]	11.1	4.8	2.9	11.1	3.0	10.3	10.3	9.6	4.8	10.6	10.6
Tobacco products (ISIC 314)	9.8	0.0	0.0	9.8	0.0	6.5	6.5	5.9	0.0	9.8	9.8
Textiles (ISIC 321)	11.1	0.0	5.7	11.0	5.7	0.0	9.7	7.8	9.6	10.4	10.4
Clothing (ISIC 322)	17.2	0.0	8.9	16.6	8.8	0.1	16.1	14.3	15.5	15.0	15.0
Footwear (ISIC 324)	13.0	0.0	6.3	6.7	9.6	0.0	12.3	10.5	12.3	10.8	10.8
Furniture (ISIC 332)	6.3	0.0	1.8	2.4	0.0	0.0	4.1	1.6	0.0	6.3	6.3
Rubber products (ISIC 355)	8.1	0.0	2.2	2.6	2.6	0.0	5.2	2.5	2.6	5.9	5.9
Plastic products (ISIC 356)	7.1	0.0	2.7	3.2	2.5	0.0	4.0	0.0	0.0	7.1	7.1
Shipbuilding and repairing (ISIC 3841)	11.1	0.0	4.4	4.7	0.0	0.0	9.5	0.0	0.0	11.1	11.1

Source: WTO (1998).

[a] Duties consist of ad valorem tariff lines, available ad valorem equivalents of non-ad valorem lines and, if these are not available, ad valorem components of non-ad valorem lines.
[b] Average of non-duty-free lines.
[c] Includes both in-quota and out-of-quota tariffs.
Note: The total number of lines is 8,073.

MFN: Most favoured nation
UST: United States Tariff
MT: Mexico Tariff
MUST: Mexico-United States Tariff
CT: Chile Tariff
CIAT: Canada-Israel Agreement Tariff
GPT: Generalized Preferential Tariff
LDCT: Least Developed Country Tariff
CCCT: Commonwealth Caribbean Countries Tariff
AUT: Australia Tariff
NZT: New Zealand Tariff

1. Trade provisions

a. General Preferential Tariff and Least Developed Country Tariff

Canada's GPT scheme provides preferential tariff treatment for imports from developing countries and countries in transition since 1974. In March 1994, Canada's GPT legislation was extended for ten years. While the scheme now includes most industrial and agricultural items, textiles, clothing and

footwear are only partly covered, and agricultural products under tariff quotas are excluded. Further reforms to the GPT began in January 1996 to reduce most GPT rates to levels at least two-thirds of applied MFN rates by 1999. A revision of Canada's GPT, initiated in 1994, was intended to stem the erosion of preferences in the wake of the Uruguay Round and NAFTA. The product coverage was also extended by approximately 220 lines (WTO, 1998).

In late 1998, Canada examined improvements to the preferential market access offered to least developed countries. Imports from least developed countries were subject to the LDCT, which was available on all tariff lines covered by the General Preferential Tariff. Some 82 per cent of lines were duty free under the LDCT. This included expanding the duty-free product coverage under the treatment to cover all products except textiles, apparel and footwear and the out-of-quota tariff rates for tariffied agricultural goods. Although safeguard measures may be applied, unlike other GSP schemes, the Canadian GPT does not have a graduation mechanism. The most recent initiative was taken by Canada in 2000, when 570 new 8-digit tariff lines were added to the LDCT. Approximately 90 per cent of tariff lines are now granted duty-free access for LDCs (DFAIT, 2000). However, the implementation of the quota free treatment was not mentioned and a number of products, including the textile and clothing products, are not covered by the measure.[2]

b. Commonwealth Caribbean Countries Tariff

Imports from 18 Commonwealth Caribbean countries are subject to the recently reviewed CCCT. With the introduction of the 1998 Customs Tariff, product coverage under the duty-free provisions of the CCCT was expanded to include all industrial products with the exception of textiles, apparel and footwear. The CCCT provides duty-free access on more than 85 per cent of all tariff items. In 1997, tariffs on dutiable items averaged 34 per cent. During 1997, 95 per cent of total imports from CCCT countries entered Canada duty-free. The trade-weighted tariff average on dutiable items imported from CCCT countries in 1997 was 8.9 per cent (WTO, 1998).

2. Trade patterns

In 1999, Canadian imports from LDCs totalled over $220 million, of which 55.25 per cent were eligible for duty-free entry. Table II.2 provides the HS6 tariff lines that grant better-than-MFN and better-than-GPT market access to LDC exports. However, not all products eligible for LDCT rates actually receive preferential access. In 1998, the latest year for which data were available, the GPT utilization rate (imports benefiting from GPT rates relative to total GPT eligible imports) was 59.2 per cent.[3] Out of 748 HS6 tariff lines with non-zero LDC exports in 2000, 312 enjoyed a preferential margin vis-à-vis the MFN applied tariff and 208 LDC exports (at HS6 level) received preferences vis-à-vis the GPT tariff. Out of the 312 HS tariff lines with an MFN preferential margin for LDCs, 21 faced positive tariffs (table II.2), all the others being duty-free.

The share of LDC imports in Canada's total imports was 0.25 per cent in 1998. In this context the recent initiative of Canada to expand, in September 2000, the list of LDC products eligible for duty-free entry is commendable. Yet, LDC products are still facing tariffs on more than 700 HS8 lines, on some products exceeding 250 per cent (table II.3).[4] Obviously such high tariffs have a prohibitive effect on LDC exports. LDCs are not able to export products under these lines, although they export similar products at a higher level of aggregation.

Another indicative figure is the share of LDC exports receiving preferences, compared to the

MFN treatment. Thus, when compared to MFN market access, the current preferences enjoyed by LDCs remain very small, only 6.75 per cent of their HS6 total exports to Canada enjoying preferential market access. This rather low share suggests that there is little matching between LDCT preferences and LDC export capacity. This low share may also be due to the fact that more than 40 per cent of LDC exports are eligible for zero MFN tariffs.

Table II.2. LDC exports to Canada receiving better than MFN tariffs, 1999

HS	Description	World exports ($000)	LDC exports ($000)	LDC share (%)	MFN rate	LDCT rate [a]	LDC margin [a]
190530	Sweet biscuits; waffles and wafers	123 819	1	0	2.43	1.21	1.22
940190	Parts	1 261 070	82	0.01	5.88	3.88	2.00
961210	Ribbons	51 454	2	0	9.88	7.75	2.13
060390	Cut flowers and flower buds	5 837	8	0.14	4.83	2.67	2.16
230990	Animal feeding	153 316	230	0.15	3.25	1.05	2.20
151790	Margarine	22 073	2	0.01	7.38	4.63	2.75
950699	Toys, games & sports requisites;	126 318	8	0.01	5.50	2.21	3.29
611300	Garments	2 729	1	0.04	10.17	6.83	3.34
650590	Headgear and parts thereof	54 798	3 103	5.66	9.33	5.17	4.16
621133	Apparel	24 766	906	3.66	14.50	10.25	4.25
621710	Apparel	3 483	2	0.06	12.25	8.00	4.25
580610	Special woven fabrics	3 164	1	0.03	9.67	5.33	4.34
852812	Reception apparatus for television	642 076	170	0.03	4.82	0.36	4.46
621143	Apparel	24 995	570	2.28	12.00	6.83	5.17
621149	Apparel	3 980	2	0.05	11.50	6.33	5.17
630790	Blankets and travelling rugs	63 479	6	0.01	13.31	7.31	6.00
210690	Miscellaneous edible preparations	361 078	10	0	6.96	0.86	6.10
210390	Miscellaneous edible preparations	99 153	11	0.01	9.50	3.17	6.33
640419	Footwear	88 343	115	0.13	11.38	5.00	6.38
630710	Textile articles	17 261	1	0.01	19.00	9.50	9.50
611010	Knitted apparel	55 187	611	1.11	20.50	10.25	10.25

Source: UNCTAD.

[a] Aggregated from both LDCT-covered and non-covered products. For LDCT covered-products the LDCs have duty-free and quota-free market access. Tariff rates refer to year 2000.

Table II.3. Canadian tariff peaks with no LDC preference, 2000

Product code (HS)	Short description	Applied MFN rate [a] (%)
22029043	Mineral water	263
19012012	Preparation of cereal	253
19012022	Preparation of cereal	251
21069032	Miscellaneous edible preparations	218
21069034	Miscellaneous edible preparations	218
23099032	Residues & waste from the food industry	211

Source: UNCTAD.

[a] Out-of-quota MFN tariffs. In-quota tariffs are zero.

C. The European Union

The European Union has been the main actor in the trade and development nexus, internally by removing numerous barriers to imports and externally by developing its network of free trade agreements (FTAs). As a result of these agreements, the European Union now trades duty- and quota-free with more than 30 countries in Eastern Europe, Africa, Latin America, and Asia.[5] Apart from reciprocal free trade agreements, it has also initiated two non-reciprocal trade arrangements: the GSP and ACP trade schemes.

1. GSP

a. Trade provisions

The GSP Programme of the European Union is quite different from that of other Quad countries.[6] Over time, the European Union scheme underwent a number of considerable changes. The programme is divided into four product groups. The European Union GSP scheme grants preferences for a given product as a percentage reduction of the MFN duty rates. This percentage depends on a given product's "sensitivity", which is determined by the situation of the sector manufacturing the same product in the Community. According to its degree of sensitivity, each product is classified as belonging to one of four groups.[7] Unlike the mechanism described above, for some countries (LDCs and countries negatively affected by drug production) duty free access to the European Union market is granted for a larger number of products. Although the pre-EBA LDC market access to the European Union was one of the broadest, more than 900 products (at HS8 level) were subject to ad-valorem or specific duties. Table II.5 provides a selection of HS 2 products and the number of dutiable lines, faced by LDCs exports in 2000 to the European Union.

Table II.4. Non-ACP LDC products receiving less-than-ACP treatment, 2000

HS 2	Description	No. of lines (CN8)
01	Live animals	3
02	Meat and edible meat offal	126
03	Fish & crustacean	80
07	Edible vegetables	6
08	Edible fruit and nuts	1
10	Cereals	23
11	Malt, starches, wheat gluten	61
12	Oil seed, oleaginous fruits	4
15	Animal and vegetable fats & oils	1
16	Preparation of meat, fish or crustaceans	14
17	Sugars and sugar confectionery	8
23	Residues & waste from the food industry	17
	Total	**344**

Source: UNCTAD.

Table II.5. Selected LDC exports facing tariffs in the European Union, by major product category, 2000

HS 2	Number of dutiable (HS6) lines	Description
11	29	Malt, starches, wheat gluten
02	27	Meat and edible meat offal
04	20	Dairy prod; birds' eggs; natural honey
19	15	Flour, starch, pastry products
17	14	Sugars and sugar confectionery
10	12	Cereals
22	11	Beverages, spirits and vinegar
08	10	Edible fruit and nuts

Source: UNCTAD.

Since 1995, the European Union has eliminated all quantitative limitations. Yet, its GSP scheme maintained the "*graduation mechanism*" under which the benefit of the scheme is phased out for specific sec-

tors or countries that have reached a degree of competitiveness where they increased their exports even without enjoying GSP treatment. Moreover, the European Union GSP scheme contains safeguard measures that may suspend the preferential market access. When such measures are applied, MFN rates are reinstated on imports from one or more beneficiary country.

b. Trade patterns

The European Union market is the most important for LDC exports in terms of export value. In 1999, it absorbed 37 per cent of total LDC exports. Among the 49 LDCs, 15 are dependent on this market, as over 50 per cent of their exports are directed there. In 1998, 52 per cent of total LDC exports to the European Union entered MFN duty-free. Out of total LDC exports, 44.7 per cent received better than MFN. Moreover, only 3 per cent of existing LDC exports still face a tariff into the European Union. Thirty-nine LDCs have benefited from preferential market access under the ACP regime, while 9 LDCs were under the GSP scheme.

Since 1998, the preferential market access for LDCs in the European Union has been enhanced so as to provide them with ACP-equivalent market access. Yet, there are still notable differences between the two preferential regimes. Table II.4 provides the number of tariff lines for which non-ACP LDCs receive less preferential market access, compared to ACP LDCs.

2. ACP

a. Trade provisions

Before EBA, the ACP States were accorded through the Lome Convention the most preferential and favoured terms of access to the European market. Virtually all ACP exports enter the European Union free of any tariff or quota restrictions – roughly 94 per cent of total ACP exports enter without restriction (100 per cent in the case of industrial products and 80 per cent for agricultural products). In addition, attached to the Lome Convention are four commodity protocols, covering beef, sugar, bananas and rum, which provide certain ACP countries with quota-free access to the European Union. The Convention also guaranteed certain export earnings from the sale of raw materials (STABEX) and minerals (SYSMIN). In the new Cotonou Agreement (the post-Lome ACP-EU trade regime), since there are no trade restrictions on rum, there was no need for the Lome rum protocol to be extended. The European Union also intends to dismantle the STABEX and SYSMIN instruments in the new trading regime.

Another important feature of the post-Lome regime is the creation (by 2008) of reciprocal trade arrangements between the ACP countries and European Union. Although ACP LDCs have an incentive not to enter in reciprocal free trade agreements with the European Union, most of them are part of existing regional agreements whose ACP members have strong incentives to conclude free trade agreements with the European Union by 2008. However, to redress this apparent disincentive to reciprocate, article 29 (b) and article 84 of the Cotonou Agreement strongly encourage the ACP LDCs to fully participate in regional cooperation.

b. Trade patterns

The ACP-EU trade relations have been very specific with regard to certain commodities of special interest to a number of ACP countries. These products (agrifood and mineral products) were

dealt with in separate protocols of the Lome Agreements. Under these protocols, the ACP and European Union agreed on a 'managed' trade regime that took into account the development needs of ACP countries. Thus, for these products the European Union committed itself to buy minimum quantities from ACP countries at European Union intervention prices for agricultural and food products. In addition, support schemes (STABEX and SYSMIN) were introduced to stabilize the prices and export revenues of ACP countries that were relying on these major exports.

Although the shares of LDC exports are very small under the current market access (table II.6), further liberalization measures are expected to produce significant changes in the export of certain products, including: sugar, bananas and rice.

Table II.6. LDC exports of sensitive products to the European Union, 1999

HS 6	Description	LDC	Value ($000)
170111	Raw cane sugar	Malawi	17 502
		Tanzania	6 826
		Madagascar	2 821
		Zambia	1 475
		Myanmar	272
LDC share of the EU imports = 2.95%			
100630	Semi-milled or wholly milled rice	Madagascar	399
		Bangladesh	4
		Maldives	1
100620	Husked (brown) rice	Madagascar	26
		Myanmar	12
LDC share of the EU imports = 0.11%			
80300	Bananas	Rwanda	144
		Uganda	105
		Guinea	61
		Cape Verde	11
		Togo	7
		Burundi	5
		Equatorial Guinea	4
LDC share of the EU imports = 0.02%			
220840	Rum and tafia	Comoros	227
		Haiti	159
		Gambia	8
		Guinea	7
		Cape Verde	7
		Tanzania	1
		Nepal	1
LDC share of the EU imports = 0.12%			
020230	Boneless bovine meat	Uganda	217
020220	Meat of bovine animals	Uganda	3
LDC share of the EU imports= 0.06%			

Source: UNCTAD.

3. EBA

In September 2000 European Union Trade Commissioner, Pascal Lamy, formally announced the intention to grant duty-free and quota-free access for all goods (with the exception of arms) originating in least developed countries. EBA follows a series of initiatives taken by the European Union after the 1996 WTO Ministerial Conference in Singapore when developed countries committed themselves to improve market access for LDC products. In 1998, the European Union granted non-ACP LDCs preferences similar to those enjoyed by ACP countries through their ACP-EU preferential relations. In June 2000, the European Union expressed its intention to grant duty-free access for essentially all products from all LDCs, by the end of multilateral trade negotiations or by 2005, at the latest.

a. Trade provisions

The EBA proposal was enacted by the Council Regulation No. 416/2001 of 28 February 2001, amending EC Regulation No. 2820/98 applying a multiannual scheme of generalized tariff prefer-

Table II.7. EU-EBA: The pattern of liberalization

HS 2 code	Description	Number of liberalized products (8 digit level)	Per cent of liberalized tariff lines
02	Meat and meat products	173	18.82
04	Diary products	166	18.06
22	Beverages, spirits and vinegar	103	11.21
11	Milled products	77	8.38
20	Preparation of vegetables and fruits	74	8.05
10	Cereals	48	5.22
17	Sugars and sugar confectionery	45	4.90
19	Preparation of cereals	38	4.13
01	Live animals	30	3.26
23	Residues & waste from food industry	30	3.26
16	Prep of meat, fish or crustaceans	28	3.05
08	Fruits	25	2.72
07	Vegetables	19	2.07
18	Cocoa and cocoa preparations	19	2.07
21	Miscellaneous edible preparations	12	1.31
15	Fats and oils	10	1.09
38	Miscellaneous chemical products	8	0.87
35	Albumines and enzymes	6	0.65
29	Organic chemicals	5	0.54
12	Oil seeds	3	0.33
	Total	919	100.00

Source: Based on information available from the European Commission, at http://www.europa.eu.int/comm/trade/pdf/ebaprodlist.pdf

ences for the period 1 July 1999 to 31 December 2001, so as to extend duty-free access without any quantitative restrictions to 919 agricultural products originating in the least developed countries. More than 50 per cent of the liberalized tariff lines covered meat and dairy products, beverages and milled products (table II.7). EBA entered into force on 5 March, 2001.

EBA was adopted as an amendment to the existing GSP scheme in order to ensure its compatibility with the WTO rules. The basis for EBA under the WTO is paragraph 2(d) of the Enabling Clause of 1979 which allows for special treatment to be granted for least developed countries *in the context of any general or specific measures in favour of developing countries.* Thus, at least from this legal point of view, EBA initiative was bound to the existing GSP scheme. However, this fact does not impose any constraint on the European Union with regard to the scope and nature of LDC preferential trade regime.

It should also be noted that the European Union had to ensure the WTO compatibility of EBA by avoiding another constraint imposed by the Lome conventions. In the Cotonou Agreement, article 174(2)(b) of the Lome Convention imposing non-discrimination among ACP states was eliminated. Thus, the European Union can offer better market access to LDC ACP States without extending it to non-LDC ACP countries, as the above mentioned article would have required.

The EBA, like the existing GSP scheme, also allows for diagonal cumulation of origin between the LDCs and ASEAN, SAARC and the European Union. However, although EBA comes as an amendment to the European Union GSP scheme, several provisions are modified by EBA in the general GSP framework. First, unlike the European Union GSP scheme that is subject to renewal and revision, EBA has no time limitation. The European Commission will review the functioning of EBA in 2005, when amendments can be introduced, if necessary. Second, there are new provisions permitting the European Union to introduce safeguard measures when massive increases in imports of products originating in the LDCs arise in relation to their usual levels of production and export capacity. Specific safeguard measures apply especially with regard to sensitive products (bananas, sugar and rice), if imports of these products cause serious disruptions to the European Union mechanisms regulating these products (the CAP and ACP-EU protocols in particular).

b. Country and product coverage

The EBA extends duty-free and quota-free market access to the European Union for products in 919 tariff lines. All the products included in the initiative are agricultural products. Products such as fruits and vegetables, meat, beverages and dairy products, are now granted duty-free and quota-free access to the European Union market. Only three products have not been liberalized immediately: bananas, rice and sugar. Their phase-in periods for full market access are as follows:[8]

- Bananas – duties will gradually be eliminated, by a 20 per cent annual reduction, starting on 1 January 2002. All duties will be eliminated from 1 January 2006;

- Rice – full liberalization will be phased in between 1 September, 2006 and 1 September, 2009 by gradually reducing the full European Union tariff to zero. Duties will be reduced by 20 per cent on 1 September, 2006, by 50 per cent on 1 September, 2007 and by 80 per cent on 1 September, 2008. During the transition period, LDC rice can be exported duty-free to the European Union within the limits of a tariff quota. The initial quantities of this quota shall be based on best LDC export levels to the European Union in the recent past, plus a growth factor of 15 per cent. The quota will grow every year, from 2,517 tonnes (husked-rice equivalent) in 2001/2002 to 6,696 tonnes in 2008/2009 (September to August marketing year);

- Sugar – similar arrangements are provided for sugar. Full liberalization will be phased in between 1 July, 2006 and 1 July, 2009. During the transition period, LDC raw sugar can be exported duty-free to the European Union within the limits of a tariff quota, which will be increased from 74,185 tonnes (white-sugar equivalent) in 2001/2002 to 197,355 tons in 2008/2009. The provisions of the ACP-EC Sugar Protocol will remain valid.

c. Safeguard provisions

Whereas the EBA initiative clearly breaks new ground in granting full market access for the least developed countries, it also provides for mechanisms to avoid disruptions to the Community market.

Under the current European Union GSP scheme,[9] preferential tariff treatment may be temporarily withdrawn (in whole or in part) in the case of certain activities including slavery, forced labour,[10] export of goods made by prison labour, manifest shortcomings in customs controls on export or transit of drugs, failure to comply with international conventions on money laundering and fraud or failure to provide the cooperation required for the verification of certificates of origin.[11] Other circumstances qualifying for such a withdrawal are manifest cases of unfair trading practices on the part of a beneficiary country[12] or manifest infringements of the objectives of international conventions[13] concerning the conservation and management of fishery resources.[14]

An actual safeguard clause is provided for in article 28, stating that MFN duties on a product may be reintroduced where that product originating from a developing country is imported on terms which cause or threaten to cause serious difficulties to a Community producer of like or directly competing products. In examining the possible existence of such *serious difficulties* the Commission takes, among other things, the following factors into account: reduction in market share of Community producers, reduction in their production, increase in their stocks, closure of their production capacity, bankruptcies, low profitability, low rate of capacity utilization, employment, trade and prices.[15]

The EBA initiative modifies this scheme by:

a. Adding to the reasons for the possible temporary withdrawal of preferences massive increases in imports into the Community of products originating in LDCs in relation to their usual levels of production and export capacity.[16] This addition shall allow the Commission to "react swiftly when the Communities financial interests are at stake".[17]

b. Inserting a new paragraph in article 28 GSP allowing for the suspension of the preferences provided by this regulation for rice, sugar and bananas, "if imports of these products cause serious disturbance to the Community markets and their regulatory mechanisms".[18] Here, it becomes clear that while the European Union is generally ready to extend preferential market access to sensitive products, the Community also wants to provide for special safeguards regarding the three most sensitive ones.[19] The Commission announced[20] that whenever LDC imports of rice, sugar or bananas exceed, or are likely to exceed the previous years level by more than 25 per cent, then it will automatically examine whether the conditions for applying GSP safeguard measures are met.

Finally, it should be noted that while the preferences for developing (LDC and non- LDC) countries under the GSP scheme are subject to periodic renewal, the special arrangements provided for in the EBA initiative (modifying the GSP) with regard to market access for LDCs will be maintained for an unlimited period of time.

On the whole, it appears that the EBA modifications to the GSP safeguard scheme do not intend to frustrate market access but to provide for an emergency mechanism applicable in cases of severe market disturbances resulting from the newly granted LDC preferences.

(i) Differences between safeguard measures under the EBA / GSP and under the Cotonou Regime

A comparison of the EBA / GSP safeguard mechanism with the one set-up under the Cotonou Agreement reveals several differences.

While the safeguard clause under the (modified) GSP only requires that an imported product originating from one of the GSP beneficiaries "cause(s) or threaten(s) to cause *serious difficulties* to a Community producer of like or directly competing products", the corresponding regulation in the Cotonou Agreement calls for import "in such *increased quantities* and under such conditions as to cause or threaten to cause *serious injury* to its domestic producers of like or directly competitive products". The provision of the Cotonou Agreement further provides for "serious disturbances in any sector of the economy or difficulties which could bring about serious deterioration in the economic situation of the region" as alternative scenarios equally justifying the application of safeguard measures. Unlike the GSP safeguard scheme, the Cotonou rules do not expressly define the factors to be taken into account when examining "serious difficulties".

Whereas the GSP provides for the reintroduction of Common Customs Tariff duties as its safeguard measure, the Cotonou regulation merely speaks of "appropriate measures". Without further specifying these measures, the provision determines that they "shall be restricted to those which would least disturb trade between the Contracting Parties…and must not exceed the scope of what is strictly necessary to remedy the difficulties that have arisen."[21] Furthermore, "when applied, safeguard measures shall take into account the existing level of the ACP exports concerned to the Community and their potential for development."[22] The Cotonou regulation also states that "The Commu-

nity undertakes not to use other means for protection or to hamper structural development. The Community will refrain from using safeguard measures having the same effect."[23]

Unlike the GSP rules, the Cotonou Agreement does not provide for a temporary withdrawal of the preferential arrangements in the case of "criminal" activities or the infringement of certain rules.[24]

Overall, it seems that – with the exception of the special rules regarding sugar, rice and bananas – safeguard measures can be more easily invoked under the GSP than under the Cotonou regime. LDCs are more likely to lose their preferential treatment under the EBA initiative than under the Cotonou Agreement. Nevertheless, in both cases, the European Union appears to be committed to restrict safeguard measures to cases of actual serious market disruptions, which have seldom been made use of.

(ii) Differences in GSP/EBA and WTO safeguard provisions

The safeguard mechanism provided for in the (modified) GSP scheme also differs from the one laid down in the WTO Agreements.

While the GSP safeguard clause refers to serious difficulties caused by imports, WTO law requires imports of such increased quantities, absolute or relative to domestic production to cause serious injury. Article XIX GATT 94 further requires that such imports are the "result of unforeseen developments and of the effect of the obligations incurred by a contracting party under this Agreement...". Unlike the GSP rules stating that the existence of serious difficulties shall be examined by considering several factors such as reduction in market share or production, bankruptcies, employment etc, the WTO Safeguard Agreement defines serious injury as "a significant overall impairment in the position of a domestic industry".

The safeguard measure provided for in the GSP/EBA scheme consists of the suspension of preferences and the reintroduction of Common Tariff duties, while WTO law allows for tariff increases beyond bound rates and the imposition of quantitative restrictions.

While safeguard measures under the GSP scheme target only the country exporting the specific product, WTO safeguard measures must be applied on MFN basis.

The WTO Safeguard Agreement states that safeguard measures shall only be applied to the extent necessary to prevent or remedy serious injury and to facilitate adjustment. While this may be the European Union motivation guiding the GSP scheme, the actual rules do not contain any such provision.

While WTO safeguard measures are limited to a maximum initial period of four years (with the possibility of extension up to eight years – ten years for developing countries), the GSP scheme does not contain any time limit for its safeguard measures (it has to be kept in mind, however, that the GSP scheme itself is of limited duration and subject to periodic renewal).

In analyzing those differences, one should keep in mind however, that most of them relate to the GSP's special status as a *preferential* scheme, calling for special rules.

While the EBA initiative strives to ensure a balance between substantially increased market access for LDCs and the prevention of potential damage to Community producers, the actual impact of the EBA safeguard measures on imports from least developed countries remains to be seen. The Commission announced[25] that it will keep the implementation of the EBA initiative under review in order to detect and immediately address potential shortcomings. The extent to which LDCs are actually benefiting from the trade liberalization introduced by this initiative will be examined, as will the adequacy of its safeguard mechanisms. A Commission report to the Council addressing these issues is scheduled for 2005. In the light of the fact that the European Union has rarely made use of safeguard measures in the past[26] and that the Community appears to be committed to facilitate LDC market access, it seems likely that resort to safeguard measures will be limited to cases of significant damage suffered by European Union producers. Future developments will, therefore, most likely depend on whether duty and quota free LDC market access causes serious disruptions to the Community market.

d. EBA and the CAP

One major concern during the adoption of EBA by the European Union was related to the impact of EBA on the European Union's Common Agricultural Policy (CAP). Before examining this question a brief overview of the CAP will be given in order to understand the likely impact of EBA.

The CAP represents a striking example of the second best policy with costly side-effects. In the 1970s the CAP expenditure represented by far the biggest expense for the European Union budget, with more than 70 per cent of total spending accounted for by agriculture in 1979 (Rieger, 1996). The historical underpinnings of the CAP, outlined in article 39 of the 1957 Treaty of Rome, reflect the post-war concern of recapturing food security across Europe.

As a result, the CAP has made use of an impressive array of policy measures aimed at ensuring appropriate levels for domestic agricultural production and income for European Union farmers. Domestically, the CAP introduced various direct and indirect support measures, while on the foreign trade side, it is based on tariffs, quotas, variable import levies to reduce imports triggered by high domestic prices and export subsidies to reduce domestic production surpluses. The CAP comprises a series of general and sectoral arrangements for almost all agricultural products: arable crops, potato starch, cereals, olive oil, grain legumes, flax, hemp, silk worms, bananas, dried grapes, tobacco, seeds, hops, rice, meat and meat products, milk and milk products, wine, etc.[27]

However, over time the CAP has not only managed to maintain food security and welfare levels across Europe but has also become a major burden on the European Union budget. Hence CAP adjustments and reforms became increasingly necessary. The risk of new cereal surpluses and ever growing "butter and beef mountains" and "wine lakes" necessitated a change to the system of support for producers. In order to balance the cereals market, the European Union decided to bring Community prices into line with those of the world market.

Two major factors called for a reform of the CAP: *domestic frictions* among European Union member States about budgetary issues and *international frictions* between the European Union and third countries on the protectionist and support measures that affect agricultural world markets.

Stemming more from external pressure, a notable reform initiative was introduced in 1992. The MacSharry Reform of 1992 represented an important step in reducing the gap between European Union and world market prices in agricultural products. The 1992 reform aimed at reducing support

prices, increasing compensatory payment to farmers and reducing domestic production, through set-aside arrangements and other measures. While the MacSharry Reform was more related to external pressures arising from the need to reach an agreement on agriculture in the GATT Uruguay Round (Josling and Tagermann, 1992, Helmer et al., 1994), concerns over budgetary costs had been the traditional driving force behind changes to the European Union's CAP. There is an expectation the budgetary constraint will reemerge again, particularly in light of the impending accession of a number of Central and Eastern European countries (Buckwell et al., 1995).

In the past, several budgetary crises arose for certain products (grains, milk and sugar) as the CAP budget was too small to ensure attractive running (Weyerbrock, 1998).[28] Such budgetary problems also became an issue during the adoption of EBA. It was argued by many domestic producer groups that EBA, by eliminating tariffs and quotas on products that are subject to CAP provisions, will increase imports to such an extent that it will actually make the CAP support measures ineffective (Agra Europe, 2001). Despite these concerns, there are several factors suggesting that the impact of EBA on the CAP will be, if not minimal, at least manageable.[29] The main variables that should be taken into account when assessing the impact of EBA on the CAP concern the evolution of European Union domestic production and the impact on the European Union CAP budget.

The computable general equilibrium (CGE) simulations in chapter III take into account several domestic and trade policy instruments related to the functioning of CAP. The database used to generate the results includes agricultural import tariffs and non-tariff equivalents, production subsidies and export subsidies.[30] Even though certain other CAP support measures are not modelled explicitly, the CGE model captures most of the effects of the CAP functioning.

The implications of the CAP budget arising from EBA are of a more complex nature, as was evidenced by the European Union impact study (EC, 2000a). Considering the exports from LDCs, the major sectors were a significant increase in LDC exports is expected to happen are the same sectors as above (sugar, processed rice, other food products, and to a lesser extent, fruits and vegetables, cereals). This estimated increase in exports is in line with the European Union assessment of the impact of EBA on the European Union its agricultural support budget, predicting a €1 billion increase in support for sugar only (EC, 2000b). However, if taking into account the indirect protection on vegetables, fruits, meat and diary products as well as other food products introduced by stringent sanitary and phyto-sanitary standards that LDCs exports must meet before entering the European Union, the increase in LDC exports for these products should be smaller than the estimates.[31]

It must be stressed that the impact of EBA on the European Union agricultural sector should also take into account the complexity of the CAP and the potential interactions between European Union export subsidies, supply constraints in LDCs and cumulation of origin. As long as CAP policies maintain a price differential between European Union domestic prices and world prices, even after an initial increase in exports, LDC producers will have strong incentive to further increase exports to the European Union. However, for many items, sharp increases in exports will be precluded by supply constraints that are difficult to overcome, by only relying on domestic sources. As a result, LDCs would have to import the necessary intermediary products to expand their exports. Given the fact that EBA allows for cumulation between LDCs and the European Union, even with relatively low value added in LDCs, there is a strong incentive for some European Union intermediate agricultural products to be further processed in LDC countries and then re-exported to the European Union. By such an export/import cycle, the European Union exporter of intermediate goods receives the export subsidy and the LDC exporter receives more than the world price, in the European Union market.

C. Japan

1. Trade provisions

Japan's GSP scheme entered into force on 1 August 1971 and was authorized under a renewable multiannual scheme granting preferences for an initial period of ten years. The GSP scheme was renewed twice, once in 1981 for ten years and once in 1991 until 31 March 2001. The Japanese scheme comprises a positive list of agricultural items that are eligible for GSP, and a negative list of industrial goods (including textiles) that are ineligible. Import ceilings apply to some industrial products and may lead to a reinstatement of MFN tariff rates. Imported products posing no threat or injury to Japan's

Table II.8. LDC exports to Japan receiving better than MFN tariffs, 1999

HS	Description	World exports ($000)	LDC exports ($000)	LDC Share (%)	MFN LDC margin[a]
080300	Bananas	550 854	8	0.00	16.00
090121	Coffee	19 562	201	1.03	12.00
160414	Fish products	117 375	7 425	6.33	9.60
190590	Cereal, flour, starch/milk	119 737	5	0.00	8.86
160510	Fish products	139 085	1 777	1.28	8.07
152190	Animal/veg fats &	3 669	2 105	57.37	7.53
160590	Fish products	346 726	675	0.19	7.52
220890	Beverages, spirits and vinegar	106 853	11	0.01	7.19
090230	Tea	40 370	8	0.02	6.00
160520	Fish products	303 080	45	0.01	5.05
160420	Fish products	156 217	7	0.00	4.93
200819	Preparation of vegetable, fruit, nuts	37 559	5	0.01	4.32
220300	Beer	48 225	19	0.04	3.80
030759	Octopus	395 646	111 206	28.11	3.50
090920	Seeds of coriander	5 184	3	0.06	3.00
121190	Plants and parts of plants	74 956	1 783	2.38	2.86
140490	Vegetable materials; vegetable products	34 469	64	0.19	2.57
091010	Ginger	74 011	41	0.06	2.50
210690	Miscellaneous edible preparations	510 722	73	0.01	2.43
030799	Fish & crustacean	386 889	2 744	0.71	2.00
090420	Spices	28 404	206	0.73	2.00
030791	Aquatic invertebrates	520 122	159	0.03	1.50
121220	Algae	178 940	132	0.07	1.27
080290	Edible fruit and nuts	28 092	96	0.34	1.25
030623	Shrimps	29 970	9	0.03	1.25
210390	Miscellaneous edible preparations	112 544	54	0.05	1.20
090700	Cloves	1 068	894	83.71	1.20
091030	Turmeric	4 847	81	1.67	1.20
090240	Tea	108 713	613	0.56	1.00
070951	Mushrooms and truffles	220 546	83	0.04	1.00
051000	Products of animal origin	28 722	49	0.17	1.00
030110	Ornamental fish	35 577	284	0.80	0.85
230990	Animal feeding	112 014	15	0.01	0.60
051199	Products of animal origin	60 265	3	0.00	0.50
051191	Egg yolks	24 014	24	0.10	0.43

Source: UNCTAD.

a Aggregated from both GSP-covered and non-covered products. For GSP-covered products the LDCs have duty-free and quota-free market access. Tariff rates refer to year 2000.

domestic industry continue to receive GSP, even if ceilings are exceeded. Unlike developing countries' exports, import ceilings do not apply to LDC exports.[32]

Table II.9. LDC exports to Japan receiving better-than-GSP treatment for developing countries, 1999

HS	Description	LDC exports ($'000)	LDC share (%)	LDC tariff	GSP-developing margin[a]
030623	Shrimps and prawns	9	0.03	0.75	1.00
030759	Octopus	111 206	28.11	5.00	2.50
030791	Fish & crustacean	159	0.03	4.07	1.50
030799	Fish & crustacean	2 744	0.71	5.78	1.95
080290	Nuts	96	0.34	4.13	0.75
090230	Tea	8	0.02	8.50	6.00
090240	Tea	613	0.56	5.67	0.83
121220	Algae	132	0.07	8.18	0.73
160420	Fish products	7	0.00	4.40	4.30
160590	Crustaceans products	675	0.19	1.98	5.97
190590	Preparation of cereal, flour, starch/milk	5	0.00	10.87	5.72
200819	Nuts	5	0.01	6.60	3.54
210390	Miscellaneous edible preparations	54	0.05	8.43	1.00
210690	Miscellaneous edible preparations	73	0.01	17.60	1.63
220890	Beverages, spirits and vinegar	11	0.01	4.26	1.70

Source: UNCTAD.
a Tariff rates refer to year 2000.

Japan has adopted a graduation policy (as have many other preference-giving countries), whereby a particular country can lose its GSP benefits for a specific product when the beneficiary is viewed as internationally competitive. The GSP preferences can be withdrawn, suspended, or limited vis-à-vis countries and products to which GSP treatment is granted.

Similar to the European Union's GSP, the Japanese programme provides for duty-free as well as reduced-duty access under GSP. Reduced duties apply to both agricultural and industrial items.

In line with the WTO initiatives, Japan has improved LDC market access. As of 1 April, 2001, Japan increased the number of tariff lines enjoying duty-free and quota-free access for LDCs, by an additional 350 items, which have formerly been exceptions to GSP system (METI, 2000). Noticeably, all the textile and clothing products from LDCs will be duty free and quota free. By this measure, about 99 per cent of industrial products from LDCs will have duty-free and quota-free access from 1 April, 2001 (WTO, 2000b). Although only 42 of the 49 LDCs benefit from this system, the remaining seven will also be included.[33]

2. Trade patterns

The special treatment for the 42 LDCs started on 1 April, 1980. Despite these favourable trade measures, imports from LDCs accounted for about 1.3 per cent of total Japanese imports receiving GSP treatment in 1999 and for 1 per cent in 2000 (UNCTAD, 2001).

In terms of product coverage in 2000, out of 541 HS6 LDC exports, 250 HS6-level exports from LDCs did not receive any preference with regard to the MFN regime and 371 products did not receive any preference with regard to the GSP regime for developing countries. Also for the same period, 57.1 per cent of LDC products exported to Japan did not receive any preference. Out of 291 LDC HS6-level exports receiving better-than MFN treatment, 35 faced positive tariffs (table II.8), all others entered duty-free. Similarly, table II.9 presents LDC exports facing non-zero better-than-GSP tariffs in the Japanese market.

D. The United States

The United States continues to grant preferential market access to developing and least developed countries through several schemes (see table II.10), including through the Generalized System of Preferences and the Trade and Development Act of 2000 -- including African Growth and Opportunity Act (AGOA) and Caribbean Basin Trade Partnership Act (CBTPA).

1. Trade provisions

a. GSP

The United States GSP programme was originally authorized by title V of the 1974 Trade Act and became operational on January 1, 1976. The scheme provides for duty-free entry for a wide range of designated products from eligible developing countries and territories. In addition to the preferential access granted to developing countries, special treatment is granted for products originating in least developed countries. In 1997, the LDC market access was significantly expanded when more than 1,700 additional LDC products were granted duty-free treatment. However, the United States GSP scheme grants LDC status to only 35 countries.[34] When the programme was reintroduced in 1984, new "country practice" eligibility criteria were added, including requirements that beneficiary countries provide adequate and effective protection of intellectual property rights and take steps to observe internationally recognized worker rights. Furthermore, a GNP per capita eligibility limit was enacted, excluding countries that exceed the ceiling.

As is the case with most GSP schemes, not all products eligible to enter the United States under GSP actually enter duty-free due to several programme provisions that limit GSP preferential market access. Under the United States GSP scheme, an eligible product may be denied duty-free status when an LDC exporter is deemed competitive in the United States market (GAO, 1994).[35] Products can also be denied duty-free entry because a country exceeds limits placed on import levels ("competitive need limits").[36] These exclusions are based on the assumption that a developing country's exports have become competitive. However, external factors that may have little to do with the competitiveness of a particular beneficiary country's industry can affect United States import levels during one year. Yet, according to United States General Accounting Office, in many cases, a loss of GSP status due to a competitive need limit exclusion was immediately followed by a loss of import market share (GAO, 1994). Finally, duty-free treatment can be denied because products fail to meet beneficiary country domestic content or direct shipping requirements ("administrative exclusions"). In addition to product

Table II.10. United States preferential trade schemes

Trading arrangement	Main characteristics	Beneficiary countries
Generalized System of Preferences (GSP)	Duty-free access for many exports, but several significant product areas are excluded and numerous provisions allow for the removal of specific products or countries	Most developing and transition economies; among the exceptions are China, most OPEC members, some Asian newly-industrialized economies and Nicaragua (a CBI country)
Special trade preferences	Duty-free access for almost all exports other than oil, certain textiles and apparel, most leather products and a few other exceptions	**African Growth Opportunity Act (AGOA):** most African countries, both developing and LDCs **Caribbean Basin Initiative (CBI)**: most Central American and Caribbean countries **Andean Trade Preferences Act**: Bolivia, Colombia, Ecuador, and Peru.

Source: UNCTAD Handbook on the GSP Scheme of the United States.

exclusion, countries can be graduated, or removed, from the programme.

The GSP eligibility criteria for the United States GSP scheme cover a multitude of aspects that are not always directly related to trade and development and that often go beyond status quo at multilateral level.[37] Yet, in certain areas that are also covered at the multilateral level, GSP eligibility criteria adds further incentive for LDCs to comply with international standards. Thus, with regard to the spillover effect of such an arrangement on the capacity of developing countries to upgrade their domestic regulatory regimes to internationally accepted standards, GSP schemes can be compared with a North-South RTA such as NAFTA.

The United States GSP conditionality contains certain provisions whose rationale and benefits are less clear. Although the WTO Enabling Clause clearly states that developed countries granting GSP access to a developing countries should not expect reciprocity. The United States GSP scheme introduces several conditionality criteria that may be interpreted as indirect reciprocity. For instance, Title V of the Trade Act of 1974 that originally introduced the United States GSP scheme states in section 502 (c) that a developing country may become ineligible if it grants preferential treatment to another developed country deemed to have a potential negative effect on the United States trade. This condition may potentially eliminate from the United States GSP scheme any developing country engaged in North-South trade with a developed country, other than the United States.

b. Caribbean Basin Trade Partnership Act (CBTPA)

The CBTPA expands on the current Caribbean Initiative (CBI) by allowing duty-free and quota-free treatment for imports of certain apparel from the Caribbean region and by extending NAFTA-equivalent tariff treatment to a number of other products previously excluded from the CBI programme.[38]

c. AGOA

African Growth and Opportunity Act (AGOA) is part of the Trade and Development Act of 2000, instituting new trade and investment policies for sub-Saharan Africa.[39] Section 112(a) of the AGOA provides that eligible textile and apparel articles imported directly into the customs territory of the United States from a beneficiary sub-Saharan African country shall enter free of duty and free of quantitative limitations.[40] Section 112(b)(3)(B) of the AGOA provides special rules for certain apparel articles imported from "lesser developed beneficiary sub-Saharan African countries".[41] Wine, footwear, fruit and juices, leather products are some of the exports benefiting from AGOA. Under specific conditions, AGOA also entitles African clothing to enter the United States duty-free.

AGOA extends GSP to a number of eligible Sub-Saharan African countries until 30 September 2008 – seven years longer than for the rest of the world. Thirty five countries have so far been designated as AGOA beneficiaries.[42] African countries are eligible to become AGOA beneficiaries, provided they work toward strengthening market based economies, the rule of law and political pluralism, elimination of barriers to United States trade and investment, protection of intellectual property, efforts to combat corruption, policies to reduce poverty, increasing availability of health care and educational opportunities, protection of human rights and worker rights and elimination of certain child labour practices. Sub-Saharan African beneficiary countries are also exempted from competitive need limitations which cap the GSP benefits available to beneficiaries in other regions (USTR, 2000). AGOA allows duty-free treatment for any product, unless considered sensitive when imported from

African countries. In December 2000, the duty-free product coverage under AGOA was extended for more than 1,800 tariff lines, in addition to the standard GSP list of approximately 4,600 products available to non-AGOA GSP beneficiary countries. The additional GSP line items include previously excluded products such as footwear, luggage, handbags, watches and flatware.

Special AGOA provisions permit less developed African countries to ship duty-free (but not quota free) to the United States apparel manufactured from fabric produced anywhere in the world. However, countries must first meet the requirement of an effective visa system and enforcement mechanism before becoming eligible. Until April 2001, only three AGOA beneficiaries (Kenya, Lesotho and Madagascar) managed to fulfil all these requirements.[43]

Table II.11. LDC exports facing non-preferential United States tariff peaks, 1999

HS 6	Description	LDC exports	LDC share	Tariff[a]
610333	Jackets and blazers	126	14.19	28.9
610433	Jackets and blazers	567	3.14	28.9
611212	Track suits	1 423	4.95	28.9
611130	Babies' garments	8 559	4.37	28.62
620312	Suits	74	0.11	28.00
611231	Men's swimwear	1 184	26.73	26.60
640419	Footwear	21	0	26.39
611430	Knitted apparel	2 076	1.42	25.73
611241	Women's swimwear	753	0.26	25.50
620333	Jackets and blazers	327	0.26	25.00
610620	Knitted apparel	14 918	3.43	24.35
621230	Corselets	118	0.75	24.10
610520	Knitted shirts	28 136	9.72	24.00
620930	Babies' garments	5 537	8.86	23.43
610343	Knitted apparel	20 933	6.83	22.3
621220	Girdles	99	0.16	22.00
640299	Footwear	5	0	21.56
640420	Footwear	1	0	20.83
611219	Track suits	1	0.18	20.80
610510	Knitted apparel	87 219	5.28	20.20

Source: UNCTAD.
a Aggregated from both GSP-covered and non-covered products. Tariff rates refer to year 2000.

Table II.12. LDC exports to the United States receiving the highest preferential MFN margin, 1999

HS 6	Description	LDC exports ($000)	LDC share (%)	LDC rate[a]	MFN preferential margin[a]
120220	Oil seeds	418	1.00	43.93	87.87
240120	Tobacco	55 926	13.69	46.67	31.11
240110	Tobacco	2 988	0.84	38.89	19.44
220290	Beverages	10	0.01	0	17.33
701399	Glass and glassware	1 275	0.56	0	15.53
691110	Tableware and kitchenware	2 471	0.76	0	13.71
854011	Electrical machinery	2	0	0	12.86
701391	Glass and glassware	9	0	0	12.63
240130	Tobacco	457	2.46	26.92	11.97
160414	Fish, caviar	99	0.02	0	11.73
100630	Rice	215	0.12	0	11.20
071080	Vegetables	4	0	0	10.80
701321	Glass and glassware	12	0.01	0	10.33
670290	Preparation feathers and flower	33	0.01	0	10.23
200110	Cucumbers and gherkins	10	0.04	0	9.60
650510	Hair-nets	294	3.38	0	9.60
200819	Preparation of vegetable, fruit and nuts	117	0.22	0	9.54
691200	Ceramic products	56	0.01	0	8.98
040520	Dairy spreads	4	0.03	0	8.80
401519	Gloves	19	0.01	0	8.50

Source: UNCTAD.
a Aggregated from both GSP-covered and non-covered products. Tariff rates refer to year 2000.

2. Trade patterns

Overall, imports from LDCs account for a small share of total United States imports. For instance in 2000, the share of LDC imports to the United States was only 1.25 per cent. Although the United States GSP scheme allows for more preferential market access for LDCs, their exports still face a significant number of trade barriers. Tables II.11 – II.14 show the patterns of protection facing LDC exports.[44] In 2000, more than 45 per cent of total LDC exports were eligible for better-than-MFN access to the United States market, with preferential margins ranging from 0.2 per cent to more than 80 per

Table II.13. LDC exports to the United States receiving better-than-GSP treatment for developing countries, 1999

HS 6	Description	LDC exports ($000)	LDC share (%)	LDC rate	GSP margin[a]
240120	Tobacco	55 926	13.69	46.67	38.89
610520	Knitted apparel	28 136	9.72	24.00	24.00
610343	Knitted apparel	20 933	6.83	22.30	22.30
610620	Knitted apparel	14 918	3.43	24.35	24.35
611130	Knitted apparel	8 559	4.37	28.62	28.62
620930	Babies' garments	5 537	8.86	23.43	23.43
240110	Tobacco	2 988	0.84	38.89	30.56
611430	Knitted apparel	2 076	1.42	25.73	25.73
611212	Track suits	1 423	4.95	28.90	28.90
611231	Men's swimwear	1 184	26.73	26.60	26.60
611241	Women's swimwear	753	0.26	25.50	25.50
610433	Knitted apparel	567	3.14	28.90	28.90
240130	Tobacco refuse	457	2.46	26.92	26.92
120220	Oil seeds	418	1.00	43.93	43.93
620333	Not knitted apparel	327	0.26	25.00	25.00
610333	Knitted apparel	126	14.19	28.90	28.90
621230	Corselets	118	0.75	24.10	24.10
621220	Girdles	99	0.16	22.00	22.00
620312	Suits	74	0.11	28.00	28.00
640419	Footwear	21	0	26.39	26.39

Source: UNCTAD.
a Tariff rates refer to year 2000.

cent, relative to the MFN tariff. Out of total LDC exports, about 50 per cent of HS6-level products were eligible for duty-free access. However, if petroleum products are excluded, only 12 per cent are eligible for duty free access. In terms of GSP product coverage, 388 out of 934 HS6 LDC exports enjoyed a preferential margin vis-à-vis the MFN applied tariff and more than 100 LDC exports (at HS6 level) receive preferences vis-à-vis the GSP tariff for developing countries. Out of the HS tariff lines with a better-than- MFN treatment for LDCs only 54 items face positive tariffs, all the others are duty-free. However, not all LDC exports that are eligible for preferences actually receive preferential treatment. Once this is taken into account, actual figures are somewhat lower. For instance, the United States GSP utilization ratio was 76.5 per cent in 1998 for LDC eligible exports.

LDC exports to the United States are dominated by textile products originating from: Bangladesh, Cambodia and Haiti. Other major exports are oil products from Angola and Congo. Apart from oil products, out of the top 20 LDC exports at HS6 level to the United States, only one enjoyed preferential margin (tobacco). The others did not have preferential margin compared to the MFN ad valorem tariff (table II.14). In terms of geographical and sectoral distribution, as evident from table II.14, Asian LDCs are major textile and clothing exporters, while African LDCs are major mineral products exporters.

Table II.14. Top 20 HS6 level LDC exports to the United States, by LDC exporter, 1999

HS 6	Description	Value ($000)	Country	Preferential margin (%)[a]
270900	Petroleum oils and oils obtained from bituminous minerals, crude	2 488 009	Angola	n/a
270900	Petroleum oils and oils obtained from bituminous minerals, crude	337 349	Congo	n/a
620520	Apparel	193 570	Bangladesh	0
620342	Apparel	184 549	Bangladesh	0
650590	Headgear and parts thereof	165 258	Bangladesh	0
620342	Apparel	155 759	Cambodia	0
620462	Apparel	152 775	Bangladesh	0
620630	Apparel	127 913	Bangladesh	0
610910	Knitted apparel	125 935	Haiti	0
260600	Aluminium ores and concentrates	116 814	Guinea	0
030613	Shrimps and prawns	115 046	Bangladesh	0
270900	Petroleum oils and oils obtained from bituminous minerals, crude	109 067	Zaire	n/a
611020	Knitted apparel	106 662	Cambodia	0
620462	Apparel	85 251	Cambodia	0
611030	Knitted apparel	80 848	Bangladesh	0
611020	Knitted apparel	77 042	Bangladesh	0
710231	Diamonds	73 949	Zaire	0
610821	Briefs and panties	56 182	Bangladesh	0
620193	Apparel	55 669	Bangladesh	0
240120	Tobacco	52 535	Malawi	31.11

Source: UNCTAD.
a Tariff rates refer to year 2000.

E. Conclusions

This section reviewed the efforts of the four Quad members to provide non-reciprocal preferences to developing countries, in particular to LDCs. Despite these countries positive efforts over the past 30 years the current degree of access into their markets is still some distance away from full quota and duty-free access. Furthermore, even in cases where market access for developing countries is generous, the impact could be quite low owing to eligibility, conditionality or procedural constraints. Indeed, as chapter I indicated the trade performance of LDCs has been poor and declining in recent years relative to other countries. One reason for this could, as the evidence presented here suggests, that perhaps the degree of market access they have been offered is not sufficient to strengthen the links between trade and development.

NOTES

[1] The BPT was eliminated with the introduction of the new Customs Tariff in 1998. To alleviate or minimize the effects of terminating the BPT, a Remission Order Respecting Imports of Goods Originating in Commonwealth Developing Countries has been introduced to maintain rates equivalent to BPT rates on 158 items until completion of the MFN rate reductions as a result of the Uruguay Round. These items consist of food products, wool and certain clothing articles (WTO, 1998).

[2] A complete list and description of the newly-added products is available from the Canadian Custom Tariff (www.ccra-adcr.gc.ca).

[3] Based on data available from UNCTAD, GSP database.

[4] Moreover, some LDC exports are facing less than favourable market access to Canada, compared to NAFTA access for American and Mexican products.

[5] This includes Central and Eastern European countries in the context of Europe Agreements, and neighboring countries in the Mediterranean basin under the so-called Euro-Mediterranean Agreements. The European Union also has free trade agreements with South Africa, Mexico, Chile, MERCOSUR and Canada.

[6] Further details on the GSP scheme of the European Union and other Quad countries can be found in the UNCTAD Handbooks on the GSP Schemes, available online at http://www.unctad.org/gsp/.

[7] The four categories are as follows: 1) *very sensitive products*, for which the MFN preferential margin is 15 per cent; 2) *sensitive products*, for which the MFN preferential margin is 30 per cent; 3) *semi-sensitive products*, for which the MFN preferential margin is 65 per cent; 4) *non-sensitive products*, which enter the European Union market duty-free.

[8] The information provided below is based on data available from the European Commission, at http://www.europa.en.int/comm.

[9] Based on Council Regulation No 2820/98 of 21 December 1998.

[10] A temporary withdrawal on this ground has been exercised in 1997, when Myanmar was temporarily excluded from GSP treatment for alleged forced labour practices. Council Regulation 552/97 of 24 Mars 1997. OJ L 85, 27 Mars 1997.

[11] Article 22:1 (a)-(d) of the Council Regulation No 2820/98 of 21 December 1998.

[12] Article 22:1 (e) of the Regulation states that the withdrawal shall be in full compliance with the WTO rules.

[12] Article 22:1 (f) explicitly lists NAFO, NEAFC, ICCAT and NASCO.

[14] Articles 22:1 (e) and (f) of Council Regulation No 2820/98.

[15] Article 28:3 states that the Commission will do so "*where the information is available*".

[16] Article 1:4 of Council Regulation No 416/2001 of 28 February 2001.

[17] Council Regulation No 416/2001 of 28 February 2001.

[18] Article 1:5 of Council Regulation No 416/2001 of 28 February 2001.

[19] Article 1:5 of Council Regulation No 416/2001 refers to the "*particular sensitivity*" of these products.

[20] Statement of the European Union Commission of 1 Mars 2001.

[21] Article 8:3, Annex V of the ACP – EU Partnership Agreement.

[22] Article 8:4, Annex V of the ACP – EU Partnership Agreement.

[23] Article 8:2, Annex V of the ACP – EU Partnership Agreement.

[24] It has to be noted however, that such a temporary withdrawal clause does not really constitute a *safeguard* measure.

[25] Commission statement on the Everything But Arms Initiative of 1 March 2001.

[26] Not a single safeguard measure has been adopted under the WTO Agreements (WTO, 2001a).

[27] For a general overview of the CAP, see Köster and Tangermann (1990). More recent information on the European Union agricultural policies may be found on the Europa server (http://europa.eu.int) under the DG-Agriculture website. Legal provisions related to CAP are available online in the Eur-Lex database.

[28] In constrast, Matthews (1996) argues that there will be little pressure from enlargement for any further budgetary reform of Europe's agricultural policy.

[29] An impact study conducted by the European Commission on the effects of EBA on several agricultural markets shows that, depending upon the preliminary assumptions used, the extra-budgetary costs are be-

tween 1.5 to 2.6 billion Euro (EC 2000). This would represent an increase by approximately 3 to 7 per cent of the 1999 CAP budget.

30 For a general computable equilibrium approach that models explicitly other CAP policies and their recent reforms, see for instance Weyerbrock (1998).

31 See for instance the example of shirmps from Bangladesh provided in the following chapter.

32 Further details about the GSP scheme of Japan can be found in UNCTAD Handbook on the GSP Scheme of Japan, available online at http://www.unctad.org/gsp/japan/.

33 Before 1 April 2001, Japan did not provide the special LDC treatment under the GSP to Zambia, Democratic Republic of the Congo, Kiribati, Tuvalu, Comoros, and Djibouti (METI, 2000).

34 Several UN-designated LDCs (Afghanistan, Eritreea, Liberia, Mauritania, Lao PDR, Maldives, Myanmar, Solomon Islands, Sudan) are not granted LDC enhanced market access under the United States GSP scheme.

35 This measure is called permanent "product graduation". Once a product 'graduates' from the GSP scheme, a 3-year rule applies, thus prohibiting the reintroduction of that product in the GSP for a period of three years.

36 Competitive need limit exclusions are automatically triggered when the value or share of imports from a country exceed an annual ceiling. These exclusions are based on the assumption that a developing country's exports have become competitive. LDC exports are not subject to competitive needs limitations.

37 The United States GSP eligibility criteria include for instance elements of the United States extraterritorial doctrine on international law with regard to competition policy, IPR, expropriation, communist and terrorist activities, etc. Moreover, unlike trade under the MFN regime, the applicability of such discretionary conditionality cannot be challenged under the WTO disputes settlement procedures.

38 The 24 countries included in the CBTPA are Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Costa Rica, Dominica, Dominican Republic, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Montserrat, Netherlands Antilles, Nicaragua, Panama, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Trinidad and Tobago, and British Virgin Islands.

39 The Trade and Development Act of 2000 also expands the trade preferences granted to the Caribbean countries and renew the United States GSP scheme.

40 It is notable that the list of beneficiary countries does not include all African LDCs. For instance, Angola, Burkina Faso, Burundi, Comoros and Togo are not included in the list of "lesser developed sub-Saharan African countries" annexed to AGOA.

41 Section 112(c) of the AGOA introduces strict conditionalities making the elimination of existing quotas on textile and apparel articles contingent, among other things, upon the adoption by African countries concerned of an effective visa system to prevent unlawful transshipments.

42 Swaziland was designated as the 35th AGOA eligible country in January 2001.

43 Less-developed sub-Saharan African countries are defined as those with a per capita gross national product of less than $1,500 a year in 1998, as measured by the World Bank. These countries (all sub-Saharan countries except Botswana, Equatorial Guinea, Gabon, Mauritius, Namibia, Seychelles and South Africa) may export apparel wholly assembled in their countries, regardless of the origin of the fabric to the United States. This provision is in effect until 30 September 2004. More details on AGOA can be found at http://www.agoa.gov.

44 These tables take into account the patterns of protection only for products exported by LDC in 1999 to the Quad markets.

45 For a detailed analysis of the importance of rules of origin in international trade, see for instance (UNCTAD, 1998b).

III. THE ECONOMICS OF NON-RECIPROCAL TRADING AGREEMENTS

A. Some basic definitions

At present, about 60 per cent of total world trade occurs on a non-preferential basis (see, Grether and Olarreaga, 1999). Trade is non-preferential when each country agrees to import a given good from all its trading partners under the same conditions (the most favoured nation principle). This means that countries cannot discriminate among their trading partners because the imports originating from all partners would be subject to the tariff accorded to the most favoured nation (e.g., the country whose export of a given good is subject to the lowest tariff). Existing MFN tariffs are the result of bargaining: tariff "concessions" by each country are made under the expectation of an "equivalent" concession by a partner country. Multilateral negotiations are governed by the principle of reciprocity.

The vast majority of current preferential trade is associated with Preferential Trade Agreements (PTAs) occurring at the regional level. The share of preferential trade in Western Europe (taken as a whole) is about 70 per cent, in Asia (for the whole region) it is below 4 per cent. Most Preferential Trade Agreements are signed by neighbouring countries and apply non-discrimination among member countries. Again, the principle of reciprocity holds within regional preferential trading arrangements. The creation of PTAs normally consists of reciprocal reductions in trade barriers by member countries. Free trade areas (FTA) or customs unions (CU) are examples of such agreements.

Though reciprocal concessions are prevalent in world trade, not all trade arrangements include the reciprocity principle. Under GATT rules, countries are free to liberalize unilaterally.

During the 1990s, several developing countries liberalized their trade without expecting these liberalization initiatives to be reciprocated by partner countries. Also, not all Preferential Trade Agreements are governed by the principle of reciprocity. A number of countries agreed to reduce barriers with some trading partners, without expecting reciprocal improvements in market access. The most significant example of non-reciprocal, preferential trade arrangements is found in the Generalized System of Preferences (GSP). The GSP consists of a series of unilateral concessions made by developed countries in order to facilitate market access by developing countries. Compared with most preferential trade arrangements, GSP arrangements do not follow a clear-cut geographical pattern. GSP arrangements also differ from the PTAs between developed and developing countries, that were in place before the introduction of the GSP. Those arrangements were in most cases the heritage of former colonial ties and the preferential treatment was reciprocal. The current share of GSP trade of total preferential trade is around 3 per cent, and has declined significantly in the last decade as a result of "preference erosion" following the completion of the Uruguay Round and the expansion of the share of preferential trade occurring within regional blocs.

The everything but arms (EBA) proposal is an example of a non-reciprocal, preferential trade arrangement, as those in the GSP. Compared with current GSP arrangements, EBA is distinguished by a higher degree of market access. Whereas GSP arrangements normally provide, for each sector, a different treatment of "beneficiary" countries. Under EBA all LDCs would be equally given duty-free, quota-free access to markets of European Union "donor" countries in all sectors but arms.[1]

B. Theory

What are the effects of preferential trade arrangements? Does it matter if those arrangements are non-reciprocal? Why do certain types of trade arrangements easily take place while others are more seldom observed? Which kind of information is needed to assess the impact of non-reciprocal, preferential trade arrangements on donor, recipient and third countries? The theory of international trade can help answer such questions.

1. Partial equilibrium analysis, perfectly substitute goods

The easiest way to discern the effects of preferential trade arrangements is to refer to a partial equilibrium three-countries, one-good framework.[2] At least three countries are needed since two countries would be engaged in the preferential arrangement, and the rest of the world. For simplicity, assume that these three countries are trading a homogenous good that is a perfect substitute.

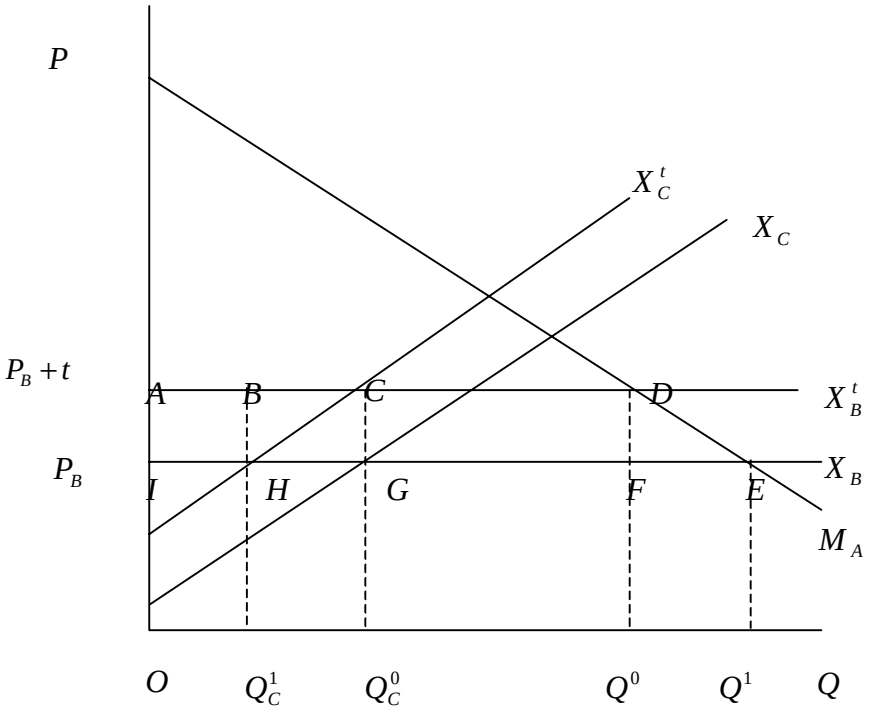
Since goods are perfect substitutes, all countries sell the good at the same world market price. The domestic price of the good in one country, however, can differ from that in the world market price because of trade taxes or quotas. In this paper only the case of trade taxes is considered.

The three countries are denoted by A, B and C. Countries A and B are assumed to sign a non-reciprocal, preferential trade arrangement in which A is the donor and B is the beneficiary

country. Country C is the rest of the world. Production, in all countries, occurs in perfectly competitive firms, and returns to scale are non-increasing. The demand curve for country A is assumed to be downward sloping, the supply curve is non-negatively sloped. It follows that import demand curve can be drawn as (M_A) is negatively sloped as in figure III.1. Country A can import a product from either country B or from the rest of the world (C). In the absence of any preferential trade arrangement country A levies a specific import duty equal to *t* on the imports originating from both B and C.

Assuming first that the export supply curve to A is perfectly horizontal for both B and C. This corresponds to a case where both B and C are "large" exporters, e.g., where the total volume of exports originating from both countries is too big to be influenced by changes in the import volumes in A. In this case, country A would import the product from one country only, namely from the country supplying it at the lowest price. In textbooks it is customary to represent the effects of PTAs under the assumption that the export supply of both partner countries and the rest of the world are flat. However, these assumptions lead either to a trivial, or to an unrealistic representation of PTAs. Assume that the rest of the world C is so much more efficient than B in manufacturing the good that, also after preferential liberalization, A still imports the good from C only. This would correspond to a case in which PTA is simply ineffective. Assume instead that country B is the most efficient producer. In this case, a non-reciprocal PTA through which A liberalizes preferentially against B would entail the same effects of unilateral MFN liberalization. The consequences of a PTA would appear trivial. Finally, take the opposite case, in which, after the PTA, country A stops importing from C and imports entirely the product from country B. This is a quite unrealistic case. Normally, even after PTAs, countries still import from the rest of the world. Hence, in the following, the good can potentially be imported from both B and C. Necessarily, the export supply curve of at least one country must be positively sloped. Nothing is

Figure III.1



lost by assuming that one country (either B or C) has a perfectly horizontal export supply curve while the other has an upward sloping curve. Consider first the case where country B has a flat export supply. Before the PTA, the import price is equal to $P_B + t$, total imports in A amount to OQ^O, of which OQ_C^0 come from country C, and the rest from B. After the PTA, country A removes its tariff on the imports originating from B, so that the import price falls to P_B (figure III.1). Not surprisingly, total imports rise to OQ^1, with a smaller share (OQ_C^1 / OQ^1) being supplied by C. The production and export price would not change for B. As for C, there would be instead a deterioration in its terms of trade, resulting in a reduction in the export price and produced quantities.

How would welfare be affected? Consider first country A. Imports from B enter now duty free. Hence, area BDFH represents lost tariff revenue. Moreover, since the import price is now lower, consumers now enjoy a rent, while producers in A suffer a loss. The gain in consumer surplus outweighs the loss of producer rents. The net gain is represented by the area ADEI below the M_A curve. Since area ADEI is larger than area BDFH, country A benefits on net by the PTA. As for country B, there is no change in producer surplus there (the supply curve is horizontal). Producers in the rest of the world would instead suffer a loss, measured by area ACHI. Worldwide, there is a net gain equal to the sum of the triangles CGH and DEF, which corresponds to the algebraic sum of areas ADEI, BDHF and ACHI. What is the reason behind this result? After the PTA, consumption possibilities for the liberalizing country can only expand. Moreover, in the case depicted in figure III.1 imports from C are displaced by imports from the more efficient country B. It is customary to illustrate the welfare effects of PTAs in terms of trade creation and trade diversion. Trade creation occurs when domestic production in the preference granting country is replaced by more efficient imports. This corresponds to area DEF in figure III.1, and is associated with well known net welfare gains for the importing country. Trade diversion occurs when, due to preferential liberalization, there is displacement of the more efficient producer by the less efficient. At given import price, such a shift would necessarily induce a loss in the preference giving country due to a loss in tariff revenue. In this case, there is no trade diversion: it is the more efficient country B that displaces the less efficient C. As a result, there is a further efficiency gain CGH due to a better use of resources in B rather than in C at world prices.

It can then be concluded that, under the above assumptions, a non-reciprocal PTA is surely beneficial for the donor country, welfare reducing for third countries, while having limited effects on beneficiary countries. Overall, preferential liberalization yields aggregate gains.

The applications of the case described in figure III.1 are quite limited. There are two basic reasons to assume a reverse case, where the rest of the world has a horizontal export supply. The first reason has to due with the reality. Exports from C are most probably less responsive to price than those from B because the rest of the world is, by definition, a relatively large economy compared with B. The second reason is one of *political economy*, and becomes evident when trying to respond to the following question. Which is the country that has the greater incentive to participate in a non-reciprocal PTA with A? For example country B in figure III.1 neither loses nor gains from better market access into A. However, this is not true if the export supply of B is upward sloping. In that case, B would realize a net gain by obtaining preferential access to the market of A due to higher producer surplus.

So, how is trade and welfare be affected by a PTA in a "more natural" case where the rest of the world is assumed to have a flat export supply curve? Consider first in detail what happens

in country B (figure III.2a). In this case, before the PTA, the domestic price in country A is equal to P_C+t and exporters earn P_C for each unit sold in A. Since country B is an exporter of the good in the pre-PTA situation, at price P_C supply must exceed demand in B. Moreover, being an exporter, country B will not have any tariff on the good we are considering. With a PTA, A imports duty-free from B, so that the exporters of B get the full domestic price $P_C + t$ for each unit sold in A. This price change has disruptive effects in B: all production in B will be directed towards A. B producers are in fact bound to serve the domestic market at price At price P_C, otherwise domestic buyers would shift to imports from C. Necessarily, with the PTA, B producers will only sell to A at $P_C + t$, and B consumers will only import the good from C.

We can now understand the effects of a PTA on the preference-giving country A. Since the supply of the rest of the world is now perfectly horizontal, there would be no change in the import price in A after liberalization and no change in imported quantities. Necessarily, trade creation would be absent. The PTA will instead cause a shift of the import volume away from the rest of the world C and in favor of the partner country B. However, it is important to note that the shift in the supply curve from B to A does not correspond to a shift from curve X^{t}_{B} to curve X_B in figure III.2b. In fact, we have seen that after the PTA the supply from B will rise for two reasons: a direct terms of trade effect (the volume of production rises due to better prices in the market of A) and a displacement effect (all production will be sold to A, with no sales on the

Figure III.2a

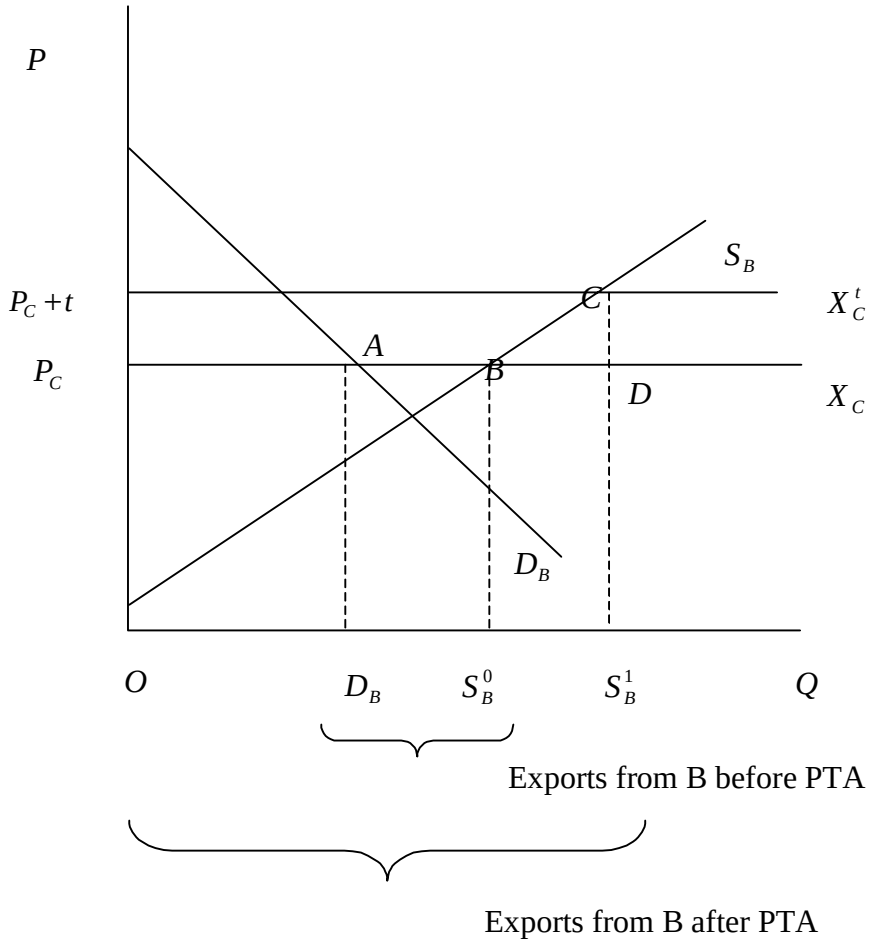
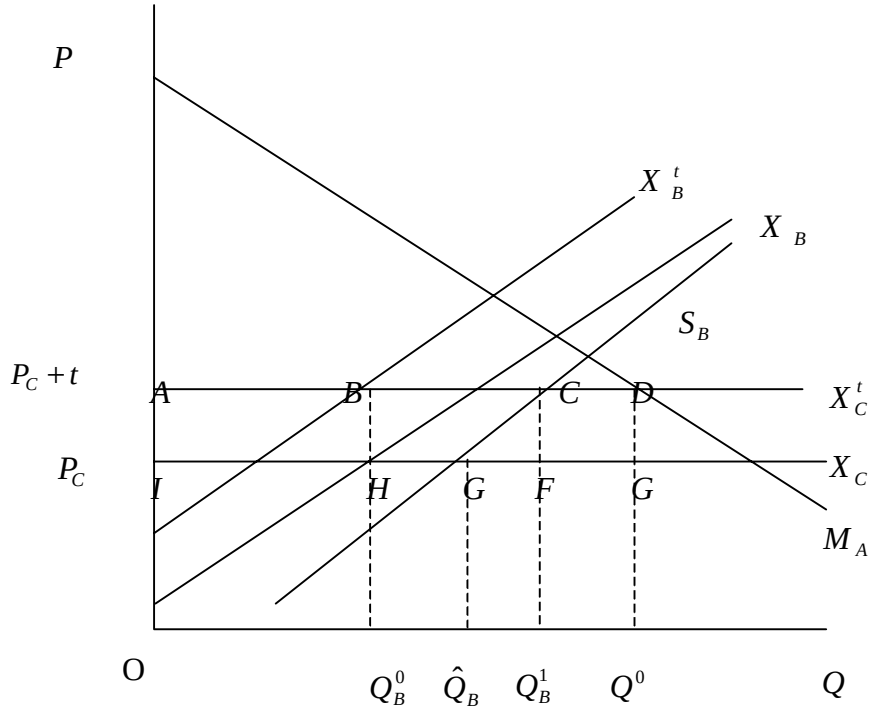


Figure III.2b



domestic market of B). Hence, the supply curve of A to B will not be anymore an export supply curve, but will correspond to the same supply curve S_B as in figure III.2a.

As for welfare, trade creation is straightforwardly nil in this case — no gains accrue to country A from this source. Moreover, since B is now less efficient in producing the required imports, trade diversion would result. The shift towards less efficient suppliers will entail a loss in tariff revenue for A, represented by area ACFI. So, the preference-giving country loses. As for B, there is an improvement in the terms of trade. This results in export expansion for B, larger output volume, and increased producer rents, which rise by an amount represented by trapezoid ACGI. Finally, the effects on the rest of the world are nil, since C has a flat export supply curve. On net, PTA brings about a net loss for the world as a whole, represented by the CFG in figure III.2b (equal to triangle BCD in figure III.2b). This corresponds to the loss in tariff revenue in A less the increase in producer surplus in B. The deadweight loss is associated with the higher cost of production of quantity $\hat{Q}_B Q_B^1$ in B as compared with C. A more efficient producer has been replaced by a less efficient one.[3]

Summarizing, from the standard 3x1 partial equilibrium model it emerges that the formation of non-reciprocal PTAs is more likely to generate gains in the beneficiary country, losses in the donor country, to have negligible effects on third countries and to produce a deadweight loss on aggregate. Two remarks are in order. First, the major welfare effects of preferential liberalization are associated with easily identifiable and measurable trade flows. In particular, benefits to the beneficiary country are associated with its export expansion, while losses in the donor country are associated with the amount of third country imports displaced.

Second, from a political economy perspective, the above findings help to explain why

PTAs that are reciprocal are more often observed in practice. If, in the previous example, countries A and B make reciprocal concessions (in different sectors), both will gain due to improved terms of trade and higher producer rents. This gain will milden the loss in tariff revenue associated with trade diversion.[4] To this it must be added that the outcome of trade negotiations generally results from the interplay of conflicting interests, pro and against liberalization. Since producers generally constitute a stronger and better organized interest group, the position they take in trade negotiations is often crucial.[5] From the above analysis emerge that producers would support PTAs only if occurring on a reciprocal basis.[6]

So far, the analysis has been restricted to a narrow partial equilibrium framework. Several effects have been neglected. In particular, it has been assumed that there are no inter-sectoral linkages at work. Cross-price elasticities among different goods have been assumed to be zero. In the following section it is shown that when more than one good is considered and the role of cross price elasticities is taken into account, it becomes necessary to reconsider the effects of PTAs, both on traded quantities and prices and on welfare.

2. Partial equilibrium analysis, imperfectly substitute goods

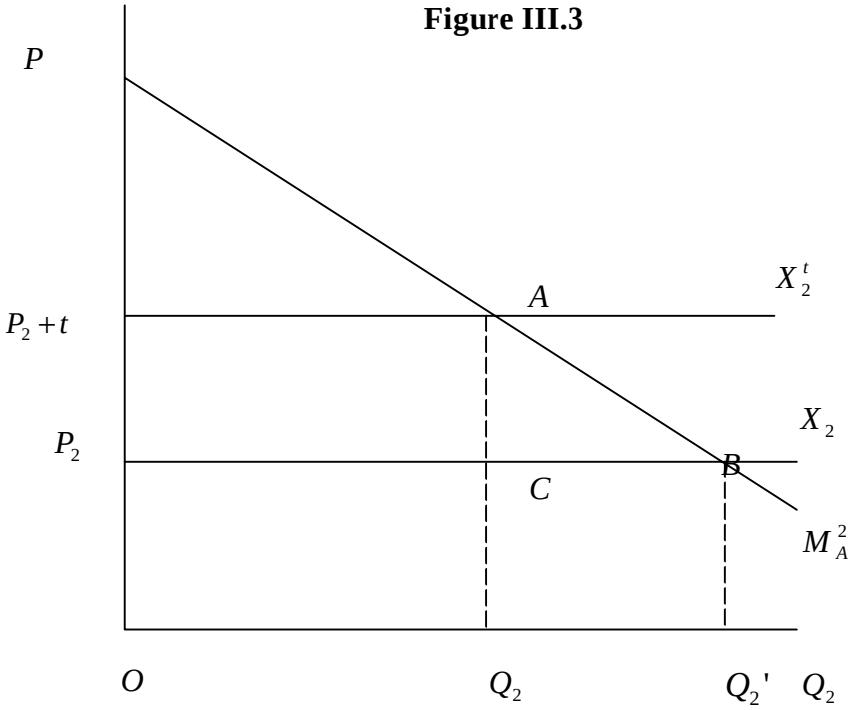
Consider a simple three-countries, three-goods framework.[7] To keep the analysis still a partial equilibrium one, we have to exclude income effects. Moreover, to simplify things, we will still neglect demand coming from the rest of the world. Each of countries A and B are assumed to consume each of the three available goods, denoted by 1, 2, and 3. It is assumed instead perfect specialization from the viewpoint of production: country A produces only good 1, country B is fully specialized in good 2, while C only supplies good 3. The pattern of trade is trivially determined under these assumptions. Countries participating in the PTA (A and B) will supply each other with the only good they produce, importing good 3 from the rest of the world. Note that, compared with the 3x1 case considered previously, we are not obliged now to assume an upward sloping supply curve for some country in order to have countries importing simultaneously from more than one country. To make things easier, we will then assume that all three countries have a perfectly horizontal supply curve.

Again, assume that initially both country A and B impose the same specific tariff on imports in a non-discriminatory fashion. Consider then what happens to A when it accepts to import good 2 duty free from B. The effects of this trade reform must now be evaluated on the market of three goods: 1, 2, and 3. Let us start from good 2. The analysis for this good is similar to that already considered in the previous section. The reduction in the import price of good 2 allows for an expansion of the imports of country A and for an improvement in country A welfare due to a gain in consumer surplus that outweighs the loss in tariff revenue (area ABC in figure III.3).

As for good 3, there is no price change, since we are assuming perfectly horizontal export supply curves and no change in tariff against the rest of the world C. However, the liberalization of imports of good 2 produces welfare effects also on the market for good 3. Assume that good 2 and good 3 are substitute in consumption for A residents, i.e., that the cross-price elasticity between good 2 and 3 is positive. A reduction in the import price of good 2 entails then an inward shift in the demand for good 3 in country A, as illustrated in figure III.4. Since on the imports of 3 there is still a tariff t levied by country A, the reduction in the import volumes of good 3 results

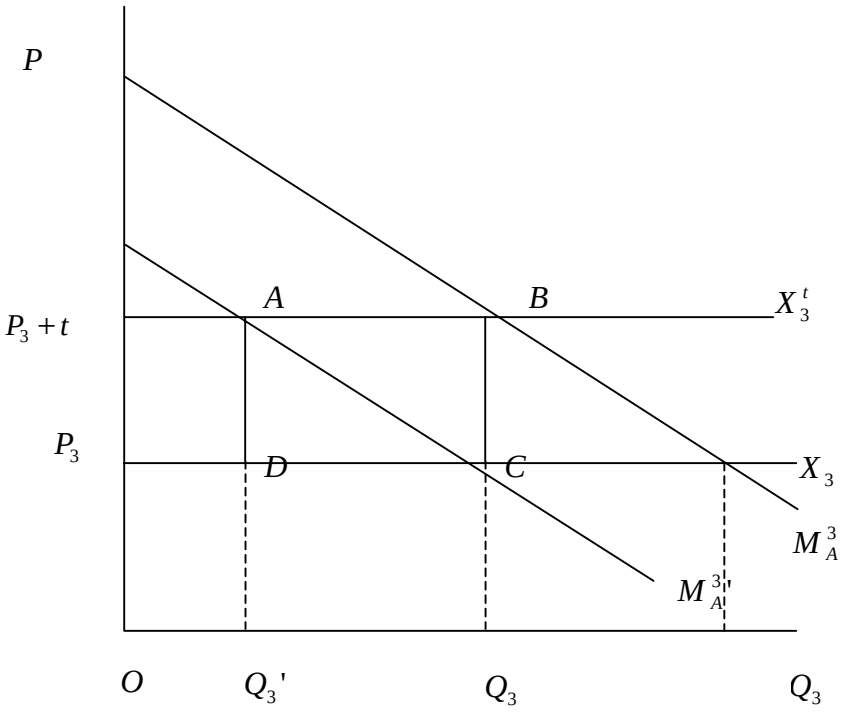
in a loss in tariff revenue equal to area ABCD. Finally, consider what happens in the market for good 1 in country A. There, since the export supply is flat and there is not change in price, welfare effects are nil. Demand may either rise or fall depending on whether good 1 is complement or substitute with 2, but there would no change in either producer or consumer surplus, or in tariff revenue.

Figure III.3



The net welfare effects of a non-reciprocal PTA are evaluated as the algebraic sum of areas ABC in figure III.3 and ABCD in figure III.4. The first area ABC is the 3-good equivalent of trade creation, while area ABCD stands fro trade diversion (see Vousden, 1990). We see that when good 2 and 3 are substitutes welfare effects are ambiguous: trade creation may either be higher or lower than trade diversion. However, results would be clear cut in case of goods 2 and 3 being complements. The imports of good 3 would in this case rise, entailing an increase in tariff revenue for country A. PTA would be unambiguously beneficial to the preference-giving country A.

Figure III.4



In the trivial case just considered, there would be no effect neither on the beneficiary country B nor on the rest of the world. This comes from the assumption of perfectly horizontal supply curves that exclude terms of trade effects. Allowing for less than infinite supply elasticities there will be again positive effects for beneficiary countries following non-reciprocal PTAs (associated with their terms of trade improvement, trade expansion and increased producer rents), whereas the effect on third countries will depend in this case on how their ex-

ports substitute with those from B.

The 3x3 model of PTAs uncovers important features of unilateral preferential liberalization. After a slight reinterpretation of the variables involved, the 3x3 analysis is extremely useful in enriching applied partial equilibrium analysis. Assume that what is traded are not three different goods, but three variants of the same good. In other words, each country is assumed to produce varieties of the same good that are not perfectly substitute with those produced by competing countries (the so-called *Armington* assumption). Since under this interpretation what is traded is one good only, cross-price elasticities across varieties cannot be neglected. It is instead legitimate, as in standard partial equilibrium models, to neglect the substitution/complementarity relationships with other, outside goods. Such a framework allows for two-way trade occurring within sectors and imports coming from several sources also in the presence of price differences.

3. General equilibrium analysis

The 3x3 model presented in the previous section helps to understand the basic mechanic within a general equilibrium framework. Consider now a framework where income effects are present, and where also the rest of the world country C consumes all the three goods considered. As for consumer preferences, they are assumed identical in all countries and linearly homogenous. It is further assumed that the tariff revenue is distributed equally across individuals in all countries in a lump-sum fashion. Finally, by appropriate choice of units, the prices of all three goods in country C, which imports duty free (so, the world price for all goods is the same and it is fixed by the assumption of flat supply curves) are equal to one.

It is possible to represent the equality between expenditure and income in country A using the expenditure function of the representative consumer. Denoting the equilibrium utility lend by u, and recalling that, by Shephard's Lemma, the first derivative of the expenditure function with respect to good i (e_i) corresponds to the (Marshallian) demand function for good i, we can write

$$e(1,1+t_2,1+t_3)u = Q_1 + t_2 e_2 u + t_3 e_3 u \qquad (1)$$

On the right hand side of equation (1) there is individual (and then aggregate) expenditure, on the left hand side there is income. Income comes from the sales of good 1 at a unit price, and from tariff revenue on both goods 2 and 3.

We ask then how the equilibrium utility of A residents (u) change after a non-reciprocal PTA through which the tariff on goods coming from country B (t_2) are reduced. This can be assessed totally differentiating (1). Using the fact that e_2 is homogenous of degree zero, after some manipulations the elasticity of A residents welfare with respect to t_2 is obtained as follows

$$\frac{\partial u}{\partial t_2}\frac{t_2}{u} = \frac{t_2\left(t_2 e_{22} + t_3 e_{23}\right)}{e - t_2 e_2 - t_3 e_3} \qquad (2)$$

The interpretation of equation (2) becomes easy after the graphical analysis presented in the previous section. The sign of the elasticity of welfare with respect to a preferential tariff change depends on the sign of the term within parenthesis at the numerator of Eq. (2).[8] Since e_{22}

is surely negative, everything depends upon the sign of e_{23}. This is positive if good 2 and 3 are *net* substitutes, and negative if they are net complements. A preferential reduction in tariffs against country B will therefore surely benefit country A if good 2 and 3 are net complements, whereas results are ambiguous when the goods are net substitutes. Only in this case trade diversion takes place and can potentially lead to a negative welfare result.

In summary, general equilibrium effects of non-reciprocal PTAs depends crucially on whether other goods are "on average" *net* complements or substitutes with the goods whose imports are being liberalized. Partial equilibrium models neglecting the role of inter-sectoral linkages in consumption may lead to flawed results in applied work aimed at assessing the effects of PTAs if liberalization is likely to produce strong substitution/complementarity effects across different sectors.

As long as non-convexities in preferences and technologies are kept out of the picture, the basic results on PTAs presented so far can be extended to a very general framework, with an arbitrary number of countries and commodities, general production technologies, inter-sectoral factor mobility, and money.[9] In such richer framework, preferential liberalization will affect the relative price of goods (and the terms of trade) and the relative price of factors (Stolper Samuelson effects). Moreover, there will be induced real income effects and associated exchange rate changes. In any case, the key mechanics through which changes in trade flows and welfare are produced still operate through substitution relationships in consumption and production between close substitute goods or varieties.

Adopting a partial or a general equilibrium approach is most probably not crucial if the objective is that of identifying the main effects, and their sign, associated with preferential trade liberalization in a limited number of sectors. However, when preferential liberalization involves a large number of sectors and/or beneficiary countries, then relying on a collection of partial, sectoral analyses, may lead to a distorted view of the global impact of PTAs, which cannot be obtained as the sum of the sectoral impacts. Moreover, when the object of the analysis becomes that of assessing the *order of magnitude* of the effects of PTAs, then adopting a partial or a general equilibrium framework of analysis may matter substantially. Many offsetting effects following liberalization and working through inter-sectoral shifts, factor price adjustment and exchange rate changes are neglected in partial equilibrium models.

4. Enriching the framework of analysis

So far we have considered an analytical framework characterized by perfect competition and absence of market failures and non-convexities in production. Moreover, production factors have been assumed immobile across national boundaries. Finally, no dynamic considerations have been made, related to capital accumulation and technical change.

The above mentioned factors are likely to alter substantially the evaluation of the effects inherent to PTAs. For instance, when the existence of scale economies in production is considered, the effect of PTAs should also take into account the change in average production costs following preferential trade liberalization. The outcome of PTAs in such a case would depend upon a trade-off between trade creation, trade diversion and scale economies exploitation.[10] It has also been shown in theoretical analysis that preferential liberalization may redirect the flows

foreign direct investments (FDIs). The countries benefiting from improved market access under PTAs may in fact derive further income gains from increased inflows of market seeking FDIs. By altering the scale operations in different industries and countries, the formation of preferential trade arrangements may also influence the rate of knowledge accumulation and productivity growth.[11]

Overall, the consideration of production non-convexities and learning by doing tends to further shift the effects non-reciprocal PTAs in favor of beneficiary countries and away from donors and third countries. A better market access to donor countries can allow for the exploitation of scale economies, thus yielding improved static efficiency. Moreover, larger export and then production volumes would stimulate the accumulation of knowledge in beneficiary countries, leading to "learning curve" effects and dynamic productivity gains.

The above considerations played a relevant role in shaping international policy developments during the past decades. The advocacy of preferential market access for developing countries was grounded in the necessity of granting a level playing field in international trade, where countries at different stages of development may find equal opportunities from world markets. The internal markets of many developing economies were considered too small to allow for the exploitation of relevant scale economies. The lack of skills and technical knowledge that characterized industrial production in the developing world justified "infant industry" arguments, according to which industrial development in backward regions of the world is inconsistent with trade occurring on a MFN basis.[12] Though relevant and influential in the policy debate, the arguments grounded in scale economies and market failures associated with learning curves did not receive comparable attention in theoretical and applied policy analysis. There are difficulties in modelling non-preferential PTAs in the presence of scale economies and dynamic effects. Due to lack of reliable data, the difficulties become even bigger when the aim is that of assessing quantitatively the effects of preferential trade arrangements taking into account the presence of scale economies and learning curves.[13]

5. From theory to measurement

The effects of PTAs enlightened by theory can be assessed quantitatively *ex-ante* or *ex-post*. Both ex-ante and ex-post estimation requires a relevant amount of data. For ex-ante estimation it is necessary to dispose of an analytical set-up and sufficient information to assess how trade flows, production, consumption and welfare would be affected by an exogenous change in policy. Ex-post estimation also needs data and an analytical framework to make possible the comparison between actual (after the policy reform) changes in trade flows, production and consumption with those that would have taken place under the original policy environment (i.e., in the counterfactual case). We limit our discussion here to ex-ante measurement.[14]

The work aimed at assessing ex-ante the effects of trade policy reform is based on computable equilibrium models. The principle at the ground of these techniques is a simple one. Assuming that a reliable theoretical (partial or general equilibrium) model for the economies under study is available, the objective is that of determining the values for the main endogenous variables (e.g., trade flows, consumption, production…) associated with "new", different values of policy variables (e.g. tariffs), assumed to be exogenous. The link between endogenous variables and policy variables is a complex one, which is shaped by the assumed structure of the model

(number of equations, functional forms…) and the numerical value of a set of relevant parameters. So, two steps are crucial for policy modelling. First, the choice of the model. Second, the choice of numerical values for the relevant parameters. A model can be a partial or general equilibrium one, may account for many effects (e.g., non-constant returns to scale in production…) or only few of them, may be defined at a high level of sectoral disaggregation or give only an aggregate representation. Numerical parameter values can be directly measured from existing data or estimated through econometric techniques. Quite often, some parameters do not have a clear empirical counterpart (think of some preference parameters), so that their value can only be obtained residually, though a calibration procedure. Given the observed values of endogenous variables (prices, quantities…) and the estimated values of some parameters (e.g., demand elasticities), the numerical value of the remaining parameters is determined from the model system if there are more equations than unknowns. Of course, the choice of the model affects the reliability of the exercise both directly (which effects can be and cannot be taken into account in the numerical assessment) and indirectly, via the numerical implementation of the model and calibration procedure. Complex and sophisticated models may end up being less reliable than simple ones because requiring the evaluation of a large set of parameters, whose numerical value is not easily available.

Which are the crucial parameters that are likely to affect results? From the discussion in the previous sections it emerges that two sets of parameters are of primary relevance. First, supply elasticities. We have seen that depending on whether the export supply curve of beneficiary countries is relatively flat or steep compared with that of third countries the effect of PTAs on trade creation, trade diversion and on welfare may differ a lot. Second, own and cross price elasticities of demand. Once substitution effects are taken into account, the net welfare effects of PTAs depend crucially on how the goods exported by beneficiary countries relate with competing varieties exported by third countries (Armington differentiation) or with alternative goods.

C. Evidence

In the following the major findings emerging from calibration-simulation studies aimed at assessing ex-ante the impact of preferential trade liberalization are summarized. Work based on both partial and general equilibrium modelling will be reviewed. Advantages and drawbacks of the two modelling strategies will be discussed. Most of the work that will be reviewed deals with the effects of non-reciprocal preferential liberalization under the broad heading of the Generalized System of Preferences, but results of recent studies evaluating the impact of new initiatives to concede preferential trade to LDCs will also be reviewed.

1. Partial equilibrium models

The first analyses aimed at evaluating ex-ante the effects of one-way preferential tariff treatment has developed in the early 1970s, in order to assess the impact of the implementation of GSP schemes.[15] All the early analyses (up to mid 1980s) adopt a partial equilibrium approach.[16] They are generally referred to donor countries, e.g., evaluate the effects on trade volumes and welfare of different beneficiary countries of the GSP scheme of a particular donor country. The level of aggregation considered in the different analyses varies quite strongly, and different assumptions are made on the simulated policy change. In particular, the assumed sectoral coverage

and utilization rate of GSP preferences differs substantially from one study to another, and also the way non-tariff measures (e.g., quotas) are treated. Existing partial equilibrium studies exhibit a number of methodological similarities. First, all are based on the assumption of Armington differentiation, e.g., within each product category considered, exports from beneficiary countries are imperfect substitutes of exports from third countries and domestic production in donor countries. Second, in several analyses it is assumed that the elasticity of substitution is the same between each pair of varieties, so that exports from beneficiaries substitute the same way with third countries' exports and local production in donor countries. Third, supply and export supply elasticities are normally assumed to be flat in all countries.

Clague (1972) and Baldwin and Murray (1977), adopt constant Armington elasticities and estimate the impact of the GSP scheme of the United States, EEC, and Japan. From their analysis, the value of total exports from beneficiary to donor countries (gross trade creation) increase by about 20 per cent as a consequence of the GSP scheme of the United States and that of the European Union (smaller figures are obtained for Japan), and most of this trade expansion is due to (net) trade creation. Sapir and Lundberg (1984) and Pelzman (1983) focus on the United States scheme and work on a different base year and different assumptions on the product coverage and preference margins. They estimate a much smaller gross trade creation, with total exports in value from beneficiary countries rising by about around 2 per cent as a result of the US GSP scheme. In these analysis, though, trade diversion remains negligible. Ahmad (1978) analyzes the scheme of Canada and obtains instead that the expansion of exports of beneficiary countries is almost fully trade-diverting. Karsenty and Laird (1987a and 1987b) consider the scheme of all the industrialized countries and conduct an analysis at a high level of disaggregation. Their findings show that each of the schemes of the US, EEC and Japan cause gross trade creation below 3 per cent, while that of Australia produces an increase in beneficiaries' exports around 10 per cent. In general, trade diversion accounts for less than one fifth of gross trade creation.[17]

There are two findings that are common to all studies. First, trade expansion appears to be very concentrated in a small group of Asian beneficiary countries (Korea, Hong Kong, Taiwan), and the share of African countries is negligible. Second, trade effects are concentrated in few sectors, mainly textiles and apparel.

The order of magnitude of the GSP impact differs considerably between different studies. This is in part due to different base years used in the calibration, to different assumptions concerning the actual implementation of GSP preferences and a different treatment of non-tariff barriers. Part of the differences in results are attributable instead to methodological issues. In particular, two of them must be mentioned. First, results appear very sensitive to the values of Armington elasticities. The analysis by Ahmad (1978) yields high trade diversion because of the assumption that exports of beneficiary countries are closer substitutes with third countries' exports than with domestic production in donor countries.[18] Second, the assumption of flat export supply curves is also biased in favor of high trade expansion and small trade diversion. In the analysis of Clague (1972) it is assumed that the export supply curve of beneficiary countries is flat, while that of the rest of the world is upward sloping. As shown previously (cfr. figure III.1) these assumptions create a bias against trade diversion and are probably not realistic.

Recent ex-ante partial equilibrium analyses of non-reciprocal PTAs seem to address some of the methodological weaknesses common to many early studies. Moreover, the availability of a larger set of parameter estimates (concerning, for instance, substitution elasticities) makes pos-

sible the implementation of more reliable computable equilibrium analyses. Among recent work, Hoekman, Ng and Olarreaga (2001), estimate the effects of the removal of tariff peaks against LDCs by Quad countries (United States, European Union, Japan and Canada). In their work, the values for substitution elasticities are taken from Shiells, Stern and Deardoff (1986), and simulations are made under the alternative assumption of flat, upward sloping and isoelastic supply curves with 0.5 elasticity. Their results indicate that the removal of tariff peaks against LDCs will generate both small trade expansion for beneficiary countries and small trade diversion.

Finally, these studies disregard long-run phenomena such as sectoral reallocation of resources and balance of payments adjustment. Relative price changes and real exchange rate realignments play against trade expansion and in favor of trade diversion. Also, for these reasons there is probably a bias in the partial equilibrium ex-ante estimates in favor of trade expansion in beneficiary countries and against trade diversion.

2. General equilibrium models

The findings obtained through computable general equilibrium (CGE) models differ quite substantially compared with those arising from partial equilibrium analysis.[19] As summarized in Brown (1988), when the effects of non-preferential PTAs are evaluated by means of general equilibrium models, three main differences in results arise. First, gross trade creation appears always smaller compared with that estimated using partial equilibrium techniques. For instance, Brown (1989) estimates the GSP scheme of Japan to be associated with a percentage increase in the export of beneficiary countries subject to preferential treatment that is half of that estimated by Karsenty and Laird (1987) and less than one third of that found in Baldwin and Murray (1977). Second, trade diversion appears generally stronger in general equilibrium analyses. Still for the case of Japan, Brown (1989) finds that half of the increase in beneficiary countries' exports was purely trade diverting, and similar figures are obtained for the United States and the EEC (see Brown, 1988). Finally, and more surprisingly, non-reciprocal PTAs generally induce welfare losses to donor and also to some beneficiary countries even if trade creation generally outweighs trade diversion. As in partial equilibrium studies, however, it is found that the effects of GSP are very concentrated in some beneficiary countries and in few sectors.

The differences in results are primarily due to the additional effects brought into the picture by changing terms of trade, factor prices and exchange rates. Each of these factors are likely to reduce the extent of gross trade creation and to raise the incidence of trade diversion. The negative welfare effects must be addressed separately in the case of donor in that of beneficiary countries.

Donor countries experience a loss due to worsened terms of trade. While in partial equilibrium analyses terms of trade effects are generally neglected, in CGE analyses terms of trade are emphasized. Due to the Armington assumption, each country is the only producer of its own export. The export supply of each country is obtained, at equilibrium, from the difference between domestic consumption and production. Production, in turn, obtains from a given stock of production factors. In such a framework, the export supply of each good turns out to be highly elastic, and, consequently, terms of trade effects are very strong.

Some beneficiary countries may end up losing from the preferential treatment also. This negative welfare effects are partly due to the very second best nature of the preferential tariff

schemes adopted by most donor countries. Many goods in which beneficiary countries are likely to enjoy a comparative advantage (textiles and clothing, agriculture) are quite often excluded from preferential trade. This leads to a counterproductive shift in the specialization pattern of beneficiary countries, since resources are drained in comparatively less efficient sectors.[20] A second reason that may lead to welfare losses is the presence, in some beneficiary countries, of exchange rate controls and import restrictions. In the countries where such controls are present, the expansion of imports is matched by an almost equivalent expansion of imports. This leads to a null, or even negative impact of GSP preferences of these countries' terms of trade, and then on welfare.

Among recent CGE work on the impact of non-reciprocal PTAs proposals, it is to mention that by Ianchovichina, Mattoo and Olarreaga (2000). The aim of the work is that of estimating ex-ante the effects of alternative preferential liberalization measures targeted to Sub-Saharan Africa (SSA). Different policy experiments are simulated: i) liberalization in the United States only (as committed in the African Growth and Opportunity Act); ii) liberalization of manufactures to Japan only; iii) liberalization in the European Union (Everything but Arms); iv) liberalization of all goods in all Quad countries (United States, European Union, Japan, Canada). The GTAP model (see Hertel, 1997) is used for simulations, whose database for trade barriers has been integrated with WTO data on countries' preference margins and where the effects of non-tariff barriers have been taken into account in agricultural products. Results indicate that, while reforms i) and ii) have negligible effects on beneficiary countries, the impact of EBA can be quite substantial, and a full liberalization in all Quad countries will have quite strong effects. EBA alone would raise total export revenue of SSA by about 3 per cent, while an integrated action by Quad countries would boost SSA exports by 14 per cent. Both under EBA and full liberalization in the Quad the *percentage* gains in SSA are non-negligible (real GDP rises, respectively, by 0.22 and 1.22 per cent in the two scenarios), while welfare changes in Quad countries and other competing developing countries are negligible (below 0.01 per cent). Trade diversion appears quite small, both in relative and absolute terms, so that the impact of the various initiatives on third countries' welfare is also small. The basic reason for that is the small weight of SSA countries in world. The impact of the different market access initiatives for SSA on world welfare is however slightly negative. Though trade diversion is moderate, it appears costly: there is displacement of more efficient third countries exports by SSA exports.

Overall, there are advantages to CGE analysis but also drawbacks. A general equilibrium setting is preferable when the policy experiment to be modeled affects simultaneously many countries and many sectors and is likely to have relevant repercussions on the terms of trade, factor prices and income. However, results are still sensitive to the elasticities used.[21] In particular, in almost all CGE models it is assumed a constant elasticity of substitution between exports of different origin. This assumption is dictated by a requirement of parsimony in calibration, but has strong implications for the estimates of trade creation and trade diversion. As for export supply elasticities, the choice of CGE modelling may lead to an opposite bias compared with that pointed out in partial equilibrium modelling. By the Armington assumption, each country is assumed to be the only suppliers of its own export type, e.g., to enjoy monopoly power on world markets, irrespective of its size. This may lead to an overestimation of terms of trade effects.[22] A second problem with CGE modelling arises when policy reforms are concentrated in few sectors or product categories. In these cases, the gain obtained from a richer representation of the model economy may be easily offset by a loss of precision in calibration. CGE models are often too aggregated to yield precise simulations when policy affects few sectors defined at a narrow level.

D. Conclusions

It is well-known in trade theory that the implementation of Preferential Trade Arrangements (PTAs) yields ambiguous effects on participating countries and on the world as a whole. The gains associated with better trade conditions within the agreement (trade creation) must be compared with the losses associated with the displacement of more efficient imports originating from outside countries (trade diversion). When such arrangements are non-reciprocal, so that some countries agree to reduce their trade barriers vis-à-vis a set of other countries without expecting a similar preferential treatment in exchange, substantial ambiguities in the overall expected effects remain. This is true even if the distribution of gains and losses can be distinguished by each country as a donor (the country that agrees to concede tariff preferences), a beneficiary (a country that receives preferential treatment) or a third country. Theory alone, if complemented with few relevant statistical information, can be sufficient to identify the sign of the effects on trade and welfare associated with non-reciprocal PTAs for the different types of countries. For policy judgement, however, what is needed is also an assessment of the order of magnitude of these effects. Applied equilibrium analysis has become the standard tool-kit to evaluate ex-ante the impact of trade policy reforms. Based on trade theory and on existing applied equilibrium work, the likely effects, and their order of magnitude, arising from non-reciprocal PTAs can be summarized as follows:

Donor countries

Donor countries are more likely to gain from their own concessions the more elastic is the supply of exports of beneficiary countries and the less easily substitutable are the imports from beneficiaries with those originating from third countries. The export supply curve of beneficiaries is relatively inelastic when their weight in total trade is small and supply constraint substantial. In this case, preferential trade liberalization necessarily results in worsened terms of trade for the donor country. When the exports of the beneficiary country are easily substituted with those of third countries, trade diversion is likely to occur: more efficient imports from third countries may be displaced by cheaper (though inefficient) imports from beneficiaries. In a partial equilibrium framework, the gains from trade creation are associated with increased consumer surplus, the losses from trade diversion with lost tariff revenue. The net effect may be either positive or negative.

Applied analysis has shown that the effects of existing non-reciprocal PTAs (e.g., the GSP) on donor countries are generally small or very small on aggregate. Partial equilibrium analysis has shown that the displacement of domestic production following existing PTAs is of limited relevance on aggregate, but that it may be concentrated in a small number of sectors. General equilibrium analysis has shown that there may be welfare losses for donor countries, mostly coming from worsened terms of trade. In general, welfare gains or losses for donor countries are negligible in percentage terms.

Beneficiary countries

The countries receiving preferential market access realize gains that are higher the stronger the improvement in their terms trade. These countries benefit from increased producer rents in donors' markets. Hence, the granting of preferential access may cause a massive redirection of production in beneficiary countries from the domestic market to donors' markets. Applied equilibrium analysis has shown that existing non-reciprocal PTAs increase exports from beneficiary countries by several percentage points (mostly in the range 2 to 20 per cent). The induced change

in exports appears to be highly concentrated in few beneficiary countries and in a small number of sectors. Computable general equilibrium analysis show that preferential market access is likely to generate moderate welfare gains in beneficiary countries. Welfare gains are higher the lower the distortions associated with preferential access, (the lower the degree of sectoral discrimination) and the lower the existing distortions in the trade regime of beneficiary countries.

Third countries

Non-reciprocal PTAs may cause losses in third countries through terms of trade effects associated with trade diversion. These effects are stronger when exports from beneficiary countries and third countries are close substitute and when the relative weight of beneficiary countries in world markets is high. Applied partial equilibrium analysis estimate small or negligible export losses by third countries. In general equilibrium estimations trade diversion appears larger, but still small in percentage terms, and welfare losses to third countries are generally negligible.

NOTES

1 Though special transitory periods are provided for some sensitive sectors.

2 The approach used in the following analysis dates back to the work on customs union by Viner (1950). In our exposition we follow quite closely Panagariya (1998).

3 Note that there is not such an inefficiency associated with imports $Q_B^0Q_B^1$ because this quantities are not produced additionally after PTA: they are just redirected from the domestic market of B to the market of A.

4 This point has been put forward, for instance, by Panagariya (1998). See also Wonnacott and Wonnacott (1981) for a formal argument showing the why countries may prefer forming a customs union rather than liberalizing unilaterally even when this is beneficial to each of them.

5 The theory of protection based on sectoral lobbying builds on the work by Olson (1965) on group mobilitation. See Vousden (1990) for a review of early work and Grossman and Helpman (1994) for recent common agency modelling techniques. For empirical evidence, see Pincus (1975) and Goldberg and Maggi (1999).

6 See also Bagwell and Staiger (1999).

7 We follow the first version, developed by Meade (1955), of the 3X3 model of PTAs. Other versions have been proposed by Berglas (1979), Collier (1979) and Riezman (1979). See also Lloyd (1982) and Corden (1984) for useful surveys on the 3X3 approach to PTAs analysis.

8 Note that, by linear homogeneity of preferences, the denominator of (2) is necessarily positive.

9 Kemp and Wan (1976) established welfare effects of customs union under a high dimensional general equilibrium framework. The interested reader is referred to Corden (1984) and Vousden (1990) for useful surveys.

10 Customs unions in the presence of scale economies has been first studied by Corden (1972).

11 See, e.g., Barro and Sala-i-Martin (1995) for an illustration of the “endogenous growth” arguments, according to which a larger scale of operations translates into faster growth due to the accumulation of knowledge and/or a finer division of labor along the value channel. See, e.g., Young (1991) for an application of these arguments to international trade issues.

[12] See, e.g., Prebisch (1964) for an exposition of the "traditional" arguments in favor of special and differential treatment of developing countries in international trade. See also Whalley (1999) for a review of recent arguments that justify special and differential treatment.

[13] However, in the last decade, a remarkable progress has been made in applied trade policy analysis in the presence of increasing retunrs and dynamic effects. See, e.g., Francois and Roland-Holst (1997) and Francois, McDonald and Nordstrom (1997).

[14] Ex-post techniques consists of constant-market-share (CMS) analysis or "gravity models" estimation. In CMS analysis the object is that of estimating the changes in trade volumes associated with PTAs on the basis of an a-theoretical counterfactual, obtained from the interpolation of time series. See, for instance, USITC (1983) for an application of CMS analysis to the effects of the US GSP scheme. Gravity models use regression techniques to predict actual trade volumes from a limited number of explanatory variables, among which distance and countries' income (see Bergstrand, 1985, on the theoretical foundations of this approach). Preferential export treatment appears in gravity equations as a dicothomic dummy variable. See Sapir (1981) for a gravity equation study on the effects of the EEC GSP scheme.

[15] The effects of previous non-reciprocal PTAs (e.g., those concluded between the EEC and APEC or other Mediterranean countries) have only been evaluated ex-post (see Brown 1988 for a survey of the results arising from these studies).

[16] See, e.g., McPhee (1989) for a survey of partial equilibrium studies of the effects of the GSP.

[17] The authors use as a benchmark an elasticities of substitution of 1.5 between the exports of different countries and between exports and home production in donor countries.

[18] See also Pomfret (1986) on this point.

[19] See Francois (2000) on CGE models for trade policy evaluation.

[20] Fukase and Martin (2000) show that this effect may be particularly strong in some cases. They do a CGE analysis of the effects of the United States granting MFN Status to Vietnam, and find that a better exploitation of comparative advantages explains abut 40 per cent of the gains accruing to Vietnam after liberalization.

[21] It is to say, however, that the rising awareness of robustness problems of CGE estimation has led to the development of advanced techniques for sensitivity analysis. For the case of the GTAP model, see Arndt (1996).

[22] A different route to obtain two-way trade in the same sector in CGE models is that of modelling the market structure as monopolistically competitive (see, e.g., Francois and Roland-Holst, 1997). In this case, it is each firm to enjoy some degree of market power in world markets.

IV. COMPUTABLE GENERAL EQUILIBRIUM ANALYSIS

A. Introduction

This section analyzes the effects of the EU-EBA policy, including an integrated initiative by all Quad countries. The methodology is based on computable general equilibrium modelling. This approach has been used extensively to model various trade policy scenarios. It was used widely to model the potential benefits from the implementation of the Uruguay Round Agreement. It has the distinct advantage of being able to identify the costs and benefits of different policy scenarios including their magnitude and distribution. It is well known from the theory of international trade that trade liberalization affects resource allocation within countries and the terms of trade. Because of these changes, some countries may end up gaining, other losing. It is also known that, compared with non-preferential liberalization, preferential arrangements may or may not improve allocation efficiency at the world level. Results depend on the complex interaction between countries' characteristics, the existing pattern of protection, and the design of the trade arrangements to be evaluated. In order to simultaneously take into account all these determinants, a sufficiently rich representation of the status-quo should be compared with an ex-post scenario in which all trade flows and patterns of production adjust to the simulated policy change. CGE modelling permits carrying out such an analysis. Despite its usefulness in obtaining insights into the direction and possibly the magnitude of the impact of trade policy changes, it is important to remember that the methodology has weaknesses. One of these is the assumption of smooth and automatic adjustment processes. CGE analyses ignore, in some cases, significant supply capacity problems that may exist in LDCs.

B. CGE Methdology

1. The model

The model adopted in the analysis is the standard available version from the Global Trade Analysis Project (GTAP), which is static, where all markets are assumed to be perfectly competitive and technologies exhibit constant returns to scale (Hertel, 1997). The sector/country aggregation has been chosen in such a way as to isolate the most sensitive sectors and world regions to the simulated policy experiments.

The world is divided into geographical regions. Within each region, consumers are assumed to have identical preferences. They allocate a constant fraction of income between private consumption, public consumption and savings (Cobb-Douglas aggregation), while demands for different private goods have constant difference of elasticities (CDE) functional forms. Each product is perceived as different if produced in another country (Armington differentiation). The elasticity of substitution between any pair of domestic and imported goods is constant within each sector and the elasticity of substitution between each pair of imported goods originating from different countries is twice higher than that between domestic and foreign goods.

The production side of the model assumes fixed production coefficients between primary and intermediate inputs (Leontief aggregation). This means that substitution is not allowed in production between intermediates and primary inputs. As for intermediate inputs, they are again assumed to be "Armington differentiated", with constant substitution elasticities (between domestic and foreign inputs, and between inputs of different foreign origin) that are the same as those used for final demand. Production factors are fully employed. Primary production factors (agricultural land, skilled and uskilled labor and capital) are mobile across sectors. The degree of intersectoral factor mobility is captured by a constant elasticity of trasformation (CET) revenue function. Labour is immobile internationally.

Returns to factors of production accrue to households in the form of income which, in turn, feeds into consumption demand and savings. Households' savings can either finance domestic or foreign investment. Total world savings equals total world investment and expected rates of returns on savings are equalized across world regions (neoclassical closure).[1]

2. Data, aggregation and policy simulations

The data-base employed in simulations is GTAP version 5 (preliminary version), where 1997 is the base year. Trade data are combined with protection and transportation cost data to represent the fundamental international trade linkages across world regions. Detailed input-output data bases for production account for the inter-sectoral linkages within each region.[2]

The 65 original countries are aggregated into 19 regional groups. LDCs are disaggregated into Bangladesh, Malawi, United Republic of Tanzania, Uganda, Zambia and the rest of Sub-Saharan Africa (annex table IV.A.1). The rest of Sub-Saharan Africa aggregate includes several non-LDCs, which will bias the results when interpreted strictly as LDCs. The country aggregation constraint was also present when an LDC was included as a very small component of a regional aggregate. In this case, the region was considered non-LDC (annex table IV.A.1). Each of the Quad members appear as stand alone countries, where the European Union appears as an aggregate. As for third countries, the aggregation rule was a combination of level of development and geography.

The original 57 sectors present in GTAP5 have been further aggregated into 22 new sectors (annex table IV.A.2). Services and several manufactures appear highly aggregated in the new sectoral classification, whereas goods intensively exported by LDCs (agricultural products, food, basic commodities and light manufacturing) are disaggregated.

Protection data available in the GTAP5 version includes MFN ad-valorem tariff levels and the tariff equivalents of agricultural quotas.[3] Tariff protection refers to applied tariffs, constructed by weighting each post-Uruguay Round applied MFN tariff line with actual imports. This leads to bilateral tariffs that may differ substantially from MFN tariffs. The restrictive effect of OECD countries' quantitative barriers in agriculture in 1997 is translated into tariff equivalents.[4] In GTAP, ad-valorem tariff equivalents in agriculture in a given importing country are identical for imports originating from all countries.

The policy scenarios simulated in this section encompass the removal of both tariff and non-tariff barriers faced by LDCs in Quad countries' markets. Since LDCs benefit from existing non-reciprocal preferential trading agreements (as a result of GSP or other trade arrangements), the protection data available in GTAP5 was modified with original data from the UNCTAD TRAINS data-base in order to account for effective preference margins. For each Quad country, 1998 MFN and preferential tariff data at the HS6 line have been aggregated into our GTAP sectoral definitions using world trade weights from the UN Comtrade data-base.[5] Ratios between preferential and MFN tariffs, so obtained, have been used to compute LDC preference margins granted by Quad countries in each sector. In turn, these margins have been used to update protection data (both tariffs and agricultural tariff equivalents) available in the GTAP5 database. The protection data so derived is reported, for each Quad country, in annex tables IV.A.3-IV.A.6, while annex table IV.A.7 reports the countries' export patterns in the base year.

The study simulates the effects of two policy scenarios:[6]

i) Elimination of all tariff and non tariff barriers against LDCs in the European Union. This experiment is aimed at simulating the effects of the EBA initiative.[7]

ii) Elimination of tariff and non tariff barriers faced by LDCs in all Quad markets.

For each case, we look at the impact of the policy reform on each countries' welfare, and on their sectoral trade and production patterns.[8] Welfare changes are further decomposed into their allocative and terms of trade components.

C. Results

1. European Union everything but arms

As expected, all beneficiary countries gain from EBA while the donor (European Union) stands to lose slightly from non-reciprocal liberalization (table IV.1). Although third countries may lose or gain, the world as a whole gains from EBA. In absolute terms (equivalent variation in $millions) the largest gain accrues to the rest of Sub-Saharan Africa. It is also important to note that this gain outweighs the highest loss (that suffered by the European Union). Uganda is the beneficiary country whose gains are estimated to be the lowest. Still in absolute terms, among third countries, the rest of developed countries and the Middle East are the regions that gain the most, while the United States,

Japan and the rest of Asia are those that suffer the largest losses. In percentage terms, the big gainers are small Sub-Saharan African countries (Malawi, United Republic of Tanzania and Zambia), whose gains are above one percentage point, while Bangladesh and Uganda enjoy the smallest gains. Welfare changes for both donor (European Union) and third countries, appear to be almost negligible (always well below one tenth of percentage point) when defined in percentage terms. However, the loss for the rest of Africa is almost that of the European Union when evaluated as a percentage.

Table IV.1. EU EBA: Welfare changes

		Values (US$ million)		
Region	**Percentages**	**Total[a]**	**Terms of trade effect**	**Allocative effects**
Australia-New Zealand	0.001	2.346	2.364	0.86
China	-0.001	-7.518	-2.362	-1.531
Rest of Developed	0.006	28.874	22.774	7.013
Japan	-0.001	-33.621	-24.431	-1.04
Rest of Asia	-0.002	-31.977	-14.158	-11.875
Bangladesh	0.02	8.194	3.629	3.342
Canada	0	1.03	1.1	0.503
USA	0	-31.86	-18.669	2.213
Latin America and Carribean	0	-6.568	-3.152	1.614
European Union	-0.004	-249.677	-248.916	0.503
Eastern Europe and FSU	0	2.348	3.183	1.057
Middle East	0.004	23.966	20.896	3.831
Rest of Africa	-0.003	-9.975	-4.994	-4.471
Malawi	1.137	29.588	25.717	6.042
Tanzania	1.052	67.145	39.229	11.235
Zambia	0.791	30.189	37.623	-5.514
Uganda	0.03	1.982	1.307	-0.058
Rest of Sub-Saharan Africa	0.184	263.323	156.635	75.182
19 ROW	-0.001	-1.413	-0.193	0.307
Total		86.376	-2.418	89.213

a Terms of trade and allocative effects do not match the total welfare changes (see note 9, section IV).

Overall, the policy simulation generates an expected improvement in allocative efficiency.[9] This is especially evident for LDCs. A shift toward agricultural goods and food production (the most protected items in the European Union) induces a better exploitation of comparative advantages in these countries. The largest source welfare changes for individual countries, however, are due to the terms of trade component. All beneficiary countries benefit from increased prices for their exports to the European Union market. Symmetrically, the European Union loses due to higher import prices from LDCs. As for third countries, Japan and the United States suffer from a negative terms of trade effect, while the rest of developed countries and the Middle East enjoy a gain associated with an improvement in the terms of trade of comparable magnitude. The terms of trade changes for other third countries are quite limited or almost negligible. This is because beneficiary LDCs are too small in world markets for EBA to cause a significant change in terms of trade for third countries.

The beneficiary countries, which receive the strongest terms of trade improvement, are small economies like Malawi, United Republic of Tanzania and Zambia (table IV.2). This is partly explained by the Armington structure of preferences in the GTAP model, which assumes that a product is different if it is produced in different countries. Any trade shock will then be reflected to a greater extent in price changes for small countries, whose supply is necessarily more rigid. However, in the simulations performed in this analysis, trade shocks are far from being equally strong for all beneficiary countries. In particular, the improvement in the terms of trade for a small economy like Uganda is very limited. In general the change in the terms of trade of both the European Union and third countries is small, much lower than one tenth of percentage point. As already pointed out, the reason is that the economies of the beneficiary LDCs are too small to substantially alter international prices.

In percentage terms the export increase is the highest for Malawi, United Republic of Tanzania and Zambia (table IV.2.). The largest increase in export values in absolute terms among beneficiary countries is observed for the rest of Sub-Saharan Africa (figure IV.1). Export changes in percentage terms are negligible for all other countries.

Table IV.2. EU EBA: Aggregate trade data

Region	Percentage changes	
	Exports	Terms of trade
Australia-New Zealand	0.001	0.003
China	0	-0.001
Rest of Developed	0.001	0.01
Japan	0.004	-0.005
Rest of Asia	-0.001	-0.002
Bangladesh	0.034	0.067
Canada	-0.002	0.001
United States	0.001	-0.002
Latin America and Carribean	0	-0.001
European Union	0.013	-0.01
Eastern Europe and FSU	0	0.001
Middle East	0.002	0.009
Rest of Africa	-0.012	-0.005
Malawi	4.425	4.029
United Republic of Tanzania	6.279	3.485
Zambia	2.899	3.479
Uganda	0.3	0.197
Rest of Sub-Saharan Africa	0.596	0.374
19 ROW	-0.011	-0.002

Source: UNCTAD.

As for the sectoral composition of exports, as expected, given the original bias of European Union protection against agricultural LDC exports, it is in agriculture where the largest changes are predicted to occur (figures IV.2a and IV.2b). The sectors where the most substantial export gains for LDCs are expected are paddy rice, processed rice, cereals and sugar. The sugar industry is a special case because of the complex policies adopted by the European Union. LDC exports gains are also expected in meat and meat products and dairy products. The general equilibrium nature of the model also allows for the possibility to identify sectors where export reductions in LDCs may occur (annex tables IV.B.1 - IV.B.2). These are predominantly in the manufacturing industries, although in relative terms these reductions in exports are fairly small relative to the size of the increase. This relative shift in exports is most pronounced in the case of Bangladesh, where the increase in exports of food products directly offsets losses in exports of wearing apparel. This result reinforces the selective bias against exports that is inherent within discriminatory arrangements.

There are a number of interesting insights from the bilateral matrix of trade effects (annex table IV.B.3). First, total imports are given as the sum of the rows, and this value for the European Union is positive. As expected the EBA proposals generate an expansion of exports from LDCs and a contraction of exports from other regions. However, the net effect of the change is an increase in total exports to the European Union. The increase in exports displaces, to some degree, exports

Figure IV.1. EU EBA: Changes in LDC total exports

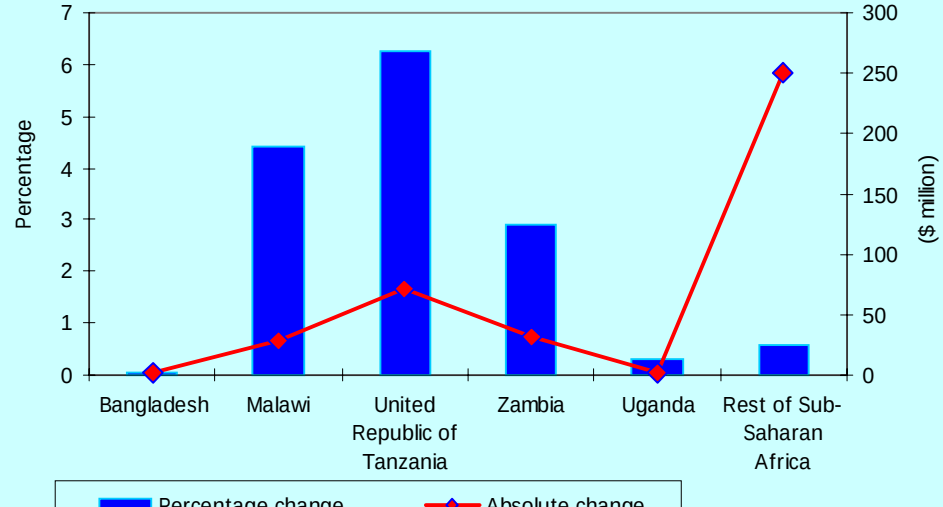
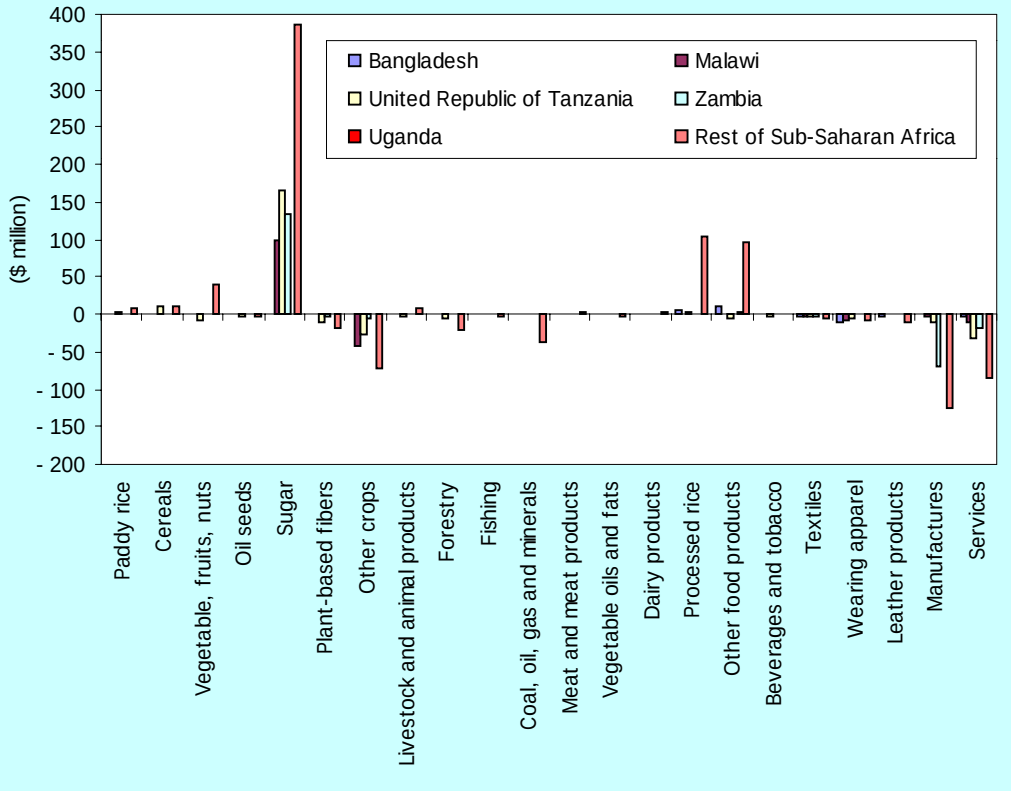


Figure IV.2a. EU EBA: Changes in LDC sectoral exports by region



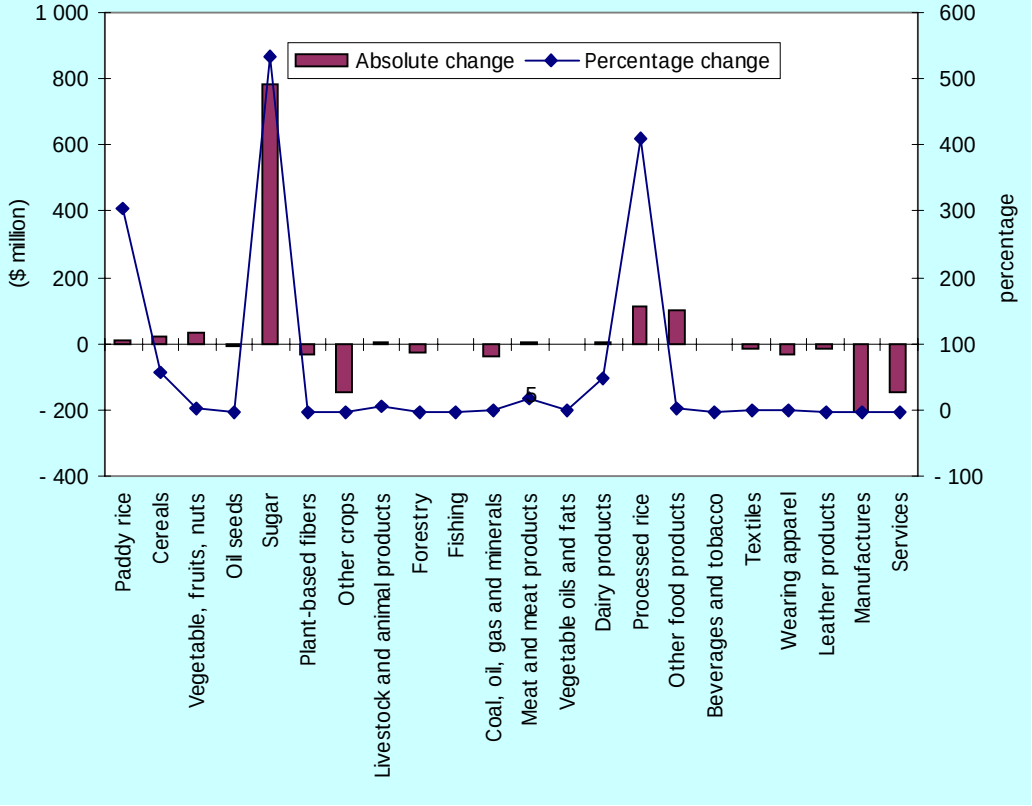
from developing Asia and from the rest of Africa as defined in the country aggregations. Another interesting point is the increase in total imports in each of the LDCs. This result highlights the integrated nature of international trade, where the increased market access is exploited through an increase in imports and a more efficient allocation of resources.

In terms of changes in the composition of value added, the bulk of sectoral adjustment occur in few sectors, basically paddy and processed rice, cereals and sugar in the LDCs (annex table IV.B.4). In particular, the value added in the sugar industry seems to expand significantly. The resources needed for larger production volumes in that sector appear to be mostly drawn from textiles and apparel industries and from other manufacturing, sectors that shrink as a result of EBA. The surge in export values, however, is in general much larger than the increase in value added in all sectors that expand in beneficiary LDCs. This is particularly evident in sugar and even more in rice. In the sectors that are most sensitive to preferential liberalization domestic demand in LDCs will be satisfied to a greater extent by imports from abroad.

The European Union is experiencing a value added contraction concentrated in paddy rice, sugar, and processed rice. The contraction of output in these agricultural sectors is associated with more resources available for production in other sectors. The simulation shows that it will be agriculture (plant based fibers and other crops) and manufactures, rather than services, to expand in the European Union as a result of EBA.

Thus, the CGE results suggest that the impact of EBA on European Union agricultural sector will be limited. With regard to domestic production, the only European Union sectors that would most

Figure IV.2b. EU EBA: Changes in LDC sectoral exports



likely see a significant reduction in their output are paddy and processed rice, and sugar (with cereals, vegetables, fruits and food products witnessing a small decrease in output).[10] It is to be noted however that since our CGE model is static, our simulations assumed no transitionary period for the sensitive sectors identified by the European Union (rice, sugar and bananas). Consequently, our results only reflect the situation at the end of the transition period.

2. Quad everything but arms

This policy simulation refers to a hypothetical situation in which all Quad countries import all goods from LDCs quota-free and duty-free. It is as if the EBA initiative would be adopted together by all Quad countries. The general results in this section are qualitatively and quantitatively different from the previous section. The reason is that the patterns of protection and trade are quite different across Quad countries, as shown in section I. In particular, the European Union and Japan have a protection structure that favours agriculture over manufacturing, whereas the United States and Canada protect textiles, clothing and footwear relative to agriculture.

In terms of welfare effects, preferential liberalization from all Quad countries brings about an overall efficiency gain at the world level (table IV.3). The world gain appears nearly ten times higher with respect to that obtained when the European Union is the only donor country. Gains for individual beneficiary countries are at least twice as large when compared with those obtained with EU-EBA, except for Zambia. For some countries, gains are much higher. In particular, the welfare increase for Bangladesh is quite striking. In this case, Bangladesh is the country that is expected to gain the most both in absolute ($1,200 million) and percentage (3 per cent) terms. The gains accruing to Bangladesh

Table IV.3. Quad EBA: Welfare changes

Region	Percentages	Values (US$ million) Total[a]	Terms of trade effect	Allocative effects
Australia-New Zealand	-0.002	-8.287	-5.077	2.508
China	-0.007	-56.354	-9.993	-24.233
Rest of Developed	0.013	60.731	72.773	-5.281
Japan	-0.005	-191.293	-347.151	174.854
Rest of Asia	-0.006	-96.38	-26.792	-31.855
Bangladesh	2.93	1182.149	328.736	711.795
Canada	-0.002	-10.216	-22.123	12.941
USA	-0.008	-562.097	-392.76	-41.746
Latin America and Carribean	-0.006	-100.633	-43.508	-21.352
EU	-0.008	-546.563	-517.396	23.256
Eastern Europe and FSU	-0.004	-28.281	-11.075	-8.382
Middle East	0.009	51.999	52.427	4.893
Rest of Africa	0	-1.122	3.882	-1.852
Malawi	2.181	56.76	49.851	10.441
Tanzania	2.331	148.772	93.696	18.803
Zambia	0.835	31.882	40.043	-6.079
Uganda	0.351	22.862	15.604	0.97
Rest of Sub-Saharan Africa	0.742	1060.188	688.323	233.98
19 ROW	-0.002	-4.036	2.195	-1.762
Total		1010.081	-28.345	1051.899

a Terms of trade and allocative effects do not match the total welfare changes (see note 9, section IV).

only, are almost of the same magnitude as those of all Sub-Saharan LDCs. The LDC with the smallest percentage gains is still Uganda. However, the gains to this country are now ten times higher compared with the case of EU-EBA. The rest of Sub-Saharan Africa region also enjoys substantial welfare gains, at least three times bigger than those achieved when the European Union is the only donor country. The only country that does not benefit much from the other Quad countries joining the European Union is Zambia. All donor countries slightly lose from non-reciprocal PTA and the losses are negligible in percentage terms (always below 0.01 percentage points). Losses are of a similar magnitude across Quad countries, except for the European Union, which is now higher, compared with the first simulation. As for third countries, when liberalization comes from all Quad countries the losses to the rest of Africa appear to be reduced to one fourth of those with EU-EBA, while the losses to Latin America rise substantially. Again, the rest of the developed countries and the Middle East are the gainers among the third countries.

For almost all the countries, gains and losses are mainly associated with terms of trade changes, with the exception of Bangladesh. In this case the allocative effects are strong enough to dominate the terms of trade effect. Liberalization from the United States and Canada (especially in textiles and apparel) seems to induce a substantial and beneficial reallocation of resources toward those sectors.

As for trade data (table IV.4), we still note that the percentage improvement in terms of trade is still stronger for small Sub-Saharan LDCs (e.g. Malawi, United Republic of Tanzania). Compared with just the European Union implementing the proposal, however, the terms of trade improvement for Bangladesh is much stronger. Export values for Malawi and United Republic of Tanzania increase in percentage terms. Also Bangladesh managed to increase substantially its export revenues, translating into a very substantial rise in export values in absolute terms (figure IV.3). Looking at the direction of trade flows (annex table IV.C.3) LDCs can be devided into three groups: those whose exports increase is mainly directed towards the European Union (United Republic of Tanzania, Zambia, Uganda), those that export increasingly toward the United States at the expense of the European Union (Bangladesh) and those that export more to Japan, reducing sales to the European Union (rest of Sub-Saharan Africa).

Table IV.4. Quad EBA: Aggregate trade data

Region	Percentage changes	
	Exports	Terms of trade
Australia-New Zealand	-0.012	-0.006
China	-0.013	-0.002
Rest of Developed	0.002	0.032
Japan	0.159	-0.069
Rest of Asia	-0.013	-0.003
Bangladesh	7.583	6.204
Canada	-0.026	-0.007
United States	0.054	-0.045
Latin America and Carribean	-0.02	-0.016
European Union	0.012	-0.021
Eastern Europe and FSU	0.017	-0.004
Middle East	0.008	0.023
Rest of Africa	0.017	0.004
Malawi	8.362	7.942
United Republic of Tanzania	10.671	8.577
Zambia	3.078	3.708
Uganda	2.137	2.193
Rest of Sub-Saharan Africa	2.244	1.657
19 ROW	-0.003	0

Source: UNCTAD.

The sectoral data is provided in annex tables IV.C.1 and IV.C.2. Again, in almost all beneficiary LDCs there is a strong jump in the export of paddy and processed rice, cereals and sugar, as in the case of EBA. Dairy products and other food exports from LDCs increase as a consequence of the removal of the high protection in Japan. It is also noted that in Bangladesh and the rest of Sub-Saharan Africa, there is a remarkable increase in wearing apparel exports, most probably associated with the removal of trade barriers in the United States. The 30 per cent increase in Bangladesh wearing apparel exports and the 88 per cent increase in other food exports from the rest of Sub-Saharan Africa account for very high flows in absolute value. They explain a large part of the Bangladesh export increase to the United States and of the rise in exports from the rest of Sub-Saharan Africa to Japan.

Comparing the changes occurring in the sectoral composition of exports values with those relating to value added (figures IV.4a and IV.4b), it is again possible to see that, in general, the adjustment occurring in value added in sensitive sectors is much smaller than that occurring in exports. In particular, in almost all LDCs, the supply of rice does not seem to adjust sufficiently to keep up with the export boost. Necessarily, domestic demand is satisfied by increased exports. The same phenomenon does not seem to apply to manufacturing sectors, like apparel. In Bangladesh, apparel value added rises significantly. The extent of production

Figure IV.3. Quad EBA: Changes in LDC total exports

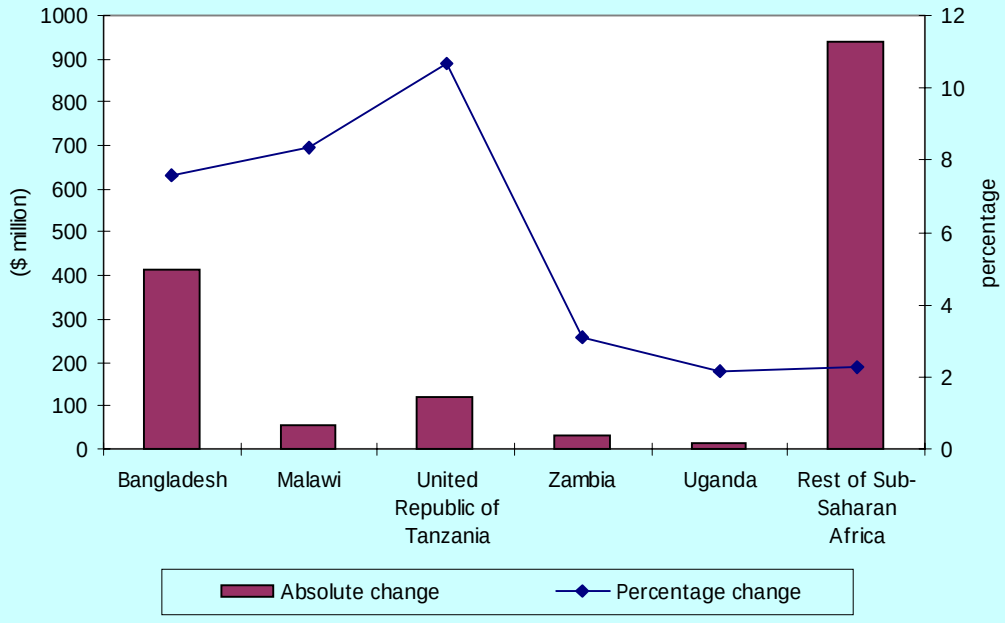
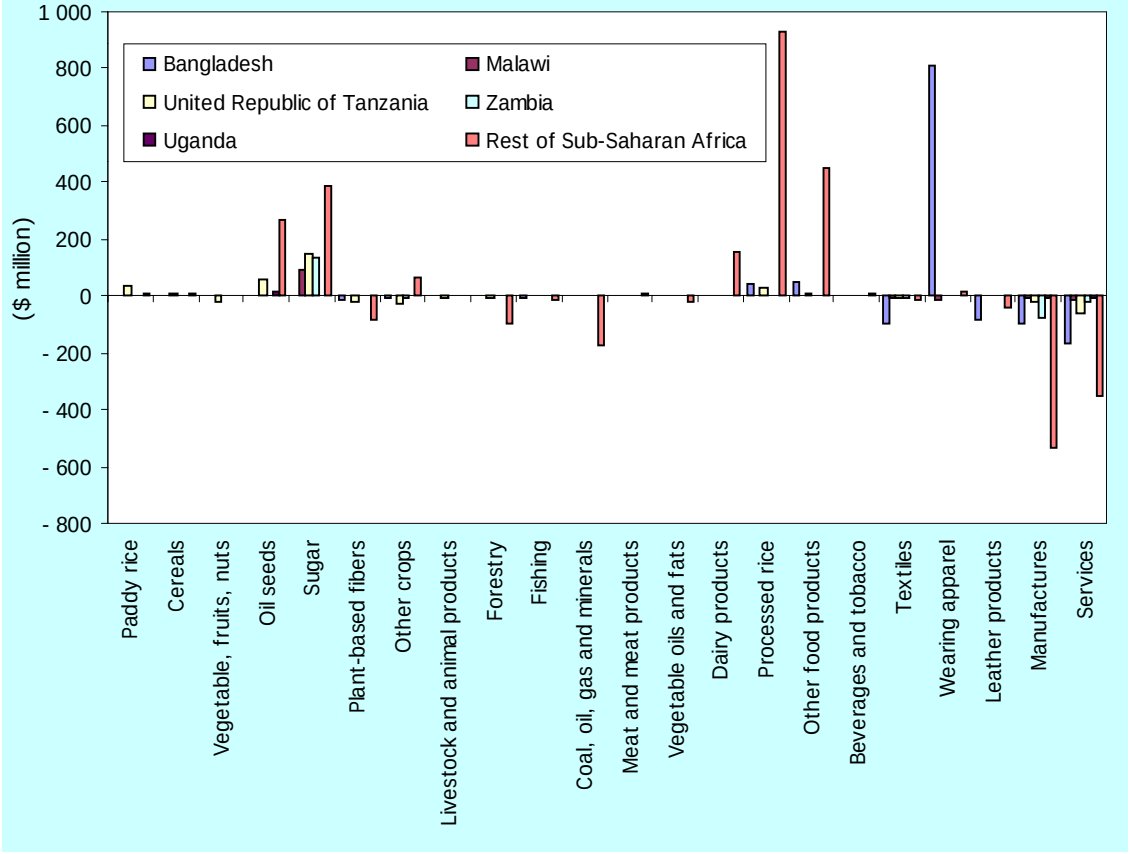


Figure IV.4a. Quad EBA: Changes in LDC sectoral exports by region



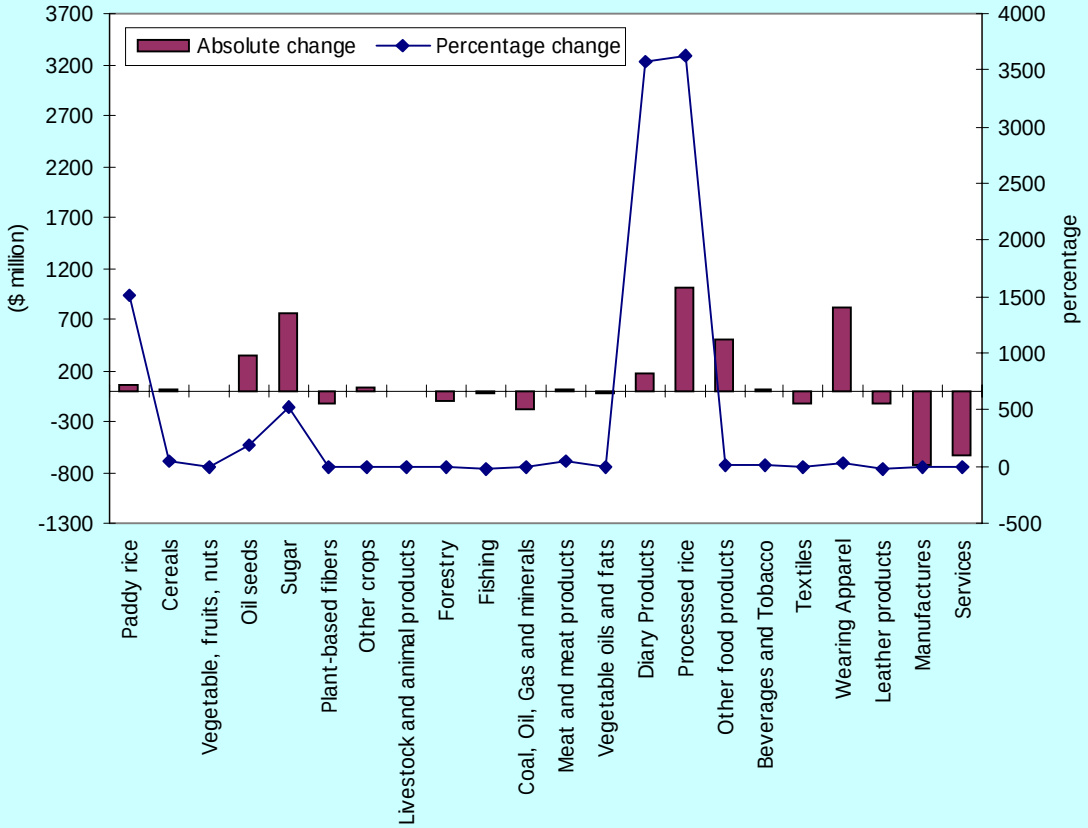
redirection associated with non-reciprocal PTA thus seems related to supply rigidities. In agriculture, these rigidities are in all likelihood stronger.

Looking at the adjustment in donor countries, the European Union still face the biggest contraction in value added in paddy rice, processed rice and sugar (about –3 per cent in each sector) (annex table IV.C.4). The adjustment dynamics in Japan are quite similar, although the reduction in sugar value added is very limited. In the United States and Canada, adjustment seems much easier, as sectoral reallocations are of a limited magnitude and spread across a higher number of sectors. Only processed rice in the United States undergoes contraction comparable to those expected for the European Union (-2.2 per cent).

D. Conclusions

Non-reciprocal preferential trade liberalization targeted to LDCs is likely to entail non-negligible gains to beneficiary countries coupled with negligible losses for donor and third countries. Overall, gains at the world level are expected due to improved allocation efficiency. When the only EBA implenting country is the European Union, the gains accrue mainly to Sub-Saharan African countries and are mostly explained by improved terms of trade for beneficiaries. In this case, the key sectors are paddy and processed rice and sugar. Increased exports from LDCs are directed almost exclusively to the European Union. When liberalization occurs in all Quad countries, the benefits from duty- and quota-free market access increase more than proportionally. Overall, welfare gains are ten times higher com-

Figure IV.4b. Quad EBA: Changes in LDC sectoral exports



pared with only the European Union as the donor country, all beneficiary countries gain notably more, and countries like Bangladesh and the Rest of Sub-Saharan Africa enjoy disproportionately higher gains. Again, gains to individual countries are mostly due to improved terms of trade, with the exception of Bangladesh, for which allocative gains are prevailing. In this case, in addition to rice and sugar, new key sectors can be identified: wearing apparel, other food and dairy products. Increased export flows from some LDCs are still mainly directed to the European Union under this scenario. For other beneficiary countries, however, the rise in exports is basically targeted to the United States market (Bangladesh), for other (rest of Sub-Saharan Africa) to Japan. Liberalization from all Quad countries will entail more than proportional gains compared with EBA because this will allow for a much better exploitation of the different comparative advantages of different countries. Some Quad countries are relatively more protected in agriculture and food products (European Union, Japan) others in textiles and apparel (the United States). Some LDCs have comparative advantages in agriculture and food (Sub-Saharan African LDCs) others in apparel (Bangladesh). Differences in the patterns of protection across Quad countries, coupled with differences in comparative advantages across LDCs explain why a joint action from all Quad countries can be much more effective than isolated initiatives of single donor countries.

Some caveats to our analysis must be taken into account. First, the analysis is static and assumes that all the markets clear. This has several implications. Being static, the analysis neglects important aspects of trade reform related to technology transfer, learning by doing and knowledge accumulation. In this respect, the model likely underestimates the impact of non-reciprocal PTAs on benefici-

ary countries. Being a long-run one, the analysis performed by the model neglects adjustment issues. All prices are flexible, and factors are always fully employed. In the short-run, these issues may instead be relevant. Moreover, structural rigidities in LDCs may even be a persistent phenomenon (supply constraints, export capacity constraints). This feature of the model leads to a possible exaggeration of the effects of trade reforms. In particular, perfectly flexible prices, coupled with Armington differentiation tend to produce very strong terms of trade effects.

Second, the model neglects institutional aspects that crucially affect the impact of preferential trade liberalization. Due to complex administrative procedures, some LDCs may not be able to take full advantage from the liberalization initiatives. In this sense, the role of rules of origins are of great relevance. Simulations have been performed under the assumption that a product exported from a given country, can always benefit from preferential treatment in destination countries, irrespective of the share of value added originating in the exporting country. Since the model allows for trade in intermediates, some of the trade flows captured in the simulations are aimed at shifting value added from non-beneficiary to beneficiary countries in order to benefit from preferential margins. In reality, non-reciprocal preferential liberalization is generally accompanied by rules of origin that specify minimum value added shares performed in the exporting country as a condition for preferential treatment. Neglecting the role of rules of origin leads to an overestimation of the effects of the liberalization initiatives considered.

NOTES

[1] See Hertel (1997), pp. 54-60, for a description of the equations governing the international allocation of investment in GTAP.

[2] Further details on GTAP databases are found on the GTAP website: http://www.agecon.purdue.edu/gtap.

[3] See Hertel (1997), pp. 87-109, for a description of protection data availble in GTAP2 database, their sources and construction. See on http://www.agecon.purdue.edu/gtap further details on the GTAP4 database.

[4] The procedure followed to obtain quota tariff equivalents is described in Tsigas, Ch. 13.2 of the Documentation on GTAP4 available at the website http://www.agecon.purdue.edu/gtap.

[5] For each Quad country, the lowest preferential tariffs available to LDCs have been selected to compute preference margins. Weights have been constructed using world trade flows instead of bilateral flows to avoid excessive underestimation of preferential tariffs. Especially in Japan, agricultural imports from LDCs are very low because trade barriers are nearly prohibitive. Using bilateral trade flows in such cases would lead to a substantial underestimation of the protection faced by LDCs.

[6] The policy experiments performed are analogous to one found in Ianchovichina, Mattoo and Olarreaga (2000). Results, though, cannot be closely compared due to the following reasons: First, beneficiary countries in this case, all LDCs, whereas in Ianchovichina, Mattoo and Olarreaga (2000) preferential market access is targeted to Sub-Saharan African countries only. In particular, from the simulations it is possible to evaluate the effects of preferential trade liberalization on the Bangladesh economy, the most important non-African LDC and the only one for which it is possible to have disaggregated data in GTAP5 database. Second, the analysis is conducted at a higher level of disaggregation, both sectoral and geographical. Finally, data in the simulations refer to 1997, whereas in Ianchovichina, Mattoo and Olarreaga (2000) the base year is 1995 (GTAP4 database).

[7] Only the end results of the EBA initiative are simulated, without taking into account the transitory period provided for liberalization in some sensitive sectors.

[8] The welfare indicator used in the simulations takes into account changes in real income and in relative prices. Technically, welfare changes correspond to equivalent income variations, e.g. to the monetary transfers needed to induce ex-post utility levels at ex-ante relative prices.

[9] The effects on welfare can be decomposed into allocative effect (associated with the allocation of primary factors), terms of trade effect and intermediate good prices effect.

[10] The same conclusion is advanced by the European Commission study (EC, 2001).

Annex tables IV.A
Model aggregations and benchmark data

Annex table IV.A.1. Regional aggregations

	New regions	Original GTAP regions
1	Australia-New Zealand	Australia, Heard & McDonald Islands, Norfolk Island, New Zealand
2	China	China
3	Rest of Developed	Hong Kong (China), EFTA
4	Japan	Japan
5	Rest of Asia	Republic of Korea, Indonesia, East Timor, Malaysia, Philippines, Singapore, Thailand, Viet Nam, Taiwan Province of China, India, Sri Lanka, Bhutan, Maldives, Nepal, Pakistan.
6	Bangladesh	Bangladesh
7	Canada	Canada
8	United States	United States of America, American Samoa, Guam, Northern Mariana Islands, Puerto Rico, United States Virgin Islands.
9	Latin America and the Carribean	Mexico, Central America and the Caribbean: Antigua & Barbuda, Aruba, Bahamas, Barbados, Belize, British Virgin Islands, Cayman Islands, Costa Rica, Cuba, Dominica, Dominican Republic, El Salvador, Grenada, Guatemala, Haiti, Honduras, Jamaica, Montserrat, Netherlands Antilles, Nicaragua, Panama, Saint Christopher and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Trinidad and Tobago, Turks and Caicos Isl. Colombia, Peru, Venezuela, Bolivia, Ecuador, Argentina, Brazil, Chile, Uruguay, Guyana, Paraguay, Suriname.
10	European Union	European Union
11	Eastern Europe and FSU	Hungary, Poland, Bulgaria, Czech Republic, Romania, Slovakia, Slovenia, Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine, Uzbekistan.
12	Middle East	Turkey, Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates, Yemen, Yemen Democratic.
13	Rest of Africa	Morocco, Western Sahara, Algeria, Egypt, Libyan Arab Jamahiriya, Tunisia, Botswana, Lesotho, Namibia, South Africa, Swaziland, Angola, Mauritius, Zimbabwe.
14	Malawi	Malawi
15	United Republic of Tanzania	United Republic of Tanzania
16	Zambia	Zambia
17	Uganda	Uganda
18	Rest of Sub-Saharan Africa	Rest of Sub-Saharan Africa: Benin, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Madagascar, Mali, Mauritania, Mayotte, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, Sudan, Togo, Zaire.
19	ROW (Rest of the World)	Rest of World: Afghanistan, Albania, Andorra, Bermuda, Bosnia and Herzegovina, British Indian Ocean Territories, Brunei, Myanmar, Cambodia, Christmas Island, Cocos (Keeling) Islands, Cook Islands, Croatia, Cyprus, Falkland Islands, Faroe Islands, Fiji, French Polynesia, Gibraltar, Greenland, Johnston Island, Kiribati, Lao People's Democratic Republic, Macao, Macedonia, Malta, Marshall Islands, FS Micronesia, Mongolia, Nauru, New Caledonia, Niue, Democratic People's Republic of Korea, Pacific Islands, Palau, Papua New Guinea, Pitcairn Islands, Saint Helena, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu, Wake Island, Wallis and Futura Isl., Western Samoa, Federal Republic of Yugoslavia, French Guiana, Guadeloupe, Vatican Holy See, Martinique, Monaco, Reunion, Saint Pierre and Miquelon, San Marino, Mozambique.

Annex table IV.A.2. Sectoral aggregations

Original GTAP5 sectors	New sectors
Paddy rice	Paddy rice
Wheat	Wheat and other cereals
Cereal grains nec	Wheat and other cereals
Vegetables, fruit, nuts	Vegetable, fruit, nuts
Oil seeds	Oil seeds
Sugar cane, sugar beet	Sugar
Plant-based fibers	Plant-based fibers
Crops nec	Other crops
Cattle,sheep,goats,horses	Animals and animal products
Animal products nec	Animals and animal products
Raw milk	Animals and animal products
Wool, silk-worm cocoons	Animals and animal products
Forestry	Forestry
Fishing	Fishing
Coal	Coal, Oil, Gas and minerals
Oil	Coal, Oil, Gas and minerals
Gas	Coal, Oil, Gas and minerals
Minerals nec	Coal, Oil, Gas and minerals
Meat: cattle,sheep,goats,horse	Meat and meat products
Meat products nec	Meat and meat products
Vegetable oils and fats	Vegetable oils and fats
Dairy products	Dairy products
Processed rice	Processed rice
Sugar	Sugar
Food products nec	Food prod. nec
Beverages and tobacco products	Beverages and tobacco products
Textiles	Textiles
Wearing apparel	Wearing apparel
Leather products	Leather products
Wood products	Other manufactures
Paper products, publishing	Other manufactures
Petroleum, coal products	Other manufactures
Chemical,rubber,plastic prods	Other manufactures
Mineral products nec	Other manufactures
Ferrous metals	Other manufactures
Metals nec	Other manufactures
Metal products	Other manufactures
Motor vehicles and parts	Other manufactures
Transport equipment nec	Other manufactures
Electronic equipment	Other manufactures
Machinery and equipment nec	Other manufactures
Manufactures nec	Other manufactures
Electricity	Services
Gas manufacture, distribution	Services
Water	Services
Construction	Services
Trade	Services
Transport nec	Services
Sea transport	Services
Air transport	Services
Communication	Services
Financial services nec	Services
Insurance	Services
Business services nec	Services
Recreation and other services	Services
PubAdmin/Defence/Health/ Education	Services
Dwellings	Services

Annex table IV.A.3. Canada: Patterns of protection, by sector and country

Sectors	Australia-New Zealand	China	Other developed	Japan	Rest of Asia	Bangladesh	Canada	United States	Latin America and Caribbean	European Union	Eastern Europe and FSU	Middle East	North Africa	Malawi	United Republic of Tanzania	Zambia	Uganda	Rest of Sub-Saharan Africa	19 ROW
Paddy rice	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cereals	43.8	32.3	37.3	8.9	32.0	8.9	0	13.1	13.8	11.7	26.5	39.3	42.5	8.9	8.9	8.9	9.0	13.3	32.3
Vegetable, fruits, nuts	1.9	1.9	1.9	1.9	1.9	1.0	0	1.9	1.9	1.9	1.9	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.9
Oil seeds	0.0	0.0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Sugar	4.9	4.8	4.7	4.9	4.1	0.3	0	4.9	4.9	4.8	4.9	4.2	4.9	0.3	0.0	0.3	0.3	0.3	4.3
Plant-based fibers	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other crops	2.4	2.4	2.4	2.4	2.4	0.5	0	2.4	2.4	2.4	2.4	2.4	2.4	0.5	0.5	0.5	0.5	0.5	2.4
Livestock and animal products	17.9	17.0	15.9	17.7	17.8	5.5	0	15.5	13.8	16.7	9.4	3.2	7.8	15.5	14.8	13.9	2.6	5.2	8.6
Forestry	2.4	1.8	0.0	0.0	0.2	0.0	0	0.0	0.3	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fishing	0.2	0.1	0.0	0.1	0.0	0.0	0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coal, oil, gas and minerals	0.1	0.0	0.0	0.1	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Meat and meat products	17.4	67.1	65.6	46.8	51.9	41.8	0	47.6	44.3	63.9	53.7	25.9	33.1	58.1	56.2	56.5	27.7	55.9	51.1
Vegetable oils and fats	8.6	8.6	8.6	8.6	8.6	6.0	0	8.6	8.6	8.6	8.6	8.6	8.6	6.0	6.0	6.0	6.0	6.0	8.6
Dairy products	214.8	214.8	214.8	214.8	214.8	212.9	0	214.8	214.8	214.8	214.8	214.8	214.8	212.9	212.9	212.9	212.9	212.9	214.8
Processed rice	0.7	0.7	0.7	0.7	0.7	0.0	0	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.7
Other food products	14.1	14.1	14.1	14.1	14.1	11.3	0	14.1	14.1	14.1	14.1	14.1	14.1	11.3	11.3	11.3	11.3	11.3	14.1
Beverages and tobacco	62.5	62.5	62.5	62.5	62.5	49.4	0	62.5	62.5	62.5	62.5	62.5	62.5	49.4	49.4	49.4	49.4	49.4	62.5
Textiles	8.3	18.4	13.7	13.9	5.3	1.5	0	0.0	1.0	13.0	14.5	6.5	4.9	0.0	0.0	0.0	0.0	0.0	12.3
Wearing apparel	11.7	20.5	11.2	19.5	10.9	6.4	0	0.0	2.7	20.7	21.9	6.8	10.0	0.0	0.0	0.0	0.0	4.7	1.7
Leather products	2.2	16.6	9.9	6.4	8.1	3.6	0	0.0	1.2	14.1	11.6	11.0	3.0	0.0	2.4	0.0	0.0	3.9	6.0
Manufactures	1.5	4.8	2.9	4.0	1.3	0.2	0	0.0	0.2	3.2	3.2	1.3	0.6	0.0	0.0	0.1	0.1	0.0	0.0
Services	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source : GTAP database and UNCTAD-TRAINS database.

Annex table IV.A.4. European Union: Patterns of protection, by sector and country

Sectors	Australia-New Zealand	China	Other developed	Japan	Rest of Asia	Bangladesh	Canada	United States	Latin America and Caribbean	European Union	Eastern Europe and FSU	Middle East	North Africa	Malawi	United Republic of Tanzania	Zambia	Uganda	Rest of Sub-Saharan Africa	19 ROW
Paddy rice	64.9	64.9	64.9	64.9	64.9	61.6	64.9	64.9	64.9	0	64.9	64.9	64.9	61.6	61.6	61.6	61.6	61.6	64.9
Cereals	60.2	45.1	48.8	45.1	48.6	37.0	59.4	46.1	46.1	0	47.0	51.1	50.9	37.0	37.1	37.1	37.1	37.1	47.2
Vegetable, fruits, nuts	14.5	14.5	14.5	14.5	14.5	2.3	14.5	14.5	14.5	0	14.5	14.5	14.5	2.3	2.3	2.3	2.3	2.3	14.5
Oil seeds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sugar	76.4	76.7	76.4	76.4	81.3	80.4	77.0	76.4	76.8	0	76.6	101.4	76.5	75.0	103.0	75.0	85.0	76.5	76.9
Plant-based fibers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other crops	3.1	3.1	3.1	3.1	3.1	0.0	3.1	3.1	3.1	0	3.1	3.1	3.1	0.0	0.0	0.0	0.0	0.0	3.1
Livestock and animal products	1.9	7.4	7.6	32.5	7.1	5.4	12.8	18.3	5.8	0	16.4	13.4	6.4	3.5	4.5	2.8	3.4	3.8	10.9
Forestry	2.4	0.8	0.0	0.2	1.4	0.0	0.6	1.0	3.5	0	0.0	0.1	1.7	0.0	0.0	0.0	0.0	0.0	0.6
Fishing	3.4	0.3	0.0	0.0	0.3	0.0	8.0	7.3	4.3	0	6.3	1.0	11.3	0.0	0.0	0.0	0.0	0.0	10.7
Coal, oil, gas and minerals	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Meat and meat products	83.7	32.0	34.7	61.1	35.4	13.0	84.9	65.2	65.3	0	38.1	45.7	75.1	9.7	10.2	9.1	19.2	14.2	54.5
Vegetable oils and fats	11.4	11.4	11.4	11.4	11.4	0.2	11.4	11.4	11.4	0	11.4	11.4	11.4	0.2	0.2	0.2	0.2	0.2	11.4
Dairy products	87.7	87.7	87.7	87.7	87.7	51.0	87.7	87.7	87.7	0	87.7	87.7	87.7	51.2	51.2	51.2	51.2	51.2	87.7
Processed rice	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	0	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4
Other food products	28.8	28.8	28.8	28.8	28.8	2.0	28.8	28.8	28.8	0	28.8	28.8	28.8	2.5	2.1	2.1	2.1	2.1	28.8
Beverages and tobacco	8.3	8.3	8.3	8.3	8.3	1.2	8.3	8.3	8.3	0	8.3	8.3	8.3	1.2	1.2	1.2	1.2	1.2	8.3
Textiles	1.3	10.1	3.6	9.1	8.3	0.0	8.6	9.1	5.5	0	5.6	2.0	6.0	0.0	0.0	0.0	0.0	0.0	10.3
Wearing apparel	7.9	11.1	8.8	12.6	8.4	0.0	11.3	11.5	5.6	0	7.4	1.4	9.5	0.0	0.0	0.0	0.0	0.0	11.7
Leather products	0.3	9.5	0.2	6.3	3.4	0.0	6.7	4.6	2.0	0	4.9	1.5	2.3	0.0	0.0	0.0	0.0	0.0	7.1
Manufactures	2.3	5.4	0.1	5.2	2.2	0.0	2.0	2.9	1.4	0	1.9	1.2	1.6	0.0	0.0	0.0	0.0	0.0	3.2
Services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source : GTAP database and UNCTAD-TRAINS database.

Annex table IV.A.5. Japan: Patterns of protection, by sector and country

Sectors	Australia-New Zealand	China	Other developed	Japan	Rest of Asia	Bangladesh	Canada	United States	Latin America and Caribbean	European Union	Eastern Europe and FSU	Middle East	North Africa	Malawi	United Republic of Tanzania	Zambia	Uganda	Rest of Sub-Saharan Africa	19 ROW
Paddy rice	409.0	409.0	409.0	0	409.0	338.5	409.0	409.0	409.0	409.0	409.0	409.0	409.0	338.5	338.5	338.5	338.5	338.5	409.0
Cereals	224.3	30.8	141.3	0	86.2	20.2	207.2	65.4	21.1	20.4	108.9	153.2	54.4	20.2	20.4	20.2	20.6	31.4	117.5
Vegetable, fruits, nuts	44.9	44.9	44.9	0	44.9	33.1	44.9	44.9	44.9	44.9	44.9	44.9	44.9	33.1	33.1	33.1	33.1	33.1	44.9
Oil seeds	76.4	76.4	76.4	0	76.4	76.4	76.4	76.4	76.4	76.4	76.4	76.4	76.4	76.4	76.4	76.4	76.4	76.4	76.4
Sugar	116.1	107.1	116.1	0	115.1	110.6	116.1	116.1	115.6	111.8	116.1	97.1	115.9	116.1	1.9	95.7	116.1	92.0	114.3
Plant0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other crops	22.1	22.1	22.1	0	22.1	19.1	22.1	22.1	22.1	22.1	22.1	22.1	22.1	19.1	19.1	19.1	19.1	19.1	22.1
Livestock and animal products	32.5	11.8	24.3	0	6.2	7.1	13.3	43.0	13.0	46.3	11.9	53.9	38.0	5.0	14.6	36.9	17.4	23.4	19.0
Forestry	0.1	0.9	0.0	0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fishing	2.3	5.3	0.0	0	3.0	3.9	4.4	5.7	3.8	3.4	4.9	2.7	0.0	0.0	0.0	0.0	0.0	0.0	4.6
Coal, oil, gas and minerals	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Meat and meat products	37.7	58.0	52.2	0	58.1	46.6	52.0	43.9	56.9	57.4	52.3	48.7	45.0	53.0	52.9	52.4	40.9	53.0	47.2
Vegetable oils and fats	6.6	6.6	6.6	0	6.6	4.0	6.6	6.6	6.6	6.6	6.6	6.6	6.6	4.0	4.0	4.0	4.0	4.0	6.6
Dairy products	287.0	287.0	287.0	0	287.0	287.0	287.0	287.0	287.0	287.0	287.0	287.0	287.0	287.0	287.0	287.0	287.0	287.0	287.0
Processed rice	409.0	409.0	409.0	0	409.0	338.5	409.0	409.0	409.0	409.0	409.0	409.0	409.0	338.5	338.5	338.5	338.5	338.5	409.0
Other food products	38.3	38.3	38.3	0	38.3	30.5	38.3	38.3	38.3	38.3	38.3	38.3	38.3	30.5	30.5	30.5	30.5	30.5	38.3
Beverages and tobacco	16.2	16.2	16.2	0	16.2	13.4	16.2	16.2	16.2	16.2	16.2	16.2	16.2	13.4	13.4	13.4	13.4	13.4	16.2
Textiles	0.6	4.8	2.5	0	1.2	0.0	10.3	10.0	3.3	2.4	1.7	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wearing apparel	12.6	5.4	1.9	0	4.0	0.0	13.5	11.3	4.4	0.0	6.7	6.3	5.6	0.0	0.0	0.0	0.0	0.0	8.3
Leather products	6.4	7.4	0.0	0	4.0	0.1	12.7	12.4	11.7	3.2	16.6	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Manufactures	0.6	0.0	0.0	0	0.2	0.0	1.2	0.6	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Services	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source : GTAP database and UNCTAD-TRAINS database.

Annex table IV.A.6. United States: Patterns of protection, by sector and country

Sectors	Australia-New Zealand	China	Other developed	Japan	Rest of Asia	Bangladesh	Canada	United States	Latin America and Caribbean	European Union	Eastern Europe and FSU	Middle East	North Africa	Malawi	United Republic of Tanzania	Zambia	Uganda	Rest of Sub-Saharan Africa	19 ROW
Paddy rice	0.0	4.9	4.9	4.9	4.9	0.0	4.9	0.0	4.9	4.9	4.9	4.9	4.9	0.0	0.0	0.0	0.0	0.0	4.9
Cereals	0.9	1.4	1.6	0.6	1.3	0.0	1.5	0.0	0.6	0.6	0.7	1.8	1.8	0.0	0.0	0.0	0.0	0.0	1.4
Vegetable, fruits, nuts	4.7	4.7	4.7	4.7	4.7	0.7	4.7	0.0	4.7	4.7	4.7	4.7	4.7	0.7	0.7	0.7	0.7	0.7	4.7
Oil seeds	17.7	17.7	17.7	17.7	17.7	13.9	17.7	0.0	17.7	17.7	17.7	17.7	17.7	13.9	13.9	17.7	13.9	13.9	17.7
Sugar	53.4	53.4	53.4	53.4	52.6	13.0	51.5	0.0	53.4	51.9	53.4	45.6	53.4	13.6	0.4	11.2	13.6	13.5	53.1
Plant-based fibers	9.7	9.7	9.7	9.7	9.7	9.7	9.7	0.0	9.7	9.7	9.7	9.7	9.7	9.7	9.7	0.0	0.0	9.7	9.7
Other crops	21.5	21.5	21.5	21.5	21.5	16.2	21.5	0.0	21.5	21.5	21.5	21.5	21.5	16.2	16.2	16.2	16.2	16.2	21.5
Livestock and animal products	0.8	0.6	0.7	1.0	0.6	0.0	0.9	0.0	0.9	0.9	0.5	0.5	0.6	0.0	0.0	0.0	0.0	0.0	0.5
Forestry	0.3	1.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fishing	0.7	0.2	0.3	0.7	0.2	0.0	0.0	0.0	0.2	0.9	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.3
Coal, oil, gas and minerals	0.3	0.7	0.3	0.4	0.3	0.0	0.0	0.0	0.2	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.6
Meat and meat products	5.2	3.7	3.9	4.6	4.5	1.8	4.5	0.0	4.3	3.8	3.8	4.7	4.7	1.6	1.7	1.6	2.0	1.7	3.9
Vegetable oils and fats	4.3	4.3	4.3	4.3	4.3	0.0	4.3	0.0	4.3	4.3	4.3	4.3	4.3	0.0	0.0	0.0	0.0	0.0	4.3
Dairy products	42.5	42.5	42.5	42.5	42.5	26.4	42.5	0.0	42.5	42.5	42.5	42.5	42.5	26.4	26.4	26.4	26.4	26.4	42.5
Processed rice	5.3	5.3	5.3	5.3	5.3	0.0	5.3	0.0	5.3	5.3	5.3	5.3	5.3	0.0	0.0	0.0	0.0	0.0	5.3
Other food products	11.4	11.4	11.4	11.4	11.4	5.5	11.4	0.0	11.4	11.4	11.4	11.4	11.4	5.5	5.5	5.5	5.5	5.5	11.4
Beverages and tobacco	3.0	3.0	3.0	3.0	3.0	0.4	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.4	0.4	0.4	0.4	0.4	3.0
Textiles	8.7	8.7	11.9	10.8	11.3	11.7	0.0	0.0	6.7	9.7	10.9	12.2	10.8	6.2	14.7	6.5	12.0	8.4	12.5
Wearing apparel	9.1	11.3	12.7	11.5	14.3	12.3	0.0	0.0	8.4	12.4	14.8	17.8	12.7	12.4	14.3	6.5	12.0	8.4	14.8
Leather products	4.9	15.5	10.4	10.6	14.6	9.4	0.0	0.0	6.2	8.1	7.4	11.0	4.8	12.0	14.0	14.2	20.9	11.2	5.2
Manufactures	1.7	2.6	2.6	2.4	1.2	0.0	0.0	0.0	0.3	2.6	1.6	3.4	1.8	0.0	0.1	0.0	0.0	0.0	3.5
Services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source : GTAP database and UNCTAD-TRAINS database.

Annex table IV.A.7. Total exports by country and sector, 1997

($ Millions)

Sectors	Australia-New Zealand	China	Other developed	Japan	Rest of Asia	Bangladesh	Canada	United States	Latin America and Caribbean	European Union	Eastern Europe and FSU	Middle East	North Africa	Malawi	United Republic of Tanzania	Zambia	Uganda	Rest of Sub-Saharan Africa	19 ROW	Total	LDCs
Paddy rice	26.8	97.9	0.4	0.6	387.5	0.0	0.7	331.5	189.3	184.5	4.7	2.0	5.6	0.1	0.8	0.0	0.0	2.2	5.8	1 240.5	3.1
Cereals	2 452.6	952.0	6.6	0.9	92.3	0.0	4 220.8	10 603.8	3 302.9	7 695.1	1 041.1	239.4	389.9	0.9	11.5	1.1	1.5	26.2	65.1	31 103.7	41.2
Vegetable, fruits, nuts	1 211.7	1 283.7	19.2	96.3	2 304.6	6.3	738.7	5 053.4	8 182.1	17 454.7	1 033.4	2 683.2	1 519.6	4.4	79.3	7.7	10.8	722.8	453.5	42 865.6	831.4
Oil seeds	175.6	293.7	7.2	2.2	350.6	0.0	1 339.6	7 776.0	2 986.0	1 587.6	762.5	72.0	77.1	4.3	11.9	2.6	2.3	163.3	122.2	15 737.0	184.5
Sugar	635.0	144.0	31.4	6.3	1 517.8	0.3	95.6	79.1	3 969.2	3 249.3	565.5	49.4	847.1	19.5	13.5	24.6	0.3	89.1	162.8	11 499.7	147.2
Plant-based fibers	958.8	4.1	24.0	4.8	581.6	89.8	0.2	2 805.3	623.3	519.1	2 062.5	508.2	310.0	5.9	133.7	10.3	18.6	1 189.5	39.7	9 889.5	1 447.9
Other crops	307.6	1 237.4	158.4	140.9	4 890.6	32.3	552.1	3 030.4	11 702.7	8 715.3	393.6	1 082.7	1 002.2	430.2	234.9	30.1	444.8	4 067.0	492.4	38 945.8	5 239.3
Livestock and animal products	3 461.5	1 553.2	229.4	120.7	1 069.4	7.8	1 831.4	2 940.6	1 057.6	8 897.2	1 417.9	482.2	413.6	0.6	14.9	1.7	8.9	109.3	155.2	23 773.2	143.2
Forestry	544.1	134.2	120.6	27.8	1 502.7	1.9	167.0	2 060.6	437.2	1 510.0	1 655.0	42.3	113.3	0.3	24.9	4.2	1.6	1 299.0	1 000.2	10 646.9	1 332.0
Fishing	461.1	597.9	972.8	98.7	1 479.5	22.2	768.9	587.7	562.9	3 134.2	320.3	56.7	182.2	0.4	4.0	0.4	1.0	89.2	282.5	9 622.7	117.3
Coal, oil, gas and minerals	13 178.7	4 623.8	22 679.6	187.7	18 534.0	0.1	19 568.8	6 539.8	38 234.2	22 179.0	39 728.3	96 400.6	26 178.3	13.3	0.7	15.8	39.0	18 095.9	3 035.5	329 233.3	18 164.9
Meat and meat products	4 659.2	1 284.2	193.2	72.9	1 505.8	8.6	2 000.7	7 814.6	3 831.2	24 272.2	2 269.4	133.6	207.6	0.2	6.6	0.9	0.3	8.7	133.6	48 403.3	25.3
Vegetable oils and fats	93.9	540.6	182.7	55.9	7 697.3	0.2	783.9	3 321.2	7 485.2	9 846.5	678.9	371.4	367.4	0.6	5.8	0.4	0.0	244.6	266.0	31 942.6	251.6
Dairy Products	3 855.0	47.3	522.8	36.9	250.5	0.0	290.1	712.5	540.1	20 847.7	1 120.5	92.5	57.5	0.1	0.1	0.1	0.1	4.4	76.0	28 454.2	4.7
Processed rice	123.8	307.1	1.6	45.4	2 710.4	1.7	1.4	597.9	482.8	716.7	45.5	18.5	58.9	0.7	0.9	0.2	0.3	24.0	18.9	5 156.5	27.7
Other food products	2 417.9	4 355.8	5 438.0	2 014.1	15 316.2	366.6	3 854.0	11 011.5	12 714.2	49 052.8	4 975.9	1 859.7	1 994.9	0.7	93.1	2.6	33.5	2 081.4	1 457.3	119 040.3	2 578.0
Beverages and tobacco	920.0	1 064.2	837.6	573.2	1 042.3	1.8	1 102.2	7 017.4	2 842.5	31 827.0	1 820.6	348.0	316.1	1.8	18.3	0.9	1.2	26.9	274.1	50 036.0	50.9
Textiles	2 176.1	20 660.9	5 867.1	7 582.2	47 211.8	1 011.8	2 118.4	11 485.6	8 192.7	68 426.8	5 452.8	6 807.9	2 564.7	26.1	17.2	37.4	0.8	300.6	1 485.9	191 426.9	1 393.9
Wearing apparel	402.3	26 671.3	7 741.0	1 053.6	23 885.5	2 512.2	1 209.0	6 846.8	11 047.2	37 103.0	7 971.3	5 917.8	5 498.1	25.7	28.0	2.0	0.4	199.2	3 288.0	141 402.2	2 767.5
Leather products	602.7	21 241.2	439.2	315.5	14 258.7	234.4	268.2	2 280.5	5 154.8	26 646.3	2 893.5	392.2	905.8	0.2	3.7	0.7	1.4	274.9	746.6	76 660.3	515.2
Manufactures	28 396.1	131 688.9	111 921.5	414 988.3	483 842.1	372.2	159 748.2	550 019.8	152 644.2	1 579 248.9	129 698.4	59 745.7	31 901.8	9.3	86.7	669.2	24.3	6 323.8	11 226.0	3 852 555.3	7 485.4
Services	20 449.4	20 493.7	51 084.7	63 485.1	114 482.9	768.3	29 290.6	210 357.6	45 761.6	439 611.8	46 556.2	40 817.1	21 562.6	87.1	336.9	263.5	132.4	5 757.8	14 043.2	1 125 342.4	7 346.0
Total	87 510.1	239 277.1	208 478.9	490 910.1	744 914.0	5 438.4	229 950.6	853 273.5	321 944.0	2 362 725.7	252 467.7	218 123.4	96 474.4	632.5	1 127.5	1 076.4	723.6	41 099.8	38 830.3	6 194 977.9	50 098.2

Source : GTAP database.

Annex tables IV.B
EU EBA

Annex table IV.B.1. EU EBA: Changes in sectoral exports

($ Millions)

Sectors	Australia-New Zealand	China	Rest of developed	Japan	Rest of Asia	Bangladesh	Canada	United States	Latin America and Caribbean	European Union	Eastern Europe and FSU	Middle East	Rest of Africa	Malawi	United Republic of Tanzania	Zambia	Uganda	Rest of Sub-Saharan Africa	19 ROW LDCs
Paddy rice	- 0.13	- 0.88	0.00	0.01	- 5.82	0.01	0.00	- 2.08	- 1.41	- 4.79	- 0.01	- 0.02	0.00	0.02	1.88	0.01	0.00	7.49	- 0.06	9.41
Cereals	0.69	- 0.17	- 0.01	0.00	0.03	0.00	- 0.42	0.11	0.30	- 9.93	- 0.45	- 0.17	4.09	0.46	10.61	0.51	0.26	11.04	0.10	22.87
Vegetable, fruits, nuts	0.70	0.95	- 0.02	0.04	0.18	0.48	- 0.15	- 0.45	- 4.17	- 19.03	- 0.73	- 3.14	- 1.53	- 0.40	- 8.56	- 0.44	0.46	41.26	0.61	32.80
Oil seeds	0.07	0.14	0.00	0.00	0.22	0.00	0.63	1.94	1.13	0.98	0.24	0.00	0.15	- 0.42	- 1.42	- 0.50	- 0.01	- 3.79	0.12	- 6.15
Sugar	- 1.14	- 1.51	- 0.26	- 0.10	- 19.76	0.77	- 1.44	- 1.89	- 62.48	- 217.22	- 10.07	- 0.64	- 80.57	97.46	166.04	134.11	1.16	386.03	- 15.27	785.57
Plant-based fibers	3.70	0.01	0.09	0.02	2.91	0.32	0.00	10.66	2.13	2.70	6.83	2.87	2.08	- 0.48	- 10.09	- 1.49	0.00	- 19.69	0.30	- 31.42
Other crops	1.21	5.18	0.74	0.47	17.21	0.03	1.62	10.00	44.24	45.67	2.12	4.05	4.99	- 42.66	- 25.44	- 5.53	- 1.33	- 71.74	2.28	- 146.67
Livestock and animal products	- 1.94	- 0.67	- 0.32	0.00	- 0.15	0.13	- 0.09	- 0.35	- 0.29	1.25	- 1.43	- 0.56	- 0.15	- 0.01	- 1.41	- 0.31	0.47	7.34	- 0.02	6.20
Forestry	0.65	0.24	0.35	0.09	3.28	0.00	0.43	2.62	1.24	4.50	3.59	0.13	0.29	- 0.06	- 4.17	- 0.62	- 0.01	- 22.19	1.89	- 27.05
Fishing	- 0.01	- 0.04	- 0.21	0.00	- 0.06	- 0.21	0.02	- 0.12	0.06	- 1.32	0.04	- 0.03	- 0.02	- 0.07	- 0.80	- 0.06	- 0.01	- 2.76	- 0.04	- 3.92
Coal, oil, gas and minerals	3.03	1.62	4.54	0.06	3.71	0.00	5.09	1.90	11.85	6.65	7.95	11.57	4.97	- 0.27	- 0.09	- 0.18	0.07	- 38.36	0.76	- 38.83
Meat and meat products	- 1.30	- 0.31	- 0.10	- 0.01	- 0.36	0.00	- 0.22	- 1.09	- 1.00	1.21	- 1.02	- 0.04	- 0.07	0.00	0.63	- 0.01	0.31	3.52	- 0.01	4.45
Vegetable oils and fats	- 0.02	- 0.12	0.01	- 0.05	2.00	0.00	- 0.09	- 0.13	- 0.60	4.33	- 0.24	0.00	- 0.12	- 0.07	- 0.54	- 0.07	0.00	- 3.02	- 0.04	- 3.70
Dairy products	- 1.58	- 0.03	- 0.55	- 0.01	- 0.09	0.04	- 0.16	- 0.26	- 0.16	0.63	- 0.73	- 0.04	0.01	0.18	0.11	0.03	0.12	1.72	- 0.03	2.20
Processed rice	- 0.48	- 1.70	- 0.02	- 1.18	- 9.49	6.39	0.00	- 3.83	- 5.72	- 43.01	- 0.96	- 0.14	0.03	- 0.04	3.78	0.31	0.40	103.10	- 0.39	113.94
Other food products	- 0.58	- 1.26	- 8.65	- 0.99	- 6.74	10.94	- 1.00	- 4.29	- 6.48	- 18.15	- 4.38	- 2.29	- 1.12	- 0.07	- 5.95	- 0.26	1.44	96.64	- 1.87	102.75
Beverages and tobacco	- 1.13	- 0.82	- 1.07	- 0.39	- 0.98	- 0.01	- 0.85	- 5.19	- 2.19	27.05	- 1.57	- 0.19	0.45	- 0.30	- 2.62	- 0.16	0.02	0.97	- 0.17	- 2.10
Textiles	0.13	2.27	- 1.11	1.06	6.14	- 2.03	0.02	1.03	0.49	19.84	0.60	- 0.61	1.36	- 3.44	- 1.60	- 3.65	- 0.01	- 5.37	0.40	- 16.11
Wearing apparel	0.04	- 0.27	- 5.26	0.44	5.73	- 10.30	0.21	0.14	4.20	17.81	0.96	- 1.12	1.43	- 7.61	- 5.95	- 0.39	- 0.01	- 7.61	1.35	- 31.86
Leather products	- 0.07	- 0.21	- 0.32	0.03	- 0.43	- 1.67	- 0.01	0.11	0.93	14.12	0.35	0.13	0.87	- 0.05	- 0.87	- 0.13	- 0.02	- 11.57	0.26	- 14.31
Manufactures	- 2.27	- 3.95	- 58.20	4.15	- 19.35	- 1.18	- 12.78	- 33.00	6.11	347.43	- 10.38	- 3.58	46.26	- 1.74	- 10.11	- 68.63	- 0.17	- 126.35	2.25	- 208.18
Services	1.43	1.84	58.24	10.79	11.45	- 1.81	3.22	27.35	9.61	127.49	6.98	- 1.22	3.88	- 9.64	- 30.83	- 18.51	- 0.70	- 84.29	2.81	- 145.77

Annex table IV.B.2. EU EBA: Changes in sectoral exports

(per cent)

Sectors	Australia-New Zealand	China	Rest of developed	Japan	Rest of Asia	Bangladesh	Canada	United States	Latin America and Caribbean	European Union	Eastern Europe and FSU	Middle East	Rest of Africa	Malawi	United Republic of Tanzania	Zambia	Uganda	Rest of Sub-Saharan Africa	19 ROW	LDCs
Paddy rice	- 0.48	- 0.90	- 0.64	1.85	- 1.50	22.75	- 0.47	- 0.63	- 0.75	- 2.59	- 0.23	- 1.03	- 0.04	28.32	222.38	133.11	254.57	347.92	- 1.08	303.78
Cereals	0.03	- 0.02	- 0.10	0.41	0.03	35.12	- 0.01	0.00	0.01	- 0.13	- 0.04	- 0.07	1.05	48.66	92.39	48.29	16.98	42.11	0.16	55.51
Vegetable, fruits, nuts	0.06	0.07	- 0.11	0.04	0.01	7.65	- 0.02	- 0.01	- 0.05	- 0.11	- 0.07	- 0.12	- 0.10	- 9.26	- 10.79	- 5.75	4.25	5.71	0.13	3.94
Oil seeds	0.04	0.05	0.04	0.03	0.06	- 0.36	0.05	0.03	0.04	0.06	0.03	0.00	0.19	- 9.70	- 11.94	- 19.27	- 0.64	- 2.32	0.10	- 3.33
Sugar	- 0.18	- 1.05	- 0.81	- 1.61	- 1.30	284.11	- 1.50	- 2.39	- 1.57	- 6.69	- 1.78	- 1.29	- 9.51	499.60	1 230.99	545.95	429.47	433.24	- 9.38	533.66
Plant-based fibers	0.39	0.21	0.39	0.42	0.50	0.36	0.06	0.38	0.34	0.52	0.33	0.56	0.67	- 8.08	- 7.55	- 14.38	0.01	- 1.66	0.75	- 2.17
Other crops	0.39	0.42	0.47	0.33	0.35	0.10	0.29	0.33	0.38	0.52	0.54	0.37	0.50	- 9.92	- 10.83	- 18.39	- 0.30	- 1.76	0.46	- 2.80
Livestock and animal products	- 0.06	- 0.04	- 0.14	0.00	- 0.01	1.66	- 0.01	- 0.01	- 0.03	0.01	- 0.10	- 0.12	- 0.04	- 2.42	- 9.47	- 18.58	5.27	6.72	- 0.01	4.33
Forestry	0.12	0.18	0.29	0.31	0.22	- 0.15	0.26	0.13	0.28	0.30	0.22	0.30	0.25	- 17.14	- 16.73	- 14.79	- 0.92	- 1.71	0.19	- 2.03
Fishing	0.00	- 0.01	- 0.02	0.00	0.00	- 0.96	0.00	- 0.02	0.01	- 0.04	0.01	- 0.06	- 0.01	- 17.24	- 19.75	- 13.57	- 1.27	- 3.10	- 0.01	- 3.34
Coal, oil, gas and minerals	0.02	0.04	0.02	0.03	0.02	0.38	0.03	0.03	0.03	0.03	0.02	0.01	0.02	- 2.01	- 11.70	- 1.14	0.18	- 0.21	0.03	- 0.21
Meat and meat products	- 0.03	- 0.02	- 0.05	- 0.02	- 0.02	- 0.05	- 0.01	- 0.01	- 0.03	0.01	- 0.05	- 0.03	- 0.03	0.06	9.62	- 1.34	88.75	40.38	- 0.01	17.60
Vegetable oils and fats	- 0.02	- 0.02	0.00	- 0.09	0.03	0.02	- 0.01	0.00	- 0.01	0.04	- 0.04	0.00	- 0.03	- 12.80	- 9.19	- 16.03	0.51	- 1.24	- 0.02	- 1.47
Dairy products	- 0.04	- 0.06	- 0.11	- 0.04	- 0.04	94.10	- 0.06	- 0.04	- 0.03	0.00	- 0.07	- 0.04	0.02	131.86	190.37	51.10	211.52	39.23	- 0.04	46.45
Processed rice	- 0.39	- 0.55	- 1.47	- 2.61	- 0.35	372.45	- 0.30	- 0.64	- 1.18	- 6.00	- 2.11	- 0.75	0.06	- 6.06	434.82	201.55	156.04	428.79	- 2.04	411.02
Other food products	- 0.02	- 0.03	- 0.16	- 0.05	- 0.04	2.99	- 0.03	- 0.04	- 0.05	- 0.04	- 0.09	- 0.12	- 0.06	- 9.11	- 6.39	- 10.03	4.30	4.64	- 0.13	3.99
Beverages and tobacco	- 0.12	- 0.08	- 0.13	- 0.07	- 0.09	- 0.46	- 0.08	- 0.07	- 0.08	0.09	- 0.09	- 0.06	0.14	- 16.91	- 14.29	- 18.35	1.47	3.61	- 0.06	- 4.14
Textiles	0.01	0.01	- 0.02	0.01	0.01	- 0.20	0.00	0.01	0.01	0.03	0.01	- 0.01	0.05	- 13.19	- 9.31	- 9.77	- 0.69	- 1.79	0.03	- 1.16
Wearing apparel	0.01	0.00	- 0.07	0.04	0.02	- 0.41	0.02	0.00	0.04	0.05	0.01	- 0.02	0.03	- 29.60	- 21.23	- 19.33	- 1.96	- 3.82	0.04	- 1.15
Leather products	- 0.01	0.00	- 0.07	0.01	0.00	- 0.71	0.00	0.01	0.02	0.05	0.01	0.03	0.10	- 29.86	- 23.38	- 17.89	- 1.77	- 4.21	0.04	- 2.78
Manufactures	- 0.01	0.00	- 0.05	0.00	0.00	- 0.32	- 0.01	- 0.01	0.00	0.02	- 0.01	- 0.01	0.15	- 18.69	- 11.67	- 10.26	- 0.70	- 2.00	0.02	- 2.78
Services	0.01	0.01	0.11	0.02	0.01	- 0.24	0.01	0.01	0.02	0.03	0.02	0.00	0.02	- 11.06	- 9.15	- 7.03	- 0.53	- 1.46	0.02	- 1.98

Annex table IV.B.3. EU EBA: Changes in bilateral exports

($ Millions)

Exporter/Importer	Australia-New Zealand	China	Rest of developed	Japan	Rest of Asia	Bangladesh	Canada	United States	Latin America and Caribbean	European Union	Eastern Europe and FSU	Middle East	Rest of Africa	Malawi	United Republic of Tanzania	Zambia	Uganda	Rest of Sub-Saharan Africa	19 ROW	Total exports
Australia-New Zealand	-0.6	0.2	-0.3	0.8	3.9	0.6	-0.2	-0.3	- 0.2	-6.6	-0.3	-0.3	-0.7	0.3	2.6	0.2	0.1	2.5	-0.6	0.9
China	-0.3	0	-1.4	-0.8	1.1	0.0	-0.4	-5.3	- 1.5	-15.7	-1.0	-0.6	1.4	0.7	5.9	0.9	0.1	17.7	-0.7	-0.2
Rest of Developed	-0.8	-3.9	-1.5	-3.3	-6.5	0.0	-0.7	-10.8	- 2.5	-52.5	-2.9	-2.5	-0.7	0.4	2.3	0.3	0.1	86.4	-0.9	-0.1
Japan	-0.4	0.9	0.6	0	4.7	0.4	-0.2	-3.3	- 2.0	-16.6	-0.7	0.1	-0.1	4.3	7.3	2.1	0.4	17.4	-0.6	14.2
Rest of Asia	-1.0	-1.7	-1.8	0	0	1.7	-0.7	-9.4	- 2.8	-65.8	-0.3	-0.6	1.9	2.9	17.7	2.8	0.8	42.8	-1.7	-15.2
Bangladesh	-0.1	-0.2	-0.7	-0.6	-0.6	0.0	-0.3	-7.3	- 0.2	12.2	-0.2	-0.5	-0.1	0	0	0.1	0	0.5	-0.1	1.8
Canada	0.0	-0.1	0.1	0.9	0.1	0.3	0	-7.2	- 0.7	-6.8	-0.1	0.1	-0.9	0.9	1.7	0.4	0.1	4.7	0	-6.8
United States	-0.8	1.2	1.1	4.0	7.7	1.0	-6.3	0	- 14.1	-54	-2.5	1.4	-1.9	4.3	14.6	3.1	0.5	43.0	-0.8	1.1
Latin America and Carribean	0.3	0.4	1.1	5.0	2.8	0.3	1.2	26.3	0.5	-60.3	-0.1	-1	-0.1	2.4	4.0	0.5	0.1	13.9	-0.1	-2.5
European Union	6.1	9.6	35.5	26.6	42.9	1.6	7.9	62	14.9	-210.6	22.7	31.5	18.4	13.4	43.7	7.4	2.7	167.5	3.7	307.5
Eastern Europe and FSU	0.0	1.0	0.6	1.1	2.1	0.3	0	1.0	0.4	-13.9	-5.6	0.8	0.2	0.5	2.7	0.2	0.1	5.2	-0.7	-4.1
Middle East	-0.3	-0.4	-0.5	-1.9	1.0	0.2	-0.2	1.6	- 0.5	-7.5	-2.0	-1.5	0.4	0.4	8.9	1.2	0.1	3.7	-0.3	2.7
Rest of Africa	0.1	0.1	0.5	1.0	1.8	0.1	0.1	2.3	0.2	-79.2	0.4	0.3	1.6	23.5	9.1	14.1	0.2	11.2	-0.1	-12.6
Malawi	-0.6	-0.4	-0.9	-5.4	-2.5	-0.2	-0.5	-13	- 2.1	75.2	-4.3	-1.3	-14.1	0	-0.1	-0.3	-0.1	-0.1	-0.7	28.8
United Republic of Tanzania	-1.2	-2.5	-3.7	-13.4	-22.6	-0.4	-1.4	-13.1	- 2.4	145.6	-3.2	-2.4	-3.4	0	0	0	-0.1	-3.8	-0.4	71.5
Zambia	-0.4	-4.3	-0.8	-16.4	-27.9	0.0	-1.7	-10.6	- 4.5	107.1	-1.1	-0.5	-5.7	0	-0.3	0	0	-0.4	-0.3	32.0
Uganda	-0.1	0	-0.2	-0.2	-0.1	0.0	-0.1	-0.4	- 0.1	3.0	-0.1	-0.1	-0.1	0	0.8	-0.2	0	0.0	0	2.2
Rest of Sub-Saharan Africa	-2.2	-10.5	-16.2	-23.8	-38.5	-0.7	-6.3	-67.4	- 12.5	463.3	-12.8	-10.6	-11.6	0.1	4.8	0	-1.7	-1.2	-2.4	250.0
19 ROW	0.4	1.1	0.3	1.2	1.9	0.1	0.1	1.7	0.1	-15.9	0.3	0.1	0.1	0.2	1.2	0	0	2.1	-0.1	-4.9
Total imports	-2.0	-9.4	11.4	-25	-29	5.4	-9.5	-53.4	- 29.9	200.9	-13.9	12.2	-15.3	54.5	126.9	32.5	3.6	413.2	-6.8	666.2
LDC exports	-4.6	-17.9	-22.5	-59.8	-92.2	-1.3	-10.3	-111.8	- 21.8	806.4	-21.7	-15.4	-35	0.1	5.2	-0.4	-1.9	-5	-3.9	386.3

Annex table IV.B.4. EU EBA: Changes value added

(per cent)

Sectors	Australia-New Zealand	China	Rest of developed	Japan	Rest of Asia	Bangladesh	Canada	United States	Latin America and Caribbean	European Union	Eastern Europe and FSU	Middle East	Rest of Africa	Malawi	United Republic of Tanzania	Zambia	Uganda	Rest of Sub-Saharan Africa	19 ROW
Paddy rice	- 0.17	- 0.01	- 0.02	0.00	- 0.02	0.08	- 0.11	- 0.17	-0.04	- 2.44	- 0.02	- 0.01	0.00	0.14	2.16	0.22	0.39	0.89	- 0.01
Cereals	0.01	0.00	- 0.05	0.00	0.00	0.39	- 0.01	0.00	0.00	- 0.04	- 0.01	- 0.01	- 0.03	0.36	0.93	0.32	0.15	0.18	0.00
Vegetable, fruits, nuts	0.01	0.00	- 0.01	0.00	0.01	0.00	- 0.01	0.00	-0.01	- 0.04	- 0.01	- 0.02	- 0.04	0.01	- 2.45	- 1.26	0.03	0.60	0.01
Oil seeds	0.01	0.00	- 0.03	0.04	0.00	- 0.13	0.02	0.01	0.01	0.03	0.01	0.01	0.05	- 4.29	- 1.56	1.10	- 0.03	- 0.18	- 0.01
Sugar	- 0.05	- 0.04	- 0.28	- 0.01	- 0.06	0.11	- 0.53	- 0.02	-0.26	- 2.94	- 0.28	- 0.08	- 1.13	366.44	38.54	249.65	1.38	13.52	- 0.43
Plant-based fibers	0.27	0.03	0.13	0.40	0.06	- 0.15	0.05	0.12	0.10	0.52	0.23	0.27	0.14	- 9.95	- 9.78	- 8.46	- 0.19	- 1.29	0.03
Other crops	0.06	0.04	0.09	0.03	0.08	0.02	0.21	0.09	0.12	0.21	0.17	0.08	0.27	- 9.46	- 3.55	- 0.71	- 0.33	- 1.01	0.05
Livestock and animal products	- 0.02	0.00	- 0.01	0.00	0.00	- 0.01	0.00	0.00	0.00	0.01	- 0.01	- 0.01	- 0.03	3.76	0.09	0.53	0.12	0.25	0.00
Forestry	0.02	0.03	0.04	0.02	0.02	0.01	0.00	0.01	0.01	0.06	0.05	0.02	0.04	- 1.85	0.11	- 0.27	- 0.01	- 0.38	0.05
Fishing	0.00	0.00	- 0.01	0.00	0.00	0.07	0.00	0.00	0.00	0.00	- 0.01	- 0.01	- 0.01	0.36	0.78	0.75	0.01	0.11	0.00
Coal, oil, gas and minerals	0.01	0.00	0.00	0.01	0.01	- 0.04	0.01	0.01	0.01	0.01	0.01	0.00	0.01	- 3.23	- 2.69	- 6.48	- 0.04	- 0.31	0.01
Meat and meat products	- 0.01	0.00	0.00	0.00	0.00	- 0.05	0.00	0.00	0.00	0.01	- 0.01	0.00	0.00	- 0.03	0.66	- 0.11	0.60	0.08	0.00
Vegetable oils and fats	- 0.01	- 0.01	- 0.02	- 0.01	0.00	- 0.05	- 0.01	0.00	0.00	0.01	- 0.02	0.00	- 0.01	- 0.11	- 6.09	- 0.05	- 0.21	- 0.34	0.00
Dairy products	- 0.02	- 0.01	- 0.03	0.00	- 0.01	- 0.04	- 0.01	0.00	0.00	0.01	- 0.01	- 0.01	- 0.01	0.73	- 0.19	- 0.29	0.69	- 0.21	0.00
Processed rice	- 0.13	- 0.01	- 0.07	0.00	- 0.02	0.09	- 0.07	- 0.19	-0.06	- 3.26	- 0.02	- 0.02	0.01	- 0.91	5.75	0.14	1.22	0.95	- 0.01
Other food products	- 0.01	- 0.01	- 0.07	0.00	- 0.01	0.63	- 0.01	0.00	-0.01	- 0.01	- 0.02	- 0.02	- 0.03	0.35	- 0.44	0.07	1.54	0.72	- 0.01
Beverages and tobacco	- 0.02	- 0.01	- 0.04	0.00	- 0.02	- 0.02	- 0.02	- 0.01	-0.01	0.04	- 0.01	- 0.01	0.00	0.35	- 0.34	- 0.03	- 0.01	- 0.09	- 0.01
Textiles	0.00	0.00	- 0.02	0.01	0.01	- 0.25	0.00	0.00	0.00	0.03	0.00	- 0.01	0.04	- 10.29	- 7.45	- 4.98	0.08	- 0.47	0.02
Wearing apparel	0.00	0.00	- 0.06	0.00	0.01	- 0.40	0.01	0.01	0.01	0.03	0.01	- 0.01	0.04	- 13.88	- 4.26	- 1.06	- 0.43	- 0.96	0.02
Leather products	- 0.01	0.00	- 0.05	0.00	0.00	- 0.62	0.00	0.00	0.01	0.05	0.01	0.00	0.02	- 7.85	- 7.95	- 5.12	- 0.69	- 3.06	0.01
Manufactures	0.00	0.00	- 0.04	0.00	0.00	- 0.12	0.00	0.00	0.00	0.02	0.00	- 0.01	0.04	- 4.06	- 1.47	- 8.13	- 0.26	- 0.96	0.00
Services	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.03	- 1.51	- 0.02	- 0.07	0.00

Annex tables IV.C
Quad EBA

Annex table IV.C.1. Quad EBA: Changes in sectoral exports

($ Millions)

Sectors	Australia-New Zealand	China	Rest of developed	Japan	Rest of Asia	Bangladesh	Canada	United States	Latin America and Caribbean	European Union	Eastern Europe and FSU	Middle East	Rest of Africa	Malawi	United Republic of Tanzania	Zambia	Uganda	Rest of Sub-Saharan Africa	19 ROW LDCs
Paddy rice	- 2.02	- 3.80	0.00	0.08	- 4.77	0.00	- 0.01	- 4.25	- 1.58	- 4.45	- 0.03	- 0.05	- 0.02	0.70	39.07	0.56	0.02	6.56	- 0.15	46.91
Cereals	3.73	- 1.92	- 0.01	0.04	0.96	0.00	8.57	12.83	4.66	7.23	- 0.88	- 0.23	14.04	0.41	8.39	0.66	0.34	11.88	0.38	21.68
Vegetable, fruits, nuts	7.49	- 0.23	- 0.02	1.59	5.95	- 0.43	1.46	1.82	1.06	11.35	- 0.48	2.52	- 0.14	- 0.77	- 19.28	- 0.37	2.56	2.77	1.18	- 15.52
Oil seeds	- 9.08	- 10.22	- 0.01	0.05	- 0.75	0.00	- 49.61	- 98.60	- 25.59	- 0.92	- 0.21	- 0.21	- 0.86	- 0.81	58.00	- 0.46	12.31	271.27	- 1.43	340.31
Sugar	- 2.42	- 1.44	- 0.18	- 0.06	- 18.30	0.99	- 1.84	- 1.72	- 44.46	- 193.92	- 9.97	- 0.30	- 74.84	90.91	148.82	134.34	2.06	387.19	- 14.23	764.30
Plant-based fibers	17.91	0.03	0.40	0.22	12.63	- 13.92	0.00	52.96	9.14	9.01	31.31	11.95	7.76	- 0.95	- 21.55	- 1.41	- 0.49	- 84.80	1.16	- 123.12
Other crops	- 0.80	2.21	1.39	2.92	8.85	- 6.30	- 6.09	22.36	- 7.26	124.37	7.14	0.92	11.46	0.29	- 29.86	- 4.47	1.12	65.19	2.62	25.97
Livestock and animal products	1.07	- 1.07	- 0.32	1.86	- 1.76	- 1.43	2.66	1.41	0.00	1.07	- 2.41	- 0.44	- 0.65	- 0.11	- 3.58	0.45	- 0.03	4.32	- 0.09	- 0.38
Forestry	2.68	0.90	1.39	0.36	13.55	- 0.69	1.44	11.00	5.06	16.94	13.84	0.51	0.98	- 0.10	- 8.41	- 0.64	- 0.15	- 94.03	7.96	- 104.03
Fishing	1.04	1.45	0.78	0.45	4.23	- 8.35	0.67	0.76	0.80	4.07	0.49	0.14	0.31	- 0.12	- 1.31	- 0.07	- 0.10	- 10.79	0.42	- 20.74
Coal, oil, gas and minerals	13.18	7.17	13.61	0.29	15.75	- 0.01	22.90	6.80	50.47	18.85	23.84	46.27	15.45	- 0.50	- 0.18	- 0.21	- 0.31	- 172.09	2.58	- 173.29
Meat and meat products	- 4.80	- 1.91	- 0.21	0.52	- 3.70	- 0.22	0.06	- 4.92	1.00	- 2.67	- 2.54	- 0.23	- 0.25	0.11	4.16	0.47	0.33	6.02	- 0.07	10.88
Vegetable oils and fats	- 0.32	- 1.12	0.12	3.37	3.08	- 0.02	0.54	- 1.10	9.21	8.27	- 0.83	- 0.16	- 0.17	- 0.11	- 1.19	- 0.06	0.00	- 20.80	0.04	- 22.17
Dairy products	- 20.47	- 0.07	- 2.07	0.42	- 0.13	0.61	- 0.72	- 7.10	- 0.43	- 3.34	- 3.76	- 0.18	- 0.09	4.70	1.76	0.79	1.95	158.91	- 0.14	168.72
Processed rice	- 23.72	- 6.48	- 0.04	0.27	- 22.79	40.49	- 0.01	- 44.63	- 5.97	- 39.27	- 3.34	- 0.43	0.19	0.35	27.12	4.18	3.16	930.69	- 1.57	1 005.99
Other food products	- 14.80	- 41.90	- 18.54	18.85	- 116.10	50.30	- 11.52	- 41.51	- 29.12	54.94	- 20.95	- 0.41	- 5.41	- 0.02	7.41	0.53	2.88	448.43	- 3.53	509.54
Beverages and tobacco	- 0.58	0.03	- 1.99	3.54	- 0.65	- 0.59	- 0.77	0.98	0.45	26.10	- 2.53	- 0.14	1.24	- 0.28	- 1.33	0.12	0.39	5.79	- 0.18	4.11
Textiles	2.39	94.42	5.40	15.24	149.19	- 94.00	- 3.62	14.01	- 6.47	101.27	8.89	6.60	5.26	- 5.88	- 3.18	- 3.79	- 0.04	- 15.76	3.82	- 122.65
Wearing apparel	- 0.19	- 67.21	- 76.48	3.45	- 150.72	807.21	- 18.50	16.50	- 165.60	74.95	28.62	- 11.78	4.29	- 11.53	2.85	- 0.10	- 0.01	13.68	- 8.78	812.11
Leather products	1.37	9.56	- 0.21	2.43	17.40	- 84.06	0.27	7.25	12.84	45.57	5.03	0.85	1.56	- 0.06	- 1.22	- 0.06	- 0.10	- 41.80	1.48	- 127.31
Manufactures	0.28	- 21.07	- 220.49	614.18	- 72.58	- 98.58	- 36.74	236.51	56.48	- 142.13	- 42.80	- 32.86	43.07	- 2.77	- 20.15	- 74.37	- 2.13	- 531.90	3.26	- 729.89
Services	16.15	9.84	241.63	106.65	48.08	- 169.99	28.12	267.15	64.07	149.47	12.10	- 2.86	- 5.61	- 15.80	- 62.56	- 19.95	- 6.11	- 349.27	3.51	- 623.68

Annex table IV.C.2. Quad EBA: Changes in sectoral exports

(per cent)

Sectors	Australia-New Zealand	China	Rest of developed	Japan	Rest of Asia	Bangladesh	Canada	United States	Latin America and Caribbean	European Union	Eastern Europe and FSU	Middle East	Rest of Africa	Malawi	United Republic of Tanzania	Zambia	Uganda	Rest of Sub-Saharan Africa	19 ROW	LDCs
Paddy rice	- 7.54	- 3.88	- 0.81	13.12	- 1.23	- 4.57	- 0.71	- 1.28	- 0.84	- 2.41	- 0.58	- 2.47	- 0.37	1 226.88	4 616.16	5 446.26	5 474.65	304.52	- 2.62	1 514.27
Cereals	0.15	- 0.20	- 0.18	4.32	1.04	15.12	0.20	0.12	0.14	0.09	- 0.09	- 0.10	3.60	43.29	73.09	62.85	22.75	45.34	0.59	52.64
Vegetable, fruits, nuts	0.62	- 0.02	- 0.10	1.65	0.26	- 6.83	0.20	0.04	0.01	0.07	- 0.05	0.09	- 0.01	- 17.69	- 24.30	- 4.82	23.60	0.38	0.26	- 1.87
Oil seeds	- 5.17	- 3.48	- 0.11	2.22	- 0.21	- 17.68	- 3.70	- 1.27	- 0.86	- 0.06	- 0.03	- 0.29	- 1.12	- 18.70	487.03	- 17.69	531.22	166.10	- 1.17	184.44
Sugar	- 0.38	- 1.00	- 0.57	- 0.96	- 1.21	363.19	- 1.92	- 2.18	- 1.12	- 5.97	- 1.76	- 0.62	- 8.84	465.99	1 103.28	546.88	763.72	434.55	- 8.74	519.21
Plant-based fibers	1.87	0.69	1.68	4.59	2.17	- 15.51	0.04	1.89	1.47	1.74	1.52	2.35	2.50	- 16.05	- 16.12	- 13.64	- 2.63	- 7.13	2.93	- 8.50
Other crops	- 0.26	0.18	0.88	2.07	0.18	- 19.52	- 1.10	0.74	- 0.06	1.43	1.81	0.09	1.14	0.07	- 12.71	- 14.86	0.25	1.60	0.53	0.50
Livestock and animal products	0.03	- 0.07	- 0.14	1.54	- 0.17	- 18.24	0.15	0.05	0.00	0.01	- 0.17	- 0.09	- 0.16	- 17.77	- 24.04	26.96	- 0.36	3.95	- 0.06	- 0.27
Forestry	0.49	0.67	1.15	1.30	0.90	- 35.56	0.86	0.53	1.16	1.12	0.84	1.20	0.87	- 32.48	- 33.79	- 15.25	- 9.23	- 7.24	0.80	- 7.81
Fishing	0.23	0.24	0.08	0.45	0.29	- 37.62	0.09	0.13	0.14	0.13	0.15	0.24	0.17	- 28.96	- 32.55	- 16.40	- 9.85	- 12.09	0.15	- 17.68
Coal, oil, gas and minerals	0.10	0.16	0.06	0.15	0.09	- 20.61	0.12	0.10	0.13	0.09	0.06	0.05	0.06	- 3.72	- 23.62	- 1.30	- 0.79	- 0.95	0.09	- 0.95
Meat and meat products	- 0.10	- 0.15	- 0.11	0.71	- 0.25	- 2.57	0.00	- 0.06	0.03	- 0.01	- 0.11	- 0.17	- 0.12	62.93	63.25	54.37	95.15	69.12	- 0.06	43.06
Vegetable oils and fats	- 0.34	- 0.21	0.06	6.03	0.04	- 12.33	0.07	- 0.03	0.12	0.08	- 0.12	- 0.04	- 0.05	- 18.95	- 20.29	- 15.23	- 0.77	- 8.50	0.01	- 8.81
Dairy products	- 0.53	- 0.15	- 0.40	1.14	- 0.05	1 305.12	- 0.25	- 1.00	- 0.08	- 0.02	- 0.34	- 0.19	- 0.15	3 418.03	3 166.61	1 547.21	3 432.00	3 630.06	- 0.18	3 570.45
Processed rice	- 19.16	- 2.11	- 2.69	0.59	- 0.84	2 362.00	- 0.44	- 7.46	- 1.24	- 5.48	- 7.34	- 2.32	0.33	51.32	3 118.59	2 702.97	1 238.23	3 870.53	- 8.27	3 629.01
Other food products	- 0.61	- 0.96	- 0.34	0.94	- 0.76	13.72	- 0.30	- 0.38	- 0.23	0.11	- 0.42	- 0.02	- 0.27	- 2.33	7.96	20.13	8.60	21.55	- 0.24	19.76
Beverages and tobacco	- 0.06	0.00	- 0.24	0.62	- 0.06	- 32.47	- 0.07	0.01	0.02	0.08	- 0.14	- 0.04	0.39	- 15.46	- 7.26	14.08	32.99	21.56	- 0.07	8.09
Textiles	0.11	0.46	0.09	0.20	0.32	- 9.29	- 0.17	0.12	- 0.08	0.15	0.16	0.10	0.21	- 22.57	- 18.45	- 10.13	- 5.65	- 5.24	0.26	- 8.80
Wearing apparel	- 0.05	- 0.25	- 0.99	0.33	- 0.63	32.13	- 1.53	0.24	- 1.50	0.20	0.36	- 0.20	0.08	- 44.83	10.18	- 4.77	- 2.79	6.87	- 0.27	29.34
Leather products	0.23	0.05	- 0.05	0.77	0.12	- 35.86	0.10	0.32	0.25	0.17	0.17	0.22	0.17	- 41.03	- 32.75	- 8.37	- 7.58	- 15.21	0.20	- 24.71
Manufactures	0.00	- 0.02	- 0.20	0.15	- 0.02	- 26.49	- 0.02	0.04	0.04	- 0.01	- 0.03	- 0.06	0.14	- 29.62	- 23.26	- 11.11	- 8.76	- 8.41	0.03	- 9.75
Services	0.08	0.05	0.47	0.17	0.04	- 22.13	0.10	0.13	0.14	0.03	0.03	- 0.01	- 0.03	- 18.13	- 18.57	- 7.57	- 4.62	- 6.07	0.03	- 8.49

Annex table IV.C.3. Quad EBA: Changes in bilateral exports

($ Millions)

Exporter/Importer	Australia-New Zealand	China	Rest of developed	Japan	Rest of Asia	Bangladesh	Canada	United States	Latin America and Caribbean	European Union	Eastern Europe and FSU	Middle East	Rest of Africa	Malawi	United Republic of Tanzania	Zambia	Uganda	Rest of Sub-Saharan Africa	19 ROW	Total
Australia-New Zealand	- 1.1	2.3	3.2	- 85.0	15.5	24.9	- 1.4	- 4.3	- 0.7	13.8	0.6	2.2	1.2	0.6	5.4	0.2	0.3	10.9	0.5	- 10.8
China	- 1.9	0.0	7.6	- 114.6	- 7.4	120.2	- 5.9	- 167.9	- 12.2	44.3	5.8	2.4	5.7	1.2	11.2	1	0.9	76.5	0.5	- 32.6
Rest of Developed	- 4.5	- 21.1	- 4.7	- 39.5	- 35.2	22.3	- 5.2	- 132.4	- 14.8	- 110.5	- 8.0	-9.9	-1.7	0.6	4.1	0.3	0.7	365.0	-2.5	2.9
Japan	12.4	53.0	47.1	0.0	182.1	45.1	7.0	112.8	14.3	170.9	9.5	29.8	11.5	7.3	13.4	2.4	2.4	73.5	6.7	801.1
Rest of Asia	- 7.1	- 23.3	12.4	- 260.6	- 60.8	‘	- 14.4	- 386.4	- 26.3	74.4	14.0	10.4	12	5.2	36.5	3.2	5	180.3	-0.2	- 107.3
Bangladesh	- 10.2	- 15.1	- 46.7	82.6	- 55.2	0.0	8.5	1 097.6	- 14.5	- 550.0	- 21.0	-43.2	-6.7	0	-0.1	-0.1	-0.1	- 6.5	-4.6	414.6
Canada	0.2	0.7	4.4	- 71.5	3.8	7.8	0.0	- 55.6	- 1.4	17.1	1.9	3.3	1.8	1.6	3.4	0.4	0.8	20.6	0.3	- 60.6
United States	5.7	19.4	35.4	- 259.3	85.6	66.0	- 26.2	0.1	- 21.4	249.6	16.4	50.5	17.9	7.4	28.3	3.4	3.9	184.5	4.5	471.5
Latin America and Carribean	1.3	2.0	9.6	- 98.1	14.6	22.7	2.6	- 238.3	0.5	118.2	10.9	6.4	8.3	4.1	8.2	0.6	0.8	57.9	1.5	- 66.0
European Union	- 17.5	- 19.0	33.8	- 145.8	- 74.3	110.2	- 32.1	- 241.9	- 93.2	- 43.9	0.4	-1.2	28.2	22.5	80.8	8	16.4	652.1	-4.5	279.5
Eastern Europe and FSU	- 0.5	- 1.4	2.0	- 31.8	- 1.3	14.6	- 2.1	- 21.6	- 3.0	63.0	- 4.0	0.8	1.1	0.9	5.2	0.3	0.7	21.0	-1.5	42.2
Middle East	- 1.5	- 2.4	- 0.9	- 12.8	- 4.9	21.5	- 1.8	- 41.4	- 4.2	37.3	- 1.5	-3.7	2.6	0.7	16.7	1.3	0.8	11.7	-0.7	17.2
Rest of Africa	- 1.0	- 1.2	- 0.3	- 22.0	- 8.1	8.2	- 1.8	- 22.6	- 4.1	- 49.5	0.7	-1.8	3.1	39.2	17.1	14.8	1.3	44.8	-0.6	16.4
Malawi	- 1.1	- 0.7	- 1.7	24.1	- 4.8	- 0.1	- 0.5	35.8	- 4.0	43.5	- 8.2	-2.5	-23.4	-0.1	-0.1	-0.4	-0.1	- 0.1	-1.2	54.4
United Republic of Tanzania	- 2.6	- 5.2	- 8.1	155.0	- 50.3	- 0.5	1.5	- 6.5	- 4.9	70.8	- 6.9	-5.2	-7.6	0	0	0	-0.1	- 7.0	-0.8	121.6
Zambia	- 0.4	- 4.6	- 0.9	- 9.6	- 30.4	0.1	- 1.5	- 10.6	- 4.9	105.4	- 1.1	-0.5	-5.9	0.1	-0.1	0	0	- 0.3	-0.4	34.0
Uganda	- 0.5	- 0.3	- 2.0	22.9	- 1.1	0.0	- 0.1	25.5	- 0.4	- 22.9	- 3.7	-0.5	-0.6	0	1	-0.4	0	- 0.1	-0.5	16.1
Rest of Sub-Saharan Africa	- 9.3	- 44.3	- 67.8	1 798.9	- 166.5	0.7	- 10.8	94.0	- 52.9	- 429.1	- 56.9	-45.2	-52.4	0.1	3.4	-0.1	-5.9	- 4.8	-10.4	940.8
19 ROW	0.0	3.7	0.6	- 10.4	2.7	12.9	- 0.5	- 24.4	- 1.5	3.2	0.8	0.1	0.5	0.4	2.2	0	0.2	8.2	-0.3	- 1.6
Total imports	- 39.4	- 57.6	22.7	922.8	- 196.0	795.1	- 84.7	11.7	- 249.7	- 194.3	- 50.3	-7.9	-4.4	92	236.7	34.6	27.9	1 688.3	-14	2 933.3
LDC exports	- 24.1	- 70.2	- 127.2	2 073.9	- 308.3	0.2	- 2.9	1 235.8	- 81.6	- 782.3	- 97.8	-97.1	-96.6	0.1	4.1	-1.0	-6.2	- 18.8	-17.9	1 581.5

Annex table IV.C.4. Quad EBA: Changes in value added

(per cent)

Sectors	Australia-New Zealand	China	Rest of developed	Japan	Rest of Asia	Bangladesh	Canada	United States	Latin America and Caribbean	European Union	Eastern Europe and FSU	Middle East	Rest of Africa	Malawi	United Republic of Tanzania	Zambia	Uganda	Rest of Sub-Saharan Africa	19 ROW
Paddy rice	- 6.31	- 0.02	- 0.05	- 3.11	- 0.06	0.71	- 0.21	- 0.49	-0.05	- 2.23	- 0.06	- 0.03	- 0.04	11.97	31.74	17.66	2.53	6.81	- 0.03
Cereals	0.07	- 0.04	- 0.12	0.44	- 0.03	- 5.50	0.20	0.01	0.01	0.02	- 0.04	- 0.04	0.01	0.43	0.43	0.47	- 0.19	- 0.04	- 0.01
Vegetable, fruits, nuts	0.18	- 0.02	- 0.02	0.17	0.03	- 0.41	0.11	0.03	0.01	0.04	- 0.03	0.01	- 0.03	0.03	- 5.73	- 1.23	0.20	- 0.14	0.01
Oil seeds	- 2.33	- 0.24	- 0.21	- 1.70	- 0.01	- 9.03	- 1.43	- 0.49	-0.12	0.00	- 0.04	- 0.03	0.12	- 6.95	42.86	1.30	24.14	16.59	- 0.09
Sugar	- 0.12	- 0.04	- 0.27	- 0.04	- 0.06	0.41	- 0.65	- 0.10	-0.18	- 2.69	- 0.32	- 0.07	- 1.06	328.70	32.53	249.11	2.33	13.15	- 0.40
Plant-based fibers	1.15	0.24	0.44	5.41	0.23	- 8.40	0.33	0.54	0.37	1.60	1.03	1.19	0.51	- 18.54	- 20.89	- 8.43	- 4.24	- 5.49	0.14
Other crops	- 0.01	0.02	0.22	- 0.33	0.09	- 0.43	- 0.51	- 0.31	-0.01	0.63	0.64	0.07	0.75	- 5.19	- 5.12	- 0.37	- 1.85	- 0.70	0.12
Livestock and animal products	- 0.05	0.00	- 0.03	0.05	- 0.01	- 1.18	0.06	0.00	0.00	0.00	- 0.03	0.00	- 0.04	5.50	- 1.26	1.20	0.10	1.08	0.00
Forestry	0.11	0.11	0.15	0.12	0.08	1.11	0.02	0.06	0.06	0.21	0.21	0.08	0.12	- 0.23	- 0.55	- 0.30	- 0.19	- 1.65	0.19
Fishing	0.02	0.00	0.00	0.02	0.02	1.02	0.01	0.01	0.01	0.02	- 0.01	0.01	0.01	0.67	0.49	1.10	0.07	0.50	0.01
Coal, oil, gas and minerals	0.04	0.02	0.01	0.11	0.04	- 8.54	0.05	0.05	0.05	0.03	0.02	0.02	0.02	- 5.78	- 7.42	- 6.92	- 1.16	- 1.35	0.03
Meat and meat products	- 0.03	- 0.01	- 0.01	0.18	- 0.03	- 3.14	0.03	0.00	0.01	0.00	- 0.03	- 0.02	- 0.03	0.12	2.40	0.22	0.29	- 0.25	0.00
Vegetable oils and fats	- 0.05	- 0.01	- 0.04	0.86	- 0.01	- 4.13	0.12	0.01	0.07	0.04	- 0.06	- 0.02	- 0.06	- 0.12	- 14.02	0.04	- 5.10	- 1.90	0.00
Dairy products	- 0.26	- 0.01	- 0.08	- 0.19	- 0.02	- 3.57	- 0.03	- 0.01	0.00	0.00	- 0.06	- 0.02	- 0.03	10.37	60.23	15.14	11.10	23.77	- 0.01
Processed rice	- 6.61	- 0.03	- 0.22	- 3.31	- 0.10	0.98	- 0.12	- 2.24	-0.06	- 2.96	- 0.08	- 0.05	0.05	4.94	49.26	14.33	8.85	8.08	- 0.05
Other food products	- 0.10	- 0.15	- 0.14	0.01	- 0.19	1.19	- 0.06	- 0.01	-0.02	0.04	- 0.06	0.00	- 0.05	0.65	0.64	0.25	1.90	3.45	- 0.03
Beverages and tobacco	- 0.01	0.00	- 0.06	0.07	- 0.03	0.03	- 0.04	0.01	0.01	0.03	- 0.03	- 0.01	- 0.01	0.85	- 0.06	0.11	0.05	- 0.48	- 0.01
Textiles	0.08	0.11	- 0.07	0.10	0.12	- 1.98	- 0.09	- 0.06	-0.09	0.12	0.08	0.04	0.09	- 17.15	- 15.38	- 5.09	- 1.25	- 1.58	0.05
Wearing apparel	0.02	- 0.10	- 0.60	0.05	- 0.24	21.67	- 0.29	- 0.31	-0.29	0.16	0.16	- 0.11	0.06	- 21.09	- 2.35	- 0.83	- 3.40	- 1.52	- 0.10
Leather products	0.15	0.07	0.13	0.18	0.11	- 30.97	0.06	0.09	0.08	0.14	0.09	0.02	0.02	- 12.57	- 15.32	- 4.82	- 5.35	- 11.60	0.06
Manufactures	0.00	- 0.01	- 0.15	0.07	- 0.01	- 10.99	0.00	0.02	0.02	0.00	- 0.01	- 0.03	0.02	- 6.77	- 7.52	- 8.78	- 3.24	- 4.21	0.00
Services	0.00	0.00	0.05	0.00	0.00	0.56	0.01	0.00	0.00	0.00	0.00	0.00	- 0.01	0.38	- 1.22	- 1.60	- 0.16	- 0.31	0.00

V. SENSITIVE SECTORS AND COUNTRIES

A. Introduction

The aim of this section is to examine the relationship between preferences and trade between LDCs and Quads at a finer level of aggregation for sectors and countries to complement the CGE analysis of the preceding section. Detailed, disaggregated data is important for several reasons. First, high protection in developed countries currently takes the form of "tariff peaks" in narrow product categories, which are tariff levels five times higher than the average. This means that the average tariff for an aggregated sector could be low, whereas the tariff for a product within the category could be quite high. Therefore, preferential liberalization from Quad countries may induce a substantial reshuffling of market shares even within broadly defined product categories, such as clothing. This phenomenon cannot be captured by aggregate CGE analysis.

A second reason why it is important to obtain information at a more detailed level of aggregation is that international specialization frequently occurs within sectors. Horizontal and vertical intra-industry trade accounts for a non-negligible share of total trade even between LDCs and Quad countries. To capture the likely impact of preferential liberalization on different countries within sectors, it is necessary to obtain data at a high level of sectoral disaggregation. Finally, CGE analysis only considers broad country aggregations, both for LDC and non-LDC countries. Information at a finer level of country aggregation permits the identification within each sector, such as which LDC and non-LDC countries will likely be impacted most by liberalization initiatives.

In order to evaluate the extent to which different countries compete in similar (narrowly defined) sectors in Quad markets export similarity indices have been computed. This methodology helps

to identify which are the non-LDC countries that are likely to suffer from more substantial market share losses associated with improved market access for given LDCs. Export similarity indices are computed in the next section between different LDC and non-LDC exporting countries in each Quad market.

Also, for each Quad country, a set of narrowly defined sectors is identified in which the redistribution of market shares following liberalization will be particularly acute. The analysis is undertaken in three steps. First, for each Quad member, a list of product categories (defined at the HS6 level of aggregation) is constructed in which tariff protection is the highest. Then, the top LDC and non-LDC exporters for each of these categories is identified. The second step is to identify, for each Quad member, the list of HS6 product categories in which export intensity from LDCs is the highest and the level of tariff protection within each of them. With these data, a set of product categories can be defined in which both tariff protection and LDC export intensity are relatively high. Not all protection in Quad countries takes the form of ad-valorem tariffs. Specific duties, quantitative restraints, tariff-quotas are still in place especially in agriculture, textiles, clothing and food products. Quite often, this protection is targeted to very narrow product categories. As a consequence, the third step is the construction, for each Quad market of a list of HS6 product categories in which non-tariff protection is present and where export intensity from LDCs is substantial.

B. Export similarity analysis

Which countries are more likely to be displaced from improved market access for LDCs? The CGE results presented in the previous section indicate that much depends on the importing country's characteristics and on the degree of similarity of LDC and non-LDC countries' exports to a given market. The more similar is the export pattern of a given pair of countries, the stronger will be the substitution after liberalization. In CGE analysis, the extent of substitution between exports of different sources is the complex outcome of the interaction between several factors, notably Armington substitution elasticities and the sectoral composition of exports. A limitation of CGE analysis, is that sectors are defined at quite broad levels. This may lead to unsatisfactory evaluations of sectoral export patterns (box V.1). In particular, there may be a bias toward too much export similarity.[1]

Since importing country characteristics are likely to crucially affect the extent to which exports appear to be similar or diverse across exporting countries, different indexes are constructed for each Quad market. In order to maintain a sufficient degree of synthesis in the analysis the aggregate country definitions have been retained. Exports flows at the HS2 level have been aggregated across countries in such a way as to obtain the exports of a representative LDC (African, Asian, Pacific or Caribbean) or non-LDC country (OECD, or non-OECD African, Asian, or Latin American) in each Quad market. Equipped with these newly defined export data, an export similarity index can be constructed to measure the extent to which exports of a given pair of countries can be defined as similar. The index has a value of 1 when the distribution across sectors of a given pair of exporting countries is identical and 0 when the sectoral export distribution is perfectly dissimilar.[2] The higher the value of the index, the more similar the exports for a given pair of exporting countries.

Indices presented in table V.1 and figures V.1-V.4 show that they vary quite substantially across Quad markets. For instance, the similarity of African LDCs and Asian LDCs ranges from 0.04 in Canada and United States to 0.15 in the European Union and 0.51 in Japan. Similar variation is found among LDC and non LDC indices. The similarity index for African LDCs and African non-LDCs,

Box V.1. Partial equilibrium analysis of preferential trade liberalization

Partial equilibrium analysis considers separately the markets in which the policy change is expected to take place.[a] This methodology neglects the interlinkages across other markets including factor markets, but it has certain advantages over general equilibrium analysis. First, it allows for a finer level of disaggregation. Second, the information required to conduct the analysis is much less, since the approach itself assumes away many of the aspects that determine price and output in the real world, such as factor allocations.

In order to assess how preferential trade policy affects the exports of different countries it is often assumed that consumers in the importing country perceive the imports originating from different countries as different goods (Armington assumption). Moreover, for simplicity, most of the existing analyses are carried out under the assumption that the elasticity of substitution across imports from each pair of foreign countries is constant and that the importing country is small (no terms of trade effects). Under these assumptions, for any change in the price (p) of imports from a given country *k*, $dp_k = dt_k p_k$ and the associated change in the imports (M) from other countries is proportional to initial imports. In fact, the change in imports from country *i* (different from *k*) can be written as:

$dM_i = \frac{\partial M_i}{\partial p_k} dp_k = e_i^k \frac{M_i}{(1+t_k)} dt_k$, where e_i^k is the cross-elasticity of good *i* with respect to the price of good *k*.

Since the elasticity of substitution between *i* and *k*,

$s_{i,k} = \frac{\partial (M_i / M_k)}{\partial (p_k / p_i)} \frac{p_k / p_i}{M_i / M_k}$, can be expressed as $s_{i,k} = e_i^k - e_i$, (where e_i is the own demand elasticity of good *i*)

it must be that $e_i^k = e_j^k$ because the elasticity of substitution is constant across all pair of varieties.

It follows that $\frac{dM_i}{dM_j} = \frac{M_i}{M_j}$. This result can be used as a "rule of thumb" to evaluate ex-ante the within-industry redistribution of market shares associated with a preferential tariff reform (see section D of this chapter).

The total change in imports associated with a tariff reduction for product *k*, $dt_k < 0$, can be obtained by summing up the changes of imports from all the exporting countries (ranging from1 to *K*):

$dM = \sum_{i=1}^{K} dM_i = (e_k M_k + \sum_{i=1}^{K} e_i^k M_i) \frac{dt_k}{(1+t_k)}$.

When the elasticity of substitution is constant the change in the total value of imports will be higher the higher are the own demand elasticity, the tariff change, the initial level of imports, the lower the substitution terms and the initial level of competing imports.

When preferential liberalization is targeted to LDCs, the value of M_k is expected to be small, thus implying a limited impact on total imports and a relatively more important role for substitution effects. Given the low share of imports from LDCs, preferential liberalization targeted to these countries will have a small impact on the average import price, and will mostly result in market share reshuffling associated with relative price changes between imported goods.

[a] Partial equilibrium analysis of preferential trade agreements goes back to Viner (1950) (see also Corden (1984) or Vousden (1990) for a review of more recent contributions). Computable partial equilibrium analysis aimed at assessing the effects of GSP or analogous non-reciprocal preferential schemes has been abundant in the past decades. See, for instance, Baldwin and Murray (1977), Sapir and Lundberg (1984), Karsenty and Laird (1987a, 1987b), Pomfret (1986) and McPhee (1989). For a recent computable partial equilibrium analysis on tariff-peak removal against LDCs, see Hoekman, Ng, and Olarreaga (2000).

Figure V.1. European Union: Export similarity analysis, 1999

Figure V.1a. Intra-LDC export similarity index in the European Union market

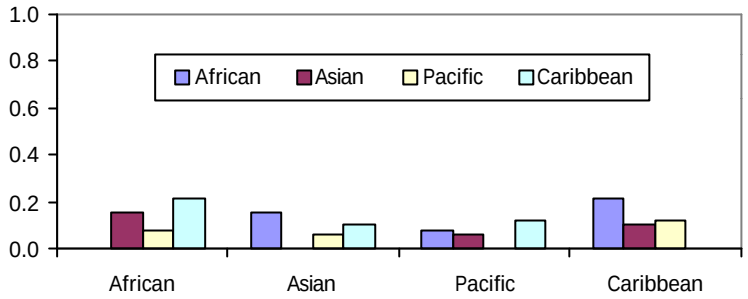
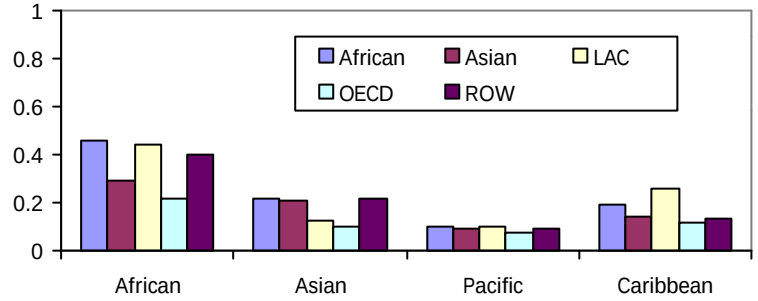


Figure V.1b. Non-LDC export similarity index in the European Union market



ranges from 0.14 in Canada to 0.25 in Japan, 0.46 in European Union and 0.68 in the United States. Several factors may be held accountable for this variance. First, importing countries' structural characteristics and geographical distance. Second, the patterns of protection are different in each Quad market, thus inducing different export incentives to LDCs. Textiles are more protected in the United States and Canada, while agriculture is more protected in the European Union and Japan. Furthermore, especially in the case of Japan, some items may be protected by prohibitive tariffs. Hence, regardless of export capacities in those items, this induces more similarity between various exporters in products with non-prohibitive tariffs. Third, with the exception of Japan, Quad countries have in place more than one preferential scheme. These schemes have different, although sometimes overlapping membership for certain LDCs, and their sectoral coverage can differ substantially. This may also explain why in Japan exports tend to be more similar than in the other Quads.

A further analysis of the data presented in table V.1 shows that in the European Union market, exports from African LDCs are more similar to those from Caribbean LDCs and quite dissimilar with those from Pacific LDCs. Moreover, exports from African LDCs in the European Union are much more similar to exports from non-LDC countries when compared with the exports from other LDCs. The highest similarity is between the exports of African LDCs to the European Union and the exports of African non-LDCs to the European Union, but also the degree of similarity with the exports of Latin American non-LDC countries and the rest of the world is remarkably high. Therefore, the exports to the European Union of African LDCs compete closely with those of African non-LDCs. Therefore, it can be expected, that on average, any market share gain for African LDCs will be associated with potentially significant market share losses for other non-LDCs African countries and with smaller losses for other non-LDC competitors. This evidence is consistent with the findings from the CGE simulations presented in the previous section.

The results change when the United States is the importing market. Across LDCs, the indexes are close to zero, with the exception of exports from Asian LDCs that are very similar to those of Caribbean LDCs.[3] Looking at export similarity with non-LDC regions, it can again be noted that

Figure V.2. United States: Export similarity analysis, 1999

Figure V.2a. Intra-LDC export similarity in the United States market

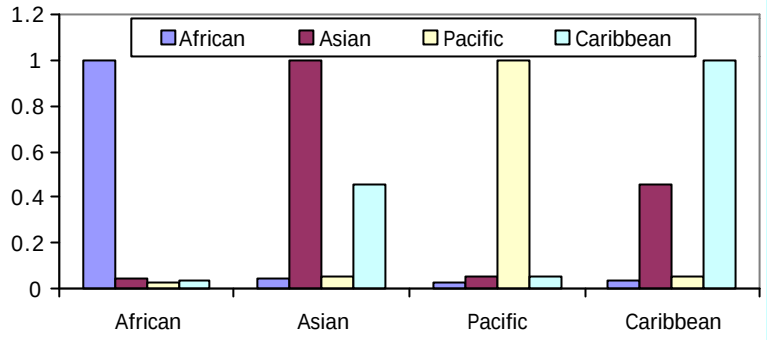
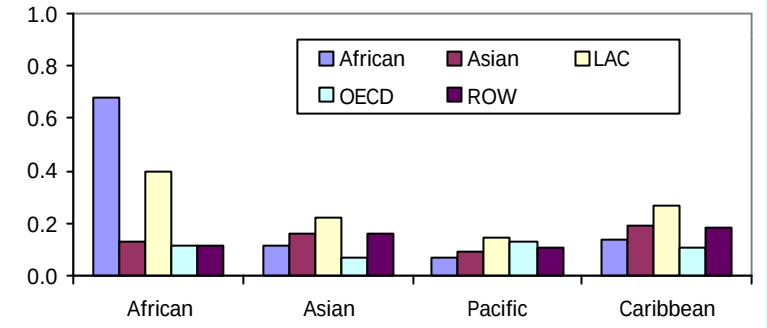


Figure V.2b. Non-LDC export similarity in the United States market



exports from African LDCs are very similar to those of African non-LDCs, also on the United States market and quite similar to those of Latin American countries. Non-reciprocal liberalization in the United States will then most probably induce a redistribution of market shares between African LDCs and non-LDCs. Latin American countries will also be hit by rising market shares of African LDCs. As for Asian LDC exporters to the United States, they might displace exports from Caribbean LDCs (Haiti). In fact, the export similarity index between Asian and Caribbean LDCs is very high. Moreover, Caribbean countries currently benefit from preference margins under the Caribbean Basin Economic Recovery Act that are normally higher than those granted by the United States to LDCs under its GSP scheme. Among the non-LDC competitors, those that are likely to lose market shares as a consequence of increased Asian LDC exports are especially Latin American countries and the Asian non-OECD countries. Again, this evidence is consistent with the findings from the CGE simulations: when duty-free, quota-free concessions are granted by all Quads, losses from Latin American countries rise substantially compared with EBA being implemented by only the European Union.

Results similar to those for the United States were obtained for Canada. In that market, exports from Asian LDCs are very similar to Pacific and Caribbean LDCs, while exports from LDCs are in general very dissimilar with those from non-LDC countries. In other Quad markets, exports from African LDCs tend to be quite similar to export from Latin American countries.

Finally, looking at Japan, the degree of export similarity appears quite high, both, considering LDCs against other LDCs and LDCs against non-LDC countries (the only exception are Caribbean LDCs, that seem to have an export mix dissimilar to that of any other country). This is probably due to the clear-cut structure of Japan's high protection in agriculture and food and very low preference margins (only occurring through GSP schemes), coupled with an import structure structurally biased toward raw materials, primary products and energy. It is also interesting to note that Japan's imports from African LDCs tend to be very similar to those of Asian LDCs, a fact that does not emerge in the other Quad countries. Moreover, Asian LDC exports appear to be similar to those of Asian non-LDCs, while for African LDCs the similarity with other African countries and Latin American coun-

tries is confirmed. The most substantial market share redistribution will probably occur at the expense of non-LDC Asian countries.

C. Disaggregating sectors

1. Ad valorem tariffs

In this section analysis is undertaken at a further level of disaggregation. To begin with, the twenty highest ad-valorem HS6 tariff lines faced by LDCs in each Quad country are identified (tables V.2-V.5).[4] Products in these tariff lines are those for which the reduction in protection arising from non-reciprocal preferential trading agreements is the most pronounced. To evaluate the extent to which sectors can actually be defined as "sensitive", information on protection must be complemented with information on trade flows. In particular, export penetration of LDCs within each tariff line must be computed. The assumption here is that reshuffling of market shares will most probably be more pronounced if LDCs are exporters prior to the granting of preferences. An alternative interpretation, however, is that LDCs may not be exporting because of protection, so that exports are nil simply because tariffs are prohibitive. To distinguish between the two cases, it must be properly assess how the product categories considered are represented in the production pattern of LDCs, the level of protection granted to the sector and the extent to which high protection discourages imports from all sources, not only from LDCs. Together with protection data, data on total imports from each Quad and the share of import originating from LDCs is also reported.

In order to identify which countries are likely to be most affected by preferences the top three LDC and non LDC exporters in each Quad market are identified.

As expected, the highest levels of protection in the European Union and Japan are in agriculture and in textiles, whereas in Canada and the United States the highest level of protection is in apparel. Furthermore, there is a remarkable dispersion in protection even within narrow sectoral aggregations. Considering, for instance, imports into the European

Figure V.3. Canada: Export similarity analysis, 1999

Figure V.3a. Intra-LDC export similarity in the Canadian market

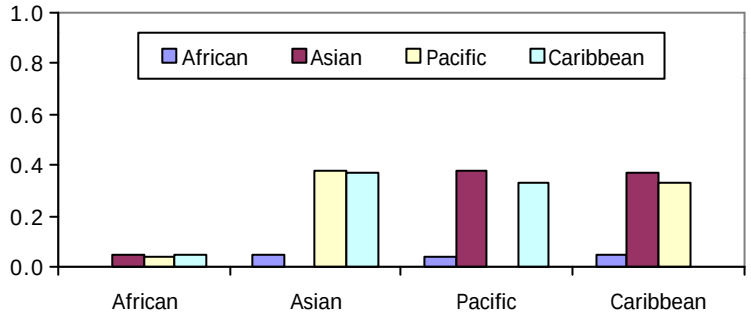
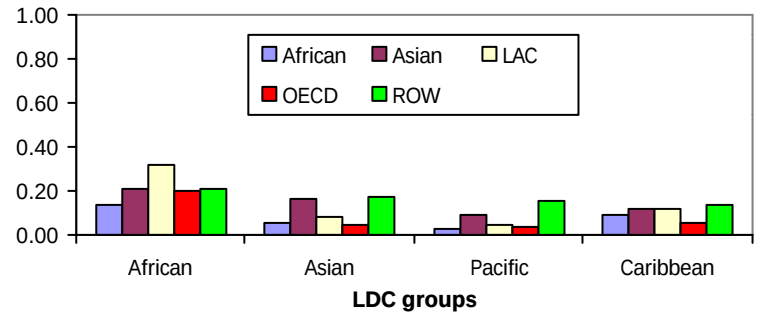


Figure V.3b. Non-LDC export similarity index in the Canadian market



Union, for a given sector at the HS2 level (edible fruits) some HS6 categories appear heavily protected (apricots), while other are much less so (apples).[5] Second, the European Union has, on average, lower tariffs at the higher end of the scale compared with the other Quad countries. Canada and the United States have a higher average rate of protection and higher variance across tariff lines, while the protection of Japan is high on average, but with small variance. Third, it is often the case that in the categories that have the highest protection against LDCs imports originating from LDCs are null. In the case of Japan, it seems that in a considerable share of sectors that receive high protection imports are zero because protection is prohibitive.

Figure V.4. Japan: Export similarity analysis, 1999

Figure V.4a. Intra-LDC export similarity index in the Japanese market

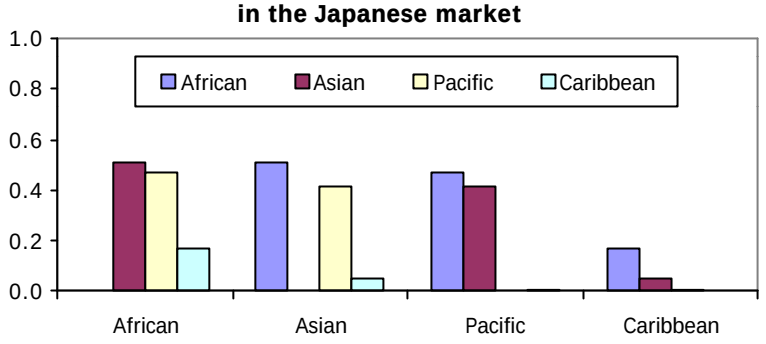
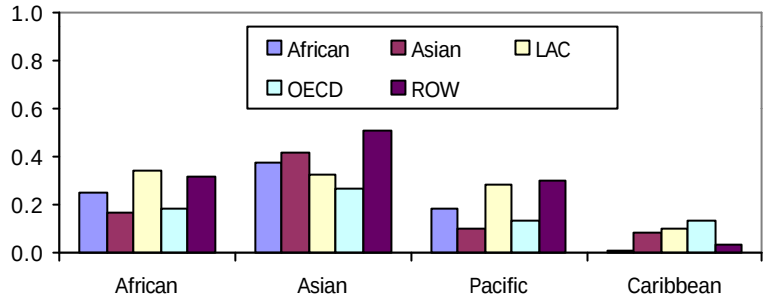


Figure V.4b. Non-LDC export similarity index in the Japanese market



Going into further detail for each Quad, it can be noted that in the European Union market (table V.2), LDC exports in top 20 tariff lines are confined only to three HS2 categories: edible fruits, edible vegetables and cereals. For cereals (sorghum), the only LDC exporters are Ethiopia and Sudan and together account for 32.89 per cent of one HS6-level tariff line. The LDCs that export in the tariff lines belonging to edible fruits and vegetables are mainly African (Mozambique, Madagascar, Zambia, Djibuti), but also non-African LDCs (Haiti, Myanmar). The non-LDC countries that compete in these high-tariff vegetable and fruit products in the European Union are especially North-African and Middle East countries (Turkey, Israel, Morocco, Saudi Arabia).

In Canada (table V.3), among the top-twenty tariff lines, there are only six HS2 categories where LDCs are currently exporting: meat products, edible fruits, vegetables, textiles, apparel and footwear. Exports in those product categories originate in only seven countries: Bangladesh, Cambodia, Haiti, Madagascar, Myanmar, Nepal and Niger. The non-LDC countries that are most likely to be affected in those product categories are the United States, the European Union, China and other non-LDC Asian countries (Hong Kong, China, Viet Nam and Indonesia).

In the United States (table V.4), high tariffs are coupled with positive LDC export shares in tobacco, vegetables, apparel, footwear and furniture. The top LDC exporters to the United States in these categories are Asian LDCs specialized in apparel manufacturing (Bangladesh, Cambodia, Myanmar)

and African LDCs that are mainly tobacco exporters (United Republic of Tanzania, Malawi, Zambia). Furthermore, Asian LDCs and Haiti often compete in these same categories. As for non-LDC exporters, the most affected in apparel goods will be Asian (China, Philippines, Taiwan Province of China) and Latin American Countries (Mexico, Honduras, Costa Rica), whereas in tobacco the displaced countries will be Turkey, Mexico, Lebanon, Argentina and Brazil.

As for Japan (table V.5), the only product included among the twenty most protected by tariffs that is actually imported from LDCs is found in dairy products, with imports coming from United Republic of Tanzania. This evidence is to a certain extent explained by the fact that protection is prohibitive for LDCs. In this case, positive exports would materialise only after liberalization. The potential non-LDC competitors in the Japanese market would be China in dairy products, Korea, the United States and the European Union in sugar, United States and Australia in meat and European Union, United States, China and Israel in processed vegetables and fruits.

In order to complement the above analysis a different approach is taken. Instead of ranking sectors according to protection levels and checking for LDC exports, the ranking is performed according to share of LDC exports, while the extent of protection is checked after. The aim is to isolate a list of sectors where, at given initial protection level, preferential liberalization for LDCs will induce a very strong redistribution in market shares across exporting countries. The results indicate that the goods most intensively imported from LDCs are basically the same for all Quad countries. Not surprisingly, they consist of basic agricultural goods and foodstuff (vanilla, oil seeds, gum), textile fibers and natural resources (salt, aluminum and copper ores). It is interesting to note that for Canada and the United States some apparel products are intensively imported from LDCs, whereas this does not occur in the European Union and Japan. This may in all probability be due to the fact that apparel imports from non-LDC countries find much higher protection in the United States and Canada.

Protection is substantial in only very few of the items that are extensively exported by LDCs. In Canada, some particular apparel products (briefs and panties, tents) may receive tariff treatment above 20 per cent. Similarly, in the United States, swimwear and headgear are highly protected.

2. Other forms of protection

The analysis so far has been restricted to protection in terms of ad-valorem tariffs. However, many items, especially in agriculture, textiles and apparel, are still protected in Quad markets through other protection instruments, like specific duties or quotas. Therefore, the information provided so far is complemented with a list of products that are protected by means other than ad-valorem tariffs and in which there are exports originating from LDCs. Tables V.10-V.13 list the the top-thirty HS6 categories in which protection in forms other than ad-valorem tariffs is in place, ranked according LDC export shares. In the European Union, the high share of LDC exports are in sugar, tobacco and alcoholic beverages (rum), all goods that are subject to non-tariff protection. Semi-milled rice also appears on the list. Conversely, in the United States, substantial export shares from LDCs can be found in few apparel categories. The case of Canada is different. There, the share of LDC exports is either very low or zero in almost all categories subject to protection other than ad-valorem tariff. In some of these categories (especially in apparel or food products) protection may be prohibitive for LDCs. The case of Japan is even more extreme. There, imports are zero from all sources in almost all categories. Here, the suspicion that this type of protection is prohibitive is even stronger.

D. Disaggregating countries

When constructing the list of the top-twenty tariff lines for LDCs in Quad markets, countries that are most likely to be involved in the market share redistribution following preferential liberalization were identified. The presumption is that the top non-LDC exporters will be those countries that will suffer strongest market share losses after non-reciprocal PTA in favor on LDCs. The idea behind this is the following: assuming a substitution elasticity that is roughly the same between imports of the same good originating from different sources, a reduction in the price of LDC exports will induce roughly the same proportional reduction in imports from alternative sources. Hence, the absolute loss of exports will be higher for the countries that export heavily before liberalization occurs (box V.1). It may be of interest, however, to go further in this type of analysis, trying to identify all the possible competitors of LDC exports in some selected categories. This allows identifying also those small exporters that may nonetheless rely very much on their exports to the Quad markets in the selected sensitive sectors. In tables V.14-V.17 several representative products were selected for each Quad market. For these products, exports above $100,000 are ranked according to their country of origin.

In the case of the United States, these products are apparel and clothing, carpets, leather products and tobacco. In apparel, only Bangladesh, Cambodia, Haiti, Nepal, Myanmar and Maldives appear among the top 50 exporters. Assuming no increase in demand and no reduction in domestic production, data presented in table V.14 suggests that, for instance, a fifty per cent increase in apparel exports from Bangladesh would translate into an overall 2 per cent reduction in current exports from third countries. Big market-share losses will accrue to big exporters. However, small exporters may see their market share reduced significantly, and may even be driven outright out of the market. African LDCs for instance, with the exception of Madagascar, are such small exporters. The only other exporters above the $100,000 threshold are Malawi, Mali, Sierra Leone and United Republic of Tanzania. Even though African countries may already qualify for duty-free and quota-free market access in the United States market under the AGOA, granting duty-free quota-free market access to all LDCs, including competitive Asian producers like Bangladesh and Cambodia, may result in a decrease in exports from African LDCs.

Similar remarks may be made about exports from several African LDCs (Malawi, United Republic of Tanzania, Central African Republic) in tobacco products, or leather products with regard to the impact of granting unrestricted market access to LDCs. With regard to carpets, this may constitute a typical example of goods that are more differentiated by country of origin and therefore, increases in exports from one source do not result in uniform decreases of third country market shares. In this particular case, carpets from developing countries have higher elasticities of substitution, among them, relative to those between carpets originating in developing and developed countries. Consequently an increase of exports from Nepal (top 11) will be to a greater extent done at the expense of market shares of other developing countries such as India, Pakistan, China or Egypt.

For Canada, the LDC export performance in apparel and carpets is similar to the one described above for the United States and the effects should probably follow the same pattern. A notable difference is the presence of Haiti in the top 10 exporters of other textile articles and Cambodia and Myanmar among the top 50 exporters of footwear.

The selected products in the case of the European Union are bananas, rice, sugar and rum. Among these products, as mentioned in the previous section, sugar is the most sensitive product. Malawi, Republic of Tanzania, Madagascar, Zambia and Myanmar were the LDCs found among the

top 50 exporters of sugar to the EU in 1999. As sugar is a homogeneous good, a reasonable assumption is to consider market share restructuring to be proportional across third countries. Therefore, in absolute terms, Mauritius, Fiji and Guyana will be the countries most affected by a reduction in their market share. As for the other sectors, with the exception of rice exports from Madagascar, rum from Comoros and Haiti and bananas from Rwanda and Uganda, all other LDC exports are very small, well below the $100,000 threshold. In the case of rum for instance, a 50 per cent increase in exports from Comoros and Haiti (the only LDCs with significant exports) would only induce less than 0.06 per cent reduction in current third country market shares.

In the case of Japan, the selected products are fish and crustaceans, meat products, and to a much lesser extent dairy products and milled products. Out of these products, fish and crustaceans represent by far the sector where LDCs are among the top 50 exporters. Granting unrestricted market access to fish exports from LDCs will most likely result in an overall reduction in current market shares. Under this assumption, in absolute values, China, United States, Russian Federation and Republic of Korea will most likely bear the highest reduction in their market share. However, small islands and other developing countries may also see a relative decline in their market share as a result of unrestricted market access for LDCs.

E. Conclusions

The export similarity indices indicate a substitution relationship between LDC exports and between LDCs and non-LDC exports that depends on a particular Quad market. Overall, exports from African LDCs are quite similar to those from Caribbean LDCs and dissimilar to those from Asian LDCs. In general, LDC exports are quite dissimilar to those from OECD countries. In all Quads, exports from African LDCs appear to be very similar to the exports from African non-LDCs and quite similar to those from Latin American countries. Exports from Asian LDCs are quite similar to those of Latin American countries (especially in the United States) and those from Asian non-LDCs (especially in Japan). These results support those obtained in the previous section. In particular, the indication is that preferential liberalization in the European Union and Japan will mainly imply a redistribution of market shares from African non-LDCs to African LDCs, while in Canada and the United States, Latin American countries may suffer due to market share gains of Asian LDCs. Furthermore, the detailed analysis at HS6 level identified a number of sensitive products and affected third countries.

Overall, the information provided in this section suggests that the effects of preferential liberalization in favor of LDCs may be very strong in a relatively small number of narrowly defined product categories. These categories will mainly belong to agriculture and food in the European Union and Japanese markets, apparel in the United States and food and apparel in Canada (table V.18). Protection in these categories may take the form of high ad-valorem tariffs or non-tariff protection. Moreover, market-share reshuffling associated with preferential liberalization will concern different countries depending on the single product category considered in each Quad market. A list of countries that compete with LDCs in “sensitive” countries is compiled in table V.19.

NOTES

[1] Take a pair of countries, both with half their exports in agriculture and half in textiles. At this level of aggregation they would seem identical. Disaggregating sectors further, it may be discovered that these two countries export very different apparel and agricultural products.

[2] Technically, denoting by $ES^{k}_{i,j}$ the export similarity index between exporter i and exporter j in country k, these indexes are given by $ES^{k}_{i,j} = \sum_{s} \min(Ak^{i}_{s}, Ak^{j}_{s})$, where Ak^{i}_{s} is the share of exports of product s from i to k over total exports from i to k and Ak^{j}_{s} is the share of exports of product s from j to k over total exports from j to k. For an illustration of the properties of the index, see Finger and Kreinin (1979).

[3] This high similarity is to a large extent explained by the importance of textile and clothing exports for the two regions.

[4] Note that the primary concern is not the identification of so-called “tariff-peaks”, namely, the tariff lines where protection is above 15 per cent.

[5] The description of the HS6 categories characterized by tariff peaks in tables V.2-V.5 are not reported, but are available upon request.

Table V.1. Export similarity indices, 1999

		LDCs				Non-LDCs				
Market	**LDC**	**African**	**Asian**	**Pacific**	**Caribbean**	**African**	**Asian**	**LAC**	**OECD**	**ROW**
Canada	African	1.00	0.04	0.04	0.05	0.14	0.21	0.32	0.20	0.21
	Asian	0.04	1.00	0.38	0.37	0.06	0.17	0.09	0.05	0.17
	Pacific	0.04	0.38	1.00	0.33	0.03	0.09	0.05	0.04	0.16
	Caribbean	0.05	0.37	0.33	1.00	0.10	0.12	0.12	0.06	0.14
Europe	African	1.00	0.15	0.08	0.21	0.46	0.29	0.44	0.22	0.41
	Asian	0.15	1.00	0.06	0.11	0.22	0.21	0.13	0.10	0.22
	Pacific	0.08	0.06	1.00	0.12	0.10	0.10	0.10	0.07	0.10
	Caribbean	0.21	0.11	0.12	1.00	0.20	0.15	0.26	0.12	0.13
Japan	African	1.00	0.51	0.47	0.17	0.25	0.17	0.35	0.19	0.32
	Asian	0.51	1.00	0.42	0.05	0.38	0.42	0.32	0.27	0.51
	Pacific	0.47	0.42	1.00	0.00	0.18	0.11	0.28	0.13	0.30
	Caribbean	0.17	0.05	0.00	1.00	0.01	0.08	0.11	0.13	0.03
United	African	1.00	0.04	0.03	0.03	0.68	0.13	0.39	0.12	0.12
States	Asian	0.04	1.00	0.05	0.46	0.11	0.16	0.22	0.07	0.16
	Pacific	0.03	0.05	1.00	0.05	0.07	0.09	0.14	0.13	0.11
	Caribbean	0.03	0.46	0.05	1.00	0.14	0.19	0.27	0.11	0.18

Source: UNCTAD.

Legend:

African LDCs: Angola, Burundi, Cape Verde, Central African Republic, Chad, Comoros, Democratic Republic of Congo, Benin, Equatorial Guinea, Ethiopia, Eritria, Djibouti, Gambia, Guinea, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Guinea-Bissau, Rwanda, Sao Tome and Principe, Sierra Leone, Somalia, Sudan, Togo, Uganda, United.Republic of Tanzania, Burkina Faso, Zambia.

Asian LDCs: Afghanistan, Bangladesh, Bhutan, Myanmar, Cambodia, Lao People's Dem. Rep., Maldives, Nepal, Yemen.

Pacific LDCs: Kiribati, Samoa, Solomon Islands, Vanuatu, Tuvalu.

Caribbean LDCs: Haiti.

African non-LDCs: Algeria, Botswana, Cameroon, Cape Verde, Congo, Cote d'Ivoire, Egypt, Former Ethiopia, Gabon, Ghana, Kenya, Libyan Arab Jamahiriya, Mauritius, Morocco, Namibia, Nigeria, S. Afr. custom Union, Senegal, Seychelles, Swaziland, Tunisia, Western Sahara, Zimbabwe.

Asian non-LDCs: Bahrain, Brunei Darussalam, China, East Timor, Fiji, French Polynesia, Georgia, Guam, Hong Kong (China), India, Indonesia, Iran, Iraq, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Lebanon, Malaysia, Fed. States of Micronesia, Midway Islands, Mongolia, Nauru, New Caledonia, Niue, Norfolk Island, Northern Mariana Islands, Pacific Islands, Pakistan, Palau, Papua New Guinea, Philippines, Pitcairn, Qatar, Saudi Arabia, Singapore, Sri Lanka, Syrian Arab Republic, Taiwan Province of China, Tajikistan, Thailand, Tokelau, Tonga, Turkmenistan, United Arab Emirates, Uzbekistan, Viet Nam, Wake Island, Wallis and Futura Isl., Yemen, A. R. Yemen Democratic.

Latin American and Caribbean: Antigua, Barbuda, Argentina, Bahamas, Barbados, Bermuda, Bolivia, Brazil, Belize, British Virgin Islands, Cayman Islands, Chile, Colombia, Cook Islands, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Falkland Island, French Guiana, Grenada, Guadeloupe, Guatemala, Guyana, Honduras, Jamaica, Martinique, Netherlands Antilles, Aruba, Nicaragua, Marshall Islands, Panama, Paraguay, Peru, Puerto Rico, Reunion, Saint Helena, Saint Kitts-Nevis, Saint Lucia, Saint Pierre and Miquelon, Saint Vincent and Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos Isl., United States Virgin Isl., Uruguay, Venezuela.

OECD: Australia, Austria, Belgium and Luxembourg, Canada, Czechoslovakia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Republic of Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States, European Union.

ROW: Albania, American Samoa, Andorra, Angola, Anguila, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, British Indian Ocean Ter., Bulgaria, Christmas Island, Cocos (Keeling) Islands, Croatia, Cyprus, Estonia, Faer Oer Islands, Gibraltar, Greenland, Holy See, Isle of Man, Israel, Jhonston Island, Democractic People's Republic of Korea, Latvia, Liechtenstein, Lithuania, Macau, Malta, Moldova, Republic of Monaco, Montserrat, Oman, Romania, Russian Federation, San Marino, Sao Tome and Principe, Sierra Leone, Slovenia, Sudan, Svalbard and Jan Mayen Is, TFYR Macedonia, Ukraine, Fed. Rep. of Yugoslavia.

Table V.2. European Union: Highest ad-valorem tariffs against LDCs, 2000

HS2 category	Number of HS6 cat. covered	LDC tariff (%)	MFN tariff (%)	Total European Union imports in covered HS6 cat.	Share of imports from LDCs (%)	Top exporters	Top LDC exporters
22 Beverages	1	32.00	32.00	26	0	Chile, United States, Australia	
08 Edible fruits	1	17.00	20.00	8 948	0	Turkey, Chile, New Zealand	
08 Edible fruits	1	16.00	16.00	204 627	0	Israel, Morocco, Swaziland	
08 Edible fruits	1	15.25	15.25	390 099	0.35	Turkey, Israel, Saudi Arabia	Haiti, Djibuti, Mozambique,
08 Edible fruits	1	14.90	17.60	27425	0.04	United States, Argentina, Chile	Kiribati, Zambia
16 Preparation of meat	1	14.73	16.60	20	0	Switzerland, Bosnia, Poland	
08 Edible fruits	1	11.10	12.00	93 140	0	Czech Rep., Romania, Norway	
16 Preparation of meat	2	10.90	10.90	179 620	0	Slovenia, Croatia, Hungary	
07 Edible vegetables	1	10.80	12.80	13 920	0.04	Bulgaria, Morocco, Jordan	
07 Edible vegetables	1	10.40	10.40	1 431	0.42	Egypt, Morocco, Tunisia	Ethiopia
08 Edible fruits	1	9.50	11.20	64 909	0	Israel, Morocco, United States	
16 Preparation of meat	1	9.47	14.07	672	0	Hungary, Switzerland, Israel	
16 Preparation of meat	1	8.50	8.50	77 896	0	Israel, Bulgaria, United States	
07 Edible vegetables	1	8.10	9.60	43 720	0.38	Mexico, Pakistan, Turkey	Myanmar, Madagascar
04 Dairy prod.	2	7.70	7.70	500 774	0	Switzerland, Cyprus, Australia	
08 Edible fruits	1	6.85	11.35	462 660	0.02	United States, Morocco, Australia	Djibouti
17 Sugar	1	6.80	8.00	14 473	0	United States, Canada, Switzerland	
10 Cereals	1	6.40	6.40	33 423	32.89	Australia, Canada, India	Ethiopia, Sudan
02 Meat	3	6.40	6.40	91 220	0	Switzerland, Hungary, Brazil	
08 Edible fruits	1	6.10	7.20	633 068	0	China, United States, Croatia	

Source: UNCTAD.

Legend: 20 highest tariff lines facing LDCs after taking into account preferential treatment. The description of the HS6 categories involved is available on request.

Top exporters relate to the covered HS6 categories only and are identified using 1999 trade data.

Table V.3. Canada: Highest ad-valorem tariffs against LDCs, 2000

HS2 category	Number of HS6 cat. covered	LDC tariff (%)	MFN tariff (%)	Total European Union imports in covered HS6 cat.	Share of imports from LDCs (%)	Top exporters in covered HS6 cat	Top LDC exporters in covered HS6 cat
10 Cereals	1	78.50	78.50	1 339	0	US	
16 Preparation of meat	1	65.83	65.33	228	0	EU, US, Poland	
10 Cereals	1	59.25	59.25	3 641	0	US	
10 Cereals	1	50.00	50.00	1 580	0	US, EU, NZ	
16 Preparation of meat	1	49.06	69.00	47 416	0	US, Australia, EU	
62 Not knitted apparel	1	20.75	20.75	13 185	4.91	China, US, HK	Cambodia, Bangladesh, Nepal
61 Knitted apparel	96	20.50	20.50	1 136 409	4.69	US, EU, HK	Myanmar, Bangladesh, Cambodia
62 Not knitted apparel	51	20.50	20.50	586 679	2.69	EU, US, China	Bangladesh, Cambodia, Myanmar
63 Textiles articles	17	20.50	20.50	133 122	2.37	US, EU, China	Bangladesh, Niger, Cambodia
63 Textiles articles	1	20.00	20.00	3 440	0.06	EU, US, China	Bangladesh
64 Footwear	4	20.00	20.00	98 269	0.02	China, Indonesia, Viet Nam	Cambodia
64 Footwear	3	19.50	19.50	187 843	0.08	China, Viet Nam, Indonesia	Cambodia
62 Not knitted apparel	36	19.00	19.00	841 179	4.38	EU, US, China	Myanmar, Bangladesh, Nepal
63. Textiles articles.	18	19.00	19.00	211 661	2.02	China, TPC, US	Bangladesh, Cambodia
62 Not knitted apparel	1	18.50	18.50	732	0.14	EU, US, India	Bangladesh
63 Textiles articles.	1	18.50	18.50	377	0.27	China, US, TPC	Nepal
58 Special woven fabrics	2	18.00	18.00	6 286	1.22	US, EU, Turkey	Haiti
63 Other made up textiles art.	2	18.00	18.00	2 970	0	US, China, India	
64 Footwear	2	18.00	18.00	6 746	0	EU, US, China	
64 Footwear	1	17.50	17.50	112	0	China, US, Mexico	
63 Other made up textiles art.	2	17.25	17.25	5 044	0	China, US, India	
20 Preparation of vegetable, fruit	1	17.00	17.00	9 866	0.11	China, US, New Zealand	Madagascar
22 Beverages	2	16.00	16.00	8 702	0	EU, US, Japan	
52 Cotton	30	16.00	16.00	60 583	0	EU, US, Pakistan	
54 Man-made filaments	10	16.00	16.00	43 118	0	US, Indonesia, Republic of Korea	
55 Man-made staple fibres	45	16.00	16.00	113122	0	US, EU, China	
56 Wadding, felt & nonwoven	1	16.00	16.00	700	0	US, EU, Korea	
58 Special woven fabrics	6	16.00	16.00	1 391	0	US, TPC, Japan	
60 Knitted or crocheted fabrics	4	16.00	16.00	33 386	0	US, TPC, EU	
62 Not knitted apparel	1	16.00	16.00	402	0	China, Korea, TPC	
94 Furniture	1	15.50	15.50	8 560	0.01	China, US, Virgin Islands	Bangladesh
65 Headgear	1	15.50	15.50	1 157	0	US, EU, China	
68 Art. of stone, plaster, cement	1	15.50	15.50	204	0	US, EU, India	
58 Special woven fabrics	2	15.00	15.00	4 998	0	US, China, HK	
20 Prep. of vegetable, fruit	1	14.00	14.00	564	0	US, China, SACU	
52 Cotton	9	14.00	14.00	97 753	0	US, India, Australia	
58 Special woven fabrics	3	14.00	14.00	7 172	0	US, EU, Turkey	
94 Furniture	1	14.00	14.00	59 767	0	US, China, Korea	
64 Footwear	4	13.33	13.33	127 556	0	EU, TPC, HK	

Source: UNCTAD.

Legend: 20 highest tariff lines facing LDCs after taking into account preferential treatment. The description of the HS6 categories involved is available on request.
Top exporters relates to the covered HS6 categories only and are identified using 1999 trade data.
EU: European Union HK: Hong Kong, China
TPC: Taiwan Province of China US: United States

Table V.4. United States: Highest ad-valorem tariffs against LDCs, 2000

HS2 category	Number of HS6 cat. covered	LDC tariff (%)	MFN tariff (%)	Total European Union imports in covered HS6 cat.	Share of imports from LDCs (%)	Top exporters in covered HS6 cat	Top LDC exporters in covered HS6 cat
24 Tobacco	3	87.50	350.00	24 400	0	EU, Venezuela, Canada	
12 Oil seed	1	54.60	163.80	1 246	0	Mexico	
24 Tobacco	1	46.67	77.78	408 505	13.69	EU. Brazil. Thailand	United Republic of Tanzania, Malawi, Zambia
12 Oil seed	1	43.93	131.80	41 929	1.00		
20 Preparation of vegetable. fruit		43.93	79.08	34 844	0		
24 Tobacco	1	38.89	58.33	354 649	0.84	Turkey, Mexico, Lebanon	Central African Republic, Bangladesh, Madagascar
64 Footwear	2	37.50	37.50		0	China, Canada	
64 Footwear	1	30.70	30.70	488 092	0	Indonesia, TPC, Thailand	
61 Knitted apparel	4	28.90	28.90	47 909	4.41	TPC, Canada, China	Cambodia, Myanmar, Bangladesh
61 Knitted apparel	1	28.62	28.62	195 957	4.37	Costa Rica, Philippines, Mexico	Bangladesh, Haiti, Cambodia
62 Not knitted apparel	1	28.00	28.00	67 629	0.11	Philippines, Indonesia, Republic of Korea	Bangladesh
64 Footwear	1	27.88	27.88	336 616	0	China, Indonesia, TPC	
24 Tobacco	1	26.92	38.89	18 560	2.46	Brazil, Turkey, Argentina	Malawi
61 Knitted apparel	1	26.60	26.60	4 430	26.73	Mexico, Israel, Honduras	Bangladesh, Haiti, Myanmar
64 Footwear	1	26.39	26.39	824 936	0	China, EU, Mexico	Myanmar, Nepal
61 Knitted apparel	1	25.73	25.73	145 767	1.42	Mexico, TPC, EU	Bangladesh, Myanmar, Cambodia, Maldives, Haiti
07 Edible vegetables	1	25.55	25.55	852	0	China, India, EU	
61 Knitted apparel	1	25.50	25.50	293 855	0.26	Mexico, Canada, Dominican Rep.	Bangladesh, Haiti, Cambodia, Myanmar
62 Not knitted apparel	1	25.00	25.00	126 737	0.26	Dominican Rep, Canada. Costa Rica	Bangladesh, Myanmar
64 Footwear	1	25.00	25.00	12 081	0	China. Canada. EU	
61 Knitted apparel	1	24.35	24.35	434 638	3.43	Mexico, Republic of Korea, TPC	Bangladesh, Cambodia, Myanmar Haiti, Nepal
62 Not knitted apparel	1	24.10	24.10	15 801	0.75	Nicaragua, Honduras, Mexico	Myanmar

Source: UNCTAD.

Legend: 20 highest tariff lines facing LDCs after taking into account preferential treatment. The description of the HS6 categories involved is available on request.
Top exporters relates to the covered HS6 categories only and are identified using 1999 trade data.
EU: European Union TPC: Taiwan Province of China

Table V.5. Japan: Highest ad-valorem tariffs against LDCs, 2000

HS2 category	Number of HS6 cat. covered	LDC tariff (%)	MFN tariff (%)	Total Japan imports in covered HS6 cat.	Share of imports from LDCs (%)	Top exporters in covered HS6 cat	Top LDC exporters in covered HS6 cat
17 Sugar	2	43.27	43.27	0	.		
04 Dairy products	1	40.00	40.00	17 906	0	EU, New Zealand, US	
02 Meat	6	38.50	38.50	2 448 561	0	US, Australia, Canada	
17 Sugar		37.78	37.78	704	0	Korea, US, EU	
04 Dairy products	3	35.00	35.00	0	.	.	.
04 Dairy products	1	33.15	33.15	26 926	0	US; EU, Malaysia	
04 Dairy products	1	32.50	32.50	0	.	.	
17 Sugar	1	30.47	30.47	5 507	0	Thailand, Rep. of Korea, US	
15 Animal/veg. fats and oils	1	29.80	29.80	1 870	0	Singapore, US, Norway	
04 Dairy products	1	29.33	29.33	30	0	EU	
04 Dairy products	1	28.50	28.50	823	0	EU	
02 Meat	2	28.03	28.03	295 038	0	US, Australia, Canada	
20 Preparation of vegetable, fruit	1	27.65	27.65	472	0	US	
04 Dairy products.	1	27.48	27.48	420	0	US, Canada	
22 Beverages	1	27.20	27.20	109	0	S. Afr. custom Union, EU, US	
04 Dairy products.	1	26.83	26.83	3 289	0	Australia, EU	
20 Preparation of vegetable, fruit	1	26.48	26.48	89 245	0	US, EU, China	
20 Preparation of vegetable, fruit	1	25.55	25.55	1 700	0	US, Israel EU	
20 Preparation of vegetable, fruit	2	25.53	25.53	153 188	0	Brazil, US, EU	
04 Dairy products	1	25.50	25.5	3 6449	0.01	China, Argentina, New Zealand	United Republic of Tanzania

Source: UNCTAD.

Legend: 20 highest tariff lines facing LDCs after taking into account preferential treatment. The description of the HS6 categories involved is available on request.
Top exporters relates to the covered HS6 categories only and are identified using 1999 trade data.
EU: European Union US: United States

Table V.6. European Union: Goods intensively imported from LDCs, 2000

HS6 code	Description	Total European Union imports	Share of LDCs in total European Union imports (%)	MFN tariff (%)	LDC tariff (%)
090500	Vanilla	22 666	84.80	6.00	0
260500	Cobalt ores and concentrates	110 753	83.06	0	0
330126	Essential oils & resinoids	3 281	77.75	1.15	0
130120	Gum Arabic	28 780	77.35	0	0
230500	Residues & waste from the food industry	20 321	76.25	0	0
530310	Vegetable textile fibres	2 276	76.14	0	0
430130	Raw furskins	10 999	72.66	0	0
530710	Vegetable textile fibres	18 075	72.23	0	0
530390	Vegetable textile fibres	253	64.43	0	0
260600	Aluminium ores and concentrates	367 985	63.16	0	0
090700	Cloves	3 075	61.14	8.00	0
560729	Twine, cordage, ropes and cables	2 602	60.26	12.00	0
030333	Fish	5 003	58.56	7.50	0
410310	Raw hides and skins.	3 852	58.07	0	0
150810	Crude oil	115 519	55.67	3.20	0
630510	Sacks and bags	23 209	55.18	3.00	0
121299	Oil seed, oleagi fruits	31 335	53.60	0	0
120300	Oil seed, oleagi fruits	42 742	51.96	0	0
110319	Groats and meal	43	44.19	.	.
530720	Vegetable textile fibres	55 126	44.03	0	0
120720	Cotton seeds	38 576	42.02	0	0
530410	Vegetable textile fibres	25 755	41.93	0	0
710210	Diamonds	225 661	41.92	0	0
030339	Fish	9 450	41.67	11.25	0
030759	Octopus	252 975	39.96	8.00	0
081090	Edible fruits and nuts	107 523	37.02	5.60	0
030270	Livers and roes	5 032	36.86	10.00	0
240310	Tobacco	1 795	36.66	74.90	0
530890	Vegetable textile fibres	2 303	36.56	3.87	0
620530	Not knitted apparel	536 965	35.92	12.00	0

Source: UNCTAD.
Legend: 30 HS6 categories with highest import share from LDCs.
Tariff data refers to ad valorem tariffs only.

Table V.7. Canada: Goods intensively imported from LDCs, 2000

HS6 code	Description	Total Canada imports	Share of LDCs in total Canada imports (%)	MFN tariff (%)	LDC tariff (%)
251010	Salt, sulphur; earth and stone; Plastering mat.	24 488	99.70	0	0
530720	Vegetable textile fibres	1 230	95.93	10.00	0
090500	Vanilla	2 589	75.90	0	0
530410	Vegetable textile fibres	346	57.23	0	0
283529	Phosphates	3 512	54.81	2.00	0
530710	Vegetable textile fibres	122	42.62	4.00	0
710811	Gold	882	40.70	0	0
531090	Vegetable textile fibres	491	35.44	7.00	0
841011	Hydraulic turbines and water wheels	218	33.03	6.50	0
621420	Not knitted apparel	2 877	32.64	10.25	10.25
630510	Sacks and bags	436	31.19	6.00	0
531010	Vegetable textile fibres	3 821	28.95	0	0
530310	Vegetable textile fibres	431	27.38	0	0
090700	Cloves	401	26.43	1.50	0
330126	Essentials oils	8	25.00	0	0
630520	Sacks and bags	19 966	19.75	19.00	19.00
520100	Cotton	75 737	18.46	0	0
610821	Briefs and panties	30 912	16.82	20.50	20.50
530390	Vegetable textile fibres	110	16.36	0	0
610130	Not knitted apparel	19 184	15.76	20.50	20.50
400251	Latex	192	14.58	0	0
620930	Not knitted apparel	4 338	12.68	20.50	20.50
140190	Vegetable plaiting materials	639	12.68	0	0
400110	Natural rubber latex	4 698	12.24	0	0
620193	Not knitted apparel	106 215	11.83	19.00	19.00
630622	Tents	27 068	11.47	20.50	20.50
030329	Fish	364	11.26	0	0
030349	Fish	582	10.48	0	0
440729	Wood and articles of wood	5 002	9.82	0	0
262030	Ores	35 635	9.63	0	0

Source: UNCTAD.
Legend: 30 HS6 categories with highest import share from LDCs.
Tariff data refers to ad valorem tariffs only.

Table. V. 8. United States: Goods intensively imported from LDCs, 2000

HS6 code	Description	Total United States imports	Share of LDCs in total United States imports (%)	MFN tariff (%)	LDC tariff (%)
530310	Vegetable textile fibres	1 192	80.79	0	0
530710	Vegetable textile fibres	1 950	78.97	0.90	0
090500	Vanilla	28 214	72.81	0	0
530720	Vegetable textile fibres	4 880	72.42	1.20	0
560710	Twine, cordage, ropes and cables	6 732	65.20	1.60	0
090700	Cloves	2 711	60.60	0	0
140190	Vegetable materials	1 192	60.40	3.80	0
410619	Goat or kid skin leather	3 812	50.05	2.40	0
530390	Vegetable textile fibres	64	50.00	0	0
120799	Oil seed, oleagi fruits	24 400	47.48	0	0
151110	Palm oil and its fractions	63	42.86	0	0
531010	Vegetable textile fibres.	24 440	42.36	0	0
400110	Natural rubber latex	74 044	41.56	0	0
330126	Essentials oils	522	35.25	0	0
260600	Aluminium ores and concentrates	353 874	33.01	0	0
110429	Products of .mill.industry	1 035	31.79	2.70	0
130120	Gum Arabic	22 966	31.02	0	0
410310	Raw hides and skins	814	30.84	0	0
120926	Seeds, fruit and spores	5 985	30.43	0	0
410519	Sheep or lamb skin leather	1 111	30.24	2.00	0
530110	Vegetable textile fibres	252	28.97	0	0
030231	Fish	8 119	28.96	0	0
611231	Not knitted apparel	4 430	26.73	26.60	26.60
810510	Products of Cobalt	243 676	26.28	1.47	0
120720	Cotton seeds	46 824	26.27 .		0
081400	Peel of citrus fruit or melons	941	23.38	0	0
250621	Quartzite	292	22.95	0	0
630510	Sacks and bags	13 222	20.93	0	0
650590	Headgear	810 793	20.81	7.50	7.50
250629	Quartzite	396	20.45	0	0

Source: UNCTAD.
Legend: 30 HS6 categories with highest import share from LDCs.
Tariff data refers to ad valorem tariffs only.

Table V. 9. Japan: Goods intensively imported from LDCs, 2000

HS6 code	Description	Total Japan imports	Share of LDCs in total Japan imports (%)	MFN tariff (%)	LDC tariff (%)
560729	Twine, cordage, ropes and cables	481	94.59	4.80	0
560721	Twine, cordage, ropes and cables	1 149	92.86	2.40	0
090500	Vanilla	4 033	87.08	0	0
090700	Cloves	1 068	83.71	1.20	0
261590	Ores	2 593	73.93	0	0
410221	Raw skins of sheep or lambs	1 217	68.78	0	0
410429	Leather of bovine or equine animals	53	67.92	16.77	0
130120	Gum Arabic	3 124	65.78	0	0
152190	Animal fats and oils	3 669	57.37	7.53	0
530410	Vegetable textile fibres	1 434	53.63	0	0
530710	Vegetable textile fibres	4 861	50.81	0	0
410410	Leather of bovine or equine animals	9 572	47.14	21.60	0
531010	Vegetable textile fibres	8 517	43.83	12.80	0
030343	Fish	53 655	37.95	3.50	3.50
410620	Goat or kid skin leather	5 725	36.52	15.23	0
630510	Sacks and bags	4 264	35.79	0	0
530720	Vegetable textile fibres	548	35.40	0	0
120740	Sesamum seeds	118 932	33.47	0	0
030332	Flat fish	81	29.63	3.50	3.50
030759	Octopus	395 646	28.80	8.50	5
560710	Twine, cordage, ropes and cables	5 369	28.61	0	0
530310	Vegetable textile fibres	354	28.25	0	0
110610	Products of . mill.industry	19	26.32	13.60	13.60
810510	Products of Cobalt	235 911	25.44	0	0
410421	Leather of bovine or equine animals	1 714	23.51	25.15	0
410439	Leather of bovine or equine animals	9 503	22.79	23.67	0
121110	Liquorice roots	3 735	21.15	0	0
120300	Copra	16 062	19.04	0	0
740311	Cathodes and sections of cathodes	354 479	18.69	1.50	0
071339	Edible vegetables	26 928	17.37	6.50	6.50

Source: UNCTAD.
Legend: 30 HS6 categories with highest import share from LDCs.
Tariff data refers to ad valorem tariffs only.

Table V.10. European Union: Sectors affected by protection other than ad-valorem tariffs, 2000

HS6 code	Description	Total European Union imports	Share of LDCs in total European Union imports (%)
110319	Groats and meal	43	44.19
170199	Sugars.	77 488	17.56
240120	Tobacco	1 826 080	10.75
240130	Tobacco	54 249	10.52
170310	Cane molasses	145 276	9.96
240110	Tobacco	389 677	8.24
121292	Sugar cane	94	7.45
110620	Products of .mill.industry	562	4.98
170111	Sugars and sugar confectionery	978 033	2.95
110290	Mill prod.	250	2.80
220710	Beverages, spirits and vinegar	43 109	2.74
190300	Tapioca	1 990	2.51
230230	Residues from food industry	2 349	2.34
190240	Couscous	1 161	2.15
020712	Meat and edible meat offal	5 876	2.08
070200	Tomatoes	154 920	0.76
100630	Rice	91 133	0.44
040120	Milk and cream	3 460	0.43
020220	Meat of bovine animals	925	0.32
190540	Bread, pastry, cakes, biscuits	2 449	0.24
110814	Starches	3 546	0.20
110311	Groats and meal	725	0.14
220600	Beverages, spirits and vinegar	15 821	0.12
220840	Rum and tafia	328 990	0.12
100590	Maize	321 825	0.09
020230	Meat of bovine animals	354 786	0.06
071410	Manioc	353 700	0.03
110100	Wheat or meslin flour	3 629	0.03
110220	Maize (corn) flour	6 317	0.03
110430	Products of .mill.industry	3 556	0.03

Source: UNCTAD.
Legend: 30 HS6 categories ranked by import share from LDCs

Table V.11. Canada: Sectors affected by protection other than ad-valorem tariffs, 2000

HS6 code	Description	Total Canada imports	Share of LDCs in total Canada imports (%)
040620	Cheese and curd	7 037	1.14
170191	Sugars	2 317	0.04
611520	Knitted apparel	2 871	0
110100	Wheat or meslin flour	8 778	0
220710	Beverages, spirits and vinegar	8 852	0
220410	Sparkling wine	67 823	0
070110	Potatoes	2 249	0
110720	Malt	1 670	0
040630	Cheese	13 422	0
220429	Wine	49 412	0
220421	Wine	436 587	0
220430	Wine	592	0
040690	Cheese	94 362	0
611593	Not knitted apparel	11 161	0
611599	Not knitted apparel	1 737	0
611592	Not knitted apparel	41 477	0
040291	Milk and cream	34	0
010592	Live poultry	2 140	0
010593	Live poultry	1 813	0
040299	Milk and cream	222	0
040899	Birds' eggs and egg yolks	1 614	0
070190	Potatoes	57 188	0
170199	Sugars	7 269	0
020725	Meat and edible offal	2	0
020724	Meat and edible offal	704	0
020726	Meat. Of turkeys: -- Cuts and offal, fresh or chilled	3 609	0
110710	Malt	934	0
040210	Milk and cream	1 418	0
110311	Groats and meal	102	0
040610	Fresh cheese	1 813	0

Source: UNCTAD.
Legend: 30 HS6 categories ranked by import share from LDCs.

Table V. 12. United States: Sectors affected by protection other than ad-valorem tariffs, 2000

HS6 code	Description	Total United States imports	Share of LDCs in total United States imports (%)
611691	Knitted apparel	10 521	8.42
610110	Knitted apparel	1 473	8.28
620323	apparel	657	3.35
610422	Knitted apparel	242	3.31
620423	Not knitted apparel	14 604	3.25
620211	Overcoats, raincoats, car-coats, capes, cloaks	135 852	1.27
610210	Knitted apparel	18 112	0.93
620429	Not knitted apparel	17 338	0.87
630120	Blankets and travelling rugs	11 352	0.54
621520	Not knitted apparel	17 266	0.32
620111	Overcoats, raincoats, car-coats, capes, cloaks	60 888	0.23
610431	Jackets and blazers	11 706	0.01
910211	Clocks and watches and parts thereof.	1 547 530	0
080510	Oranges	93 906	0
080520	Citrus fruit	126 255	0
080540	Grapefruit	1 090	0
200911	Orange juice	317 125	0
200919	Orange juice	13 570	0
200920	Grapefruit juice	1 501	0
510400	Garneted stock of wool or of fine or coarse animal hair	321	0
510510	Carded wool	87	0
510521	Wool and fine or coarse animal hair, carded or combed	143	0
510529	Wool and fine or coarse animal hair, carded or combed	4 611	0
510530	Fine animal hair, carded or combed	394	0
560221	Felt	7 957	0
610311	Suits	2 336	0
610322	Suits	47	0
610323	Suits	52	0
610329	Suits	1	0
610331	Jackets and blazers	1 148	0

Source: UNCTAD.
Legend: 30 HS6 categories ranked by import share from LDCs.

Table V. 13. Japan: Sectors affected by protection other than ad-valorem tariffs, 2000

HS6 code	Description
270900	Petroleum oils and oils
021020	Meat of bovine animals
130231	Mucilage and thickeners derived from vegetable products
150710	Soya-bean oil and its fractions
150790	Soya-bean oil and its fractions
150810	Ground-nut oil and its fractions
150890	Ground-nut oil and its fractions
151211	Sunflower-seed or safflower oil and fractions thereof
151219	Sunflower-seed or safflower oil and fractions thereof
151410	Rape, colza or mustard oil and fractions thereof
151490	Rape, colza or mustard oil and fractions thereof
151521	Maize (corn) oil and its fractions
151529	Maize (corn) oil and its fractions
151550	Sesame oil and its fractions
170111	Sugars and sugar confectionery
170191	Sugars and sugar confectionery
170199	Sugars and sugar confectionery
190211	Pasta
190219	Pasta
190240	Couscous
220820	Spirits
220870	Liqueurs and cordials

Source: UNCTAD.
Note: Imports to Japan in all sectors are zero.

Table V.14. Major exporters to the United States in 1999: Selected products

(Thousands of dollars)

	Apparel		Knitted apparel		Carpets		Leather products		Tobacco	
Top	**Value**	**Exporter**	**Value**	**Exporter**	**Value**	**Exporter**	**Value**	**Exporter**	**Value**	**Exporter**
1	29 889 198	World	24 667 444	World	1 316 587	World	6 441 097	World	1 250 603	World
2	4 464 461	Mexico	3 335 848	Mexico	366 929	India	3 217 466	China	217 758	Dominican Rep.
3	3 941 615	China	2 285 121	Hong Kong, China	203 059	China	391 508	Italy	182 292	Turkey
4	2 193 718	Hong Kong, China	2 122 535	China	172 994	Canada	383 920	Thailand	147 911	Brazil
5	1 432 511	Dominican Rep.	1 507 750	Honduras	96 666	Pakistan	322 566	Philippines	56 439	Honduras
6	1 341 195	Indonesia	1 234 875	Asia Othr.NS	96 213	Belgium	257 250	Indonesia	55 612	Canada
7	**1 237 888**	**Bangladesh**	1 047 424	Korea, Rep. of	73 413	United Kingdom	254 550	Korea, Rep. of	55 441	Argentina
8	1 228 090	India	957 175	El Salvador	52 316	Turkey	237 834	Mexico	**52 992**	**Malawi**
9	1 170 830	Korea, Rep. of	921 589	Dominican Rep.	44 754	Egypt	214 684	India	50 452	Greece
10	1 117 628	Philippines	862 659	Thailand	27 386	Netherlands	186 095	Asia Othr.NS	34 998	Bulgaria
11	1 069 120	Italy	811 555	Canada	**27 206**	**Nepal**	154 759	France, Monaco	32 988	Spain
12	1 005 213	Sri Lanka	753 071	Philippines	18 209	Ireland	119 616	Sri Lanka	32 790	Japan
13	800 977	Canada	660 710	Macau	17 885	Mexico	93 558	Hong Kong, China	30 039	FYROM
14	751 918	Thailand	550 875	Pakistan	17 131	France, Monaco	87 513	Pakistan	28 952	Mexico
15	734 947	Guatemala	543 916	Turkey	12 366	Spain	79 414	Canada	23 584	Zimbabwe
16	733 753	Honduras	535 695	Guatemala	10 495	Thailand	54 373	Dominican Rep.	21 198	Indonesia
17	729 767	Asia Othr.NS	472 299	India	10 261	Italy	43 295	Costa Rica	19 159	Thailand
18	449 669	Costa Rica	458 604	Indonesia	7 864	Germany	37 564	United Kingdom	17 151	United Kingdom
19	404 545	Malaysia	452 869	Italy	4 870	Korea, Rep. of	32 372	United Arab Emirates	16 634	Italy
20	403 468	El Salvador	**393 141**	**Bangladesh**	4 832	Romania	29 317	Germany	13 962	Guatemala
21	383 339	Macau	389 451	Costa Rica	4 533	Bulgaria	27 030	Spain	13 606	Switz./Liecht.
22	**354 072**	**Cambodia**	385 452	Malaysia	4 400	Australia	26 672	Turkey	12 253	India
23	332 832	Turkey	352 715	Israel	4 269	Saudi Arabia	26 201	Colombia	11 210	Jamaica
24	251 158	Pakistan	327 668	Sri Lanka	4 037	New Zealand	23 888	Argentina	11 077	Nicaragua
25	239 871	Colombia	304 112	Peru	3 528	Philippines	**19 157**	**Bangladesh**	9 767	Germany
26	231 213	United Arab Emirates	290 427	Jamaica	3 039	Greece	17 896	Switzerland	9 697	China
27	224 481	Nicaragua	**271 137**	**Cambodia**	3 018	Denmark	12 293	Malaysia	9 351	Philippines
28	199 562	Egypt	270 458	Singapore	2 981	Switz./Liecht.	12 239	Japan	9 350	France, Monaco
29	186 717	Mauritius	**215 083**	**Haiti**	2 272	S.Afr. Custom Union	8 673	Brazil	9 176	Dominica
30	166 912	France, Monaco	150 734	Egypt	2 094	Portugal	**7 189**	**Myanmar**	8 805	Netherlands

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Table V.14. Major Exporters to the United States in 1999: Selected Products (concluded)

(Thousands of dollars)

	Apparel		Knitted apparel		Carpets		Leather products		Tobacco	
Top	Value	Exporter	Value	Exporter	Value	Exporter	Value	Exporter	Value	Exporter
31	**130 597**	**Nepal**	143 958	Colombia	1 977	Brazil	6 758	Guatemala	6 702	Ecuador
32	125 526	Oman	143 568	United Kingdom	1 879	Japan	6 097	El Salvador	5 698	Lebanon
33	124 178	S.Afr. Cus. Union	130 582	Australia	1 848	Czech Rep.	3 565	Asia West NS	4 959	Korea, Rep. of
34	97 404	Qatar	128 705	S.Afr.Cus.Un	1 518	Israel	2 901	Australia	4 598	Denmark
35	84 589	Israel	**128 368**	**Myanmar**	1 149	Sweden	2 831	Macau	4 549	Belgium
36	83 515	Bahrain	124 926	Brunei Darussalam	1 055	Morocco	2 438	Belgium	3 767	Costa Rica
37	79 496	United Kingdom	84 608	United Arab Emirates	991	Indonesia	2 393	Ireland	3 666	Cameroon
38	76 323	Russian Fed.	69 617	Fiji	785	Jordan	2 362	Viet Nam	**3 246**	**United Rep. of Tanzania**
39	73 732	Morocco	62 634	Russian Fed.	763	Guatemala	2 342	Israel	3 235	Sweden
40	73 572	Singapore	59 564	Nicaragua	**701**	**Bangladesh**	2 302	Hungary	**2 480**	**Cent. Afr. Rep.**
41	**72 019**	**Myanmar**	59 260	Mauritius	516	Finland	2 105	Honduras	2 184	Venezuela
42	61 031	Germany	54 679	France, Monaco	512	Asia Othr.NS	2 084	Tokelau	1 766	Colombia
43	58 154	Jamaica	42 050	Romania	442	Russian Fed	1 764	S.Afr. Cus. Union	1 191	Malaysia
44	52 410	TFYR Macedna	34 490	Portugal	318	Sri Lanka	1 635	Paraguay	1 064	Paraguay
45	49 001	Romania	33 900	Bulgaria	297	Rep. of Moldova	1 606	Singapore	1 036	Untd Arab Em
46	**47 321**	**Haiti**	**33 180**	**Maldives**	290	Austria	1 392	Denmark	704	Neth.Antiles
47	42 649	Portugal	26 815	Oman	275	Hungary	1 379	Slovenia	621	China HK SAR
48	41 833	Kenya	25 118	Mongolia	**214**	**Afghanistan**	1 336	Netherlands	418	Kenya
49	41 793	Bulgaria	24 117	Japan	171	Hong Kong, China	1 315	New Zealand	402	Panama
50	40 395	Ukraine	23 383	Qatar	167	Oman	**1 227**	**Haiti**	391	Cyprus
	32 174	**Madagascar (top 56)**	**19 031**	**Nepal (top 53)**			**477**	**Nepal (top 58)**	**278**	**Bangladesh (top 55)**
	22 845	**Maldives (top 61)**	**16 494**	**Madagascar (top 56)**			**307**	**Cambodia (top 63)**	**209**	**Madagascar (top 58)**
	4 366	**Lao People's Dem. Rep. (top 85)**	**8 106**	**Lao People's Dem. Rep. (top 69)**					**145**	**Zambia (top 60)**
	2 833	**United Rep. of Tanzania (top 92)**	**200**	**Malawi (top 111)**						
	1 279	**Malawi (top 104)**	**102**	**Sierra Leone (top 118)**						
	101	**Mali (top 124)**								

Table V.15. Major exporters to Canada in 1999: Selected products

(Thousands of dollars)

	Apparel & clothing knitted or crocheted		Apparel and clothing, not knitted or crocheted		Footwear, gaiters and the like: parts of such articles		Other made up textile articles; sets; worn clothing etc.		Carpets	
	Value	Exporter	Value	Exporter	Value	Exporter	Value	Exporter	Value	Exporter
1	1 335 334	World	1 616 004	World	979 923	World	503 374	World	506 795	World
2	265 175	United States,PR,USVI	427 878	China	453 647	China	286 398	US,PR,USVI	397 720	United States,PR,USVI
3	197 266	Hong Kong, China	231 537	United States, PR,USVI	127 935	Italy	80 368	China	29 670	Mexico
4	172 981	China	128 115	Hong Kong, China	67 943	United States,PR,USVI	23 519	India	17 285	India
5	108 630	India	100 713	Korea, Rep. of	48 244	Viet Nam	22 020	Pakistan	15 663	Iran
6	70 759	Korea, Rep. of	97 837	India	38 794	Brazil	14 311	Brazil	7 860	China
7	65 320	Asia Othr.NS	72 457	Italy	36 236	Indonesia	7 851	Portugal	7 288	Belgium
8	45 265	Thailand	62 646	Mexico	30 075	Spain	6 913	Asia Othr.NS	4 589	Pakistan
9	44 042	Mexico	58 871	Indonesia	20 929	Mexico	6 511	Mexico	2 866	Netherlands
10	**41 003**	**Bangladesh**	**42 650**	**Bangladesh**	18 602	United Kingdom	4 020	Korea, Rep. of	2 746	Egypt
11	34 319	Malaysia	41 480	Thailand	16 289	Portugal	**3 946**	**Haiti**	2 621	United Kingdom
12	30 908	Italy	24 720	Philippines	16 223	Thailand	3 906	Italy	2 470	Australia
13	24 932	Indonesia	24 178	Sri Lanka	11 320	India	3 899	Dominican Rep.	2 406	S.Afr. Cus. Union
14	24 039	Philippines	23 966	Asia Othr.NS	10 844	Germany	3 813	Spain	1 777	Spec Cats
15	23 643	Pakistan	23 658	Pakistan	10 835	Romania	**3 606**	**Bangladesh**	1 645	Thailand
16	18 594	Honduras	18 817	France, Monaco	10 441	Korea, Rep. of	3 385	Indonesia	1 290	France, Monaco
17	17 459	Macau	18 693	Viet Nam	9 296	Asia Othr.NS	3 356	Viet Nam	1 145	Turkey
18	12 111	Turkey	18 685	Dominican Rep.	7 211	Hong Kong, China	2 978	United Kingdom	1 101	New Zealand
19	10 287	US Msc.Pac.I	18 197	Germany	6 156	France, Monaco	2 676	Turkey	**1 005**	**Nepal**
20	9 751	France, Monac	18 043	Malaysia	6 093	Macau	2 249	Sri Lanka	880	Saudi Arabia
21	9 528	Sri Lanka	17 624	Turkey	2 447	Sri Lanka	2 101	Thailand	707	Germany
22	**9 021**	**Myanmar**	13 128	Macau	2 231	Czech Rep.	1 398	Germany	648	Denmark
23	8 405	Singapore	7 771	Honduras	2 063	Dominican Rep.	1 312	France, Monaco	494	Greece
24	7 872	El Salvador	6 894	Portugal	1 959	Israel	1 010	Netherlands	353	Ireland
25	7 169	Peru	6 718	Costa Rica	1 664	Malaysia	946	Japan	311	Italy
26	6 751	Egypt	6 644	United Kingdom	1 505	Costa Rica	905	Hong Kong, China	278	Bulgaria
27	6 550	Mauritius	6 590	Mauritius	1 500	Switz./Liecht.	677	Malaysia	224	Spain
28	6 440	Israel	6 241	Romania	1 487	Hungary	654	Egypt	216	Japan
29	4 377	United Kingdom	**5 566**	**Cambodia**	1 419	Denmark	645	Romania	182	Romania
30	4 196	Portugal	5 178	Bulgaria	1 317	Netherlands	633	Sweden	136	Switz./Liecht.

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Table V.15. Major exporters to Canada in 1999: Selected products (concluded)
(Thousands of dollars)

	Apparel & clothing knitted or crocheted		Apparel and clothing, not knitted or crocheted		Footwear, gaiters and the like: parts of such articles		Other made up textile articles; sets; worn clothing etc.		Carpets	
	Value	Exporter	Value	Exporter	Value	Exporter	Value	Exporter	Value	Exporter
31	3 984	Dominican Rep.	4 866	Singapore	1 298	Slovakia	629	Philippines	**122**	**Afghanistan**
32	3 677	Guatemala	4 524	Spec Cats	1 108	Morocco	569	Czech Rep	108	Poland
33	3 598	Germany	4 239	Poland	1 090	Slovenia	566	Colombia	107	Sweden
34	2 451	Costa Rica	3 684	Nicaragua	1 038	Pakistan	526	Israel	92	Portugal
35	2 427	Colombia	3 361	United Arab Emirates	1 021	Poland	506	Spec Cats	85	Czech Rep
36	**1 990**	**Haiti**	3 044	Guatemala	1 001	Bulgaria	489	Russian Fed	79	United Arab Emirates
37	1 982	Greece	**2 965**	**Maldives**	883	TFYR Macedonia	455	El Salvador	65	Israel
38	1 875	United Arab Emirates	2 917	Hungary	823	Australia	446	Poland	54	Morocco
39	1 853	Viet Nam	2 825	Greece	800	Estonia	412	Turks,Caicos	53	Philippines
40	1 697	Hungary	2 672	Egypt	769	Austria	371	Lithuania	52	Korea Rep.
41	1 613	Jamaica	**2 653**	**Myanmar**	656	Finland	278	Austria	45	Asia Othr.NS
42	1 565	Switz./Liecht.	2 379	Russian Fed.	546	Philippines	233	Saudi Arabia	42	Brazil
43	1 533	Austria	2 258	Spain	483	Bosnia Herzegovina	168	Australia	41	Norway,Sb,JM
44	**1 517**	**Cambodia**	2 074	Denmark	430	Japan	166	Switz./Liecht.	**30**	**Bangladesh**
45	1 114	Australia	2 053	Japan	383	Tunisia	160	Belgium	30	Rep. of Moldova
46	909	Spec Cats	2 020	Slovenia	301	Cyprus	148	Honduras	26	Russian Fed.
47	894	Nicaragua	1 905	Czech Rep.	282	Chile	112	Ireland	20	Viet Nam
48	882	Denmark	1 848	El Salvador	**280**	**Cambodia**	107	Lebanon	17	Armenia
49	**871**	**Lao P's. Dem. Rep.**	1 839	Switz./Liecht	249	New Zealand	103	Bulgaria	16	Indonesia
50	758	Syria	**1 789**	**Nepal**	**207**	**Myanmar**	97	Greece	16	Sri Lanka
51	734	Spain	1 591	S. Afr. Cus. Union	196	Belgium	77	Estonia	14	Finland
52	**481**	**Madagascar (top 62)**	**999**	**Lao P's. Dem. Rep. (top 62)**	**26**	**Cent.Afr.Rep. (top 72)**				
	404	**Nepal (top 64)**	**275**	**Madagascar (top 80)**	**23**	**Senegal (top 73)**				
					15	**Bangladesh (top 75)**				

Table V.16. Major exporters to Japan in 1999: Selected products

(Thousands of dollars)

	Meat and meat products		Fish & crustacean		Dairy products		Milled products	
	Value	Exporter	Value	Exporter	Value	Exporter	Value	Exporter
	7 087 393	World	12 373 679	World	780 726	World	321 116	World
1	2 866 498	US,PR,USVI	1 422 802	USA,PR,USVI	220 422	Australia	75 972	Canada
2	1 046 616	Australia	1 168 784	Russian Fed.	151 505	New Zealand	53 591	Australia
3	820 317	Denmark	992 832	China	73 002	USA,PR,USVI	38 097	US,PR,USVI
4	550 670	Canada	824 267	Korea, Rep. of	50 162	Denmark	37 402	United Kingdom
5	415 580	China	752 527	Indonesia	46 130	Netherlands	24 367	Germany
6	385 638	Korea, Rep. of	720 194	Asia Othr.NS	44 196	France, Monaco	23 046	France, Monaco
7	262 946	Thailand	684 790	Norway,Sb,JM	36 083	China	13 984	Thailand
8	176 486	Mexico	676 195	Thailand	23 904	Germany	12 692	Netherlands
9	174 536	Brazil	628 106	Chile	21 592	Italy	11 755	Belgium
10	100 411	New Zealand	542 335	India	17 921	Norway,Sb,JM	6 640	Indonesia
11	69 784	Netherlands	508 232	Canada	15 986	Canada	5 870	Denmark
12	62 339	France, Monaco	397 457	Australia	11 173	Ukraine	3 630	Malaysia
13	45 916	Ireland	361 808	Viet Nam	9 334	Lithuania	3 486	New Zealand
14	25 625	United Kingdom	265 052	Morocco	8 426	Hungary	3 075	China
15	22 296	Chile	189 287	Philippines	6 557	Russian Fed.	2 669	Ireland
16	8 952	Hungary	175 891	Spain	4 796	Belgium	1 718	Czech Rep.
17	8 920	Argentina	135 764	New Zealand	4 722	Finland	790	Korea, Rep. of
18	7 964	Italy	134 417	Iceland	4 347	Poland	780	Spain
19	4 887	Germany	**113 193**	**Mauritania**	4 315	United Kingdom	450	Philippines
20	4 569	Asia Othr.NS	107 538	Argentina	3 601	Belarus	387	Finland
21	4 559	Uruguay	100 283	Greenland	3 216	Ireland	244	Viet Nam
22	4 282	Indonesia	96 713	Honduras	3 215	Thailand	125	Brazil
23	3 250	Belgium	88 665	Malaysia	3 131	Argentina	89	Panama
24	2 863	Sweden	75 534	Belize	2 883	Switz./.Liecht.	71	Anguilla
25	2 770	Israel	74 858	Ecuador	1 422	Brazil	64	Italy
26	**1 715**	**Vanuatu**	71 731	Korea, Dem. P's Rep.	1 196	Austria	23	Ukraine
27	1 528	Finland	71 674	Singapore	1 125	Asia Othr.NS	23	Asia Othr.NS
28	838	Iceland	61 532	Denmark	1 090	Czech Rep	22	Ecuador
29	684	Malaysia	49 355	Netherlands	926	Malaysia	16	Austria
30	647	Austria	**48 940**	**Eq.Guinea**	887	Singapore	**13**	**Myanmar**
31	640	Ecuador	**46 583**	**Myanmar**	547	Estonia	5	India
32	433	Viet Nam	**44 574**	**Bangladesh**	514	S.Afr.Cus. Union	4	Ghana
33	426	Switz./Liecht.	38 025	Hong Kong, China	434	Indonesia	4	Peru
34	405	S.Afr. Cus. Union	34 694	France, Monaco	404	Sweden	4	Mexico
35	396	Norway,Sb,JM	30 500	US Msc.Pac.I	257	Israel	3	Colombia
36	302	Panama	28 953	Sri Lanka	254	Slovakia	3	Singapore
37	103	Kenya	**28 290**	**Solomon Is**	165	Hong Kong, China	2	Pakistan
38	96	Oman	28 163	S.Afr.Cus. Union	161	Panama		
39	88	Poland	24 707	Ireland	142	Korea, Rep. of		
40	85	Zimbabwe	24 251	Brazil	112	Latvia		
41	61	Costa Rica	23 749	Cuba	102	Viet Nam		
42	51	Ukraine	23 621	Mexico	98	Spain		
43	42	Spain	23 272	Italy	82	Mexico		
44	41	Belize	22 270	Suriname	67	Romania		
45	37	Cameroon	**20 939**	**Madagascar**	64	India		
46	32	Russian Fed.	18 765	Peru	29	Greece		
47	27	Albania	**18 358**	**Gambia**	8	New Caledonia		
48	19	Neth.Antiles	17 874	Pakistan	8	Cyprus		
49	16	Mongolia	**17 797**	**Mozambique**	8	Lebanon		
50	6	Bulgaria	17 766	Palau	**5**	**United Rep. of Tanzania**		
			15 304	**Tanzania (top 58)**				
			7 304	**Uganda (top71)**				
			7 227	**Cambodia (top 72)**				
			5 669	**Senegal (top 78)**				
			4 790	**Kiribati (top 83)**				
			4 196	**Vanuatu (top 85)**				
			3 639	**Maldives (top 89)**				
			1 679	**Guinea (top 94)**				
			1 656	**Yemen (top 95)**				
			499	**Sierra Leone (top 106)**				
			225	**Angola (top 109)**				

Table V.17. Major exporters to the European Union in 1999: Selected products

(Thousands of dollars)

	Bananas		Rice		Sugar		Rum	
	Value	Country	Value	Country	Value	Country	Value	Country
1	414 842	Costa Rica	142 660	United States	297 162	Mauritius	242 722	Bahamas
2	391 779	Ecuador	104 860	India	129 252	Fiji	18 217	United States
3	318 405	Colombia	78 494	Thailand	123 681	Guyana	13 713	Jamaica
4	277 594	Panama	44 094	Pakistan	95 857	Swaziland	12 857	Trinidad and Tobago
5	107 484	Cote d'Ivoire	38 307	Guyana	90 587	Jamaica	11 380	Venezuela
6	105 500	Cameroon	10 444	Australia	37 349	Zimbabwe	10 529	Cuba
7	53 287	Saint Lucia	8 600	Suriname	31 574	Belize	4 626	Barbados
8	42 050	Jamaica	5 801	Aruba	31 477	Trinidad and Tobago	4 389	Guyana
9	41 342	Honduras	2 702	Uruguay	30 532	Cuba	4 068	Dominican Republic
10	37 158	Belize	2 580	Netherlands Antilles	28 587	Barbados	2 074	Brazil
11	31 338	Venezuela	1 965	Egypt	17 502	***Malawi***	1 177	Panama
12	30 726	Saint Vincent & Grenadines	1 568	Taiwan	14 616	Brazil	670	Mexico
13	27 776	Suriname	425	***Madagascar***	10 806	Congo	376	S.Afr.Custom Union
14	23 248	Dominican Republic	346	China	9 675	Saint Kitts-Nevis	374	Saint Lucia
15	22 797	Dominica	341	Japan	6 826	***U.Rp.Tanzania***	232	Australia
16	21 691	Guatemala	297	Israel	5 349	Cote d'Ivoire	227	***Comoros***
17	10 826	Nicaragua	281	Bahrain	4 853	India	219	Nicaragua
18	7 498	Mexico	248	Other Asia	2 821	***Madagascar***	200	Colombia
19	2 140	Brazil	213	Sri Lanka	2 480	Paraguay	159	***Haiti***
20	1 629	Ghana	210	Brazil	2 354	Netherlands Antilles	153	Saint Kitts-Nevis
21	643	United States	174	Argentina	1 768	United States	106	Morocco
22	595	Thailand	172	Switzerland	1 475	***Zambia***	96	Guatemala
23	501	Grenada	82	Canada	1 051	El Salvador	50	Greenland
24	299	Israel	61	Turkey	650	Antigua, Barbuda	36	Turkey
25	224	**???**	59	Saint Vincent &Grenadines	330	Costa Rica	35	Japan
26	211	Philippines	31	Jordan	272	***Myanmar***	30	India
27	144	***Rwanda***	30	Cyprus	272	Philippines	25	Turkmenistan
28	105	***Uganda***	30	Ghana	175	Ecuador	22	Suriname
29	80	Iceland	22	Iran	114	China	22	Switzerland
30	61	***Guinea***	21	Mauritius	107	Colombia	22	Thailand
31	38	Kenya	21	Russian Federation	93	Tunisia	22	United States Virgin Isl.
32	36	India	19	Philippines	49	Slovakia Republic	20	Czech Republic
33	33	Sri Lanka	15	Indonesia	37	Sri Lanka	20	Norway
34	25	Netherlands Antilles	15	Singapore	26	Guatemala	19	Ghana
35	22	Egypt	12	***Myanmar***	21	S.Afr.Custom Union	19	Philippines
36	14	Estonia	12	United Arab Emirates	17	Czech Republic	11	Dominica
37	11	***Cape Verde***	9	Slovenia	17	Pakistan	11	Slovakia
38	11	Nigeria	6	Norway	17	Singapore	8	***Gambia***
39	10	Switzerland	5	Ecuador	15	Switzerland	7	***Cape Verde***
40	7	Canada	5	Korea, Rep. of	12	Hong Kong	7	***Guinea***
41	7	***Togo***	4	Bangladesh	6	Argentina	5	Faeroe Islands
42	6	Malaysia	2	Peru	6	Brunei Darussalam	4	Chile
43	5	***Burundi***	1	Hong Kong	2	Israel	4	Lebanon
44	4	***Equatorial Guinea***	1	Kuwait	1	Mexico	4	Mauritius
45	3	Saint Kitts-Nevis	1	Lebanon			3	Cyprus
46	1	Indonesia	1	***Maldives***			3	Saint Pierre and Miquelon
47	1	Korea, Republic of					1	Bolivia
48	1	Tunisia					1	Ecuador
49							1	Kenya
50							1	Oman

Table V.18. Sensitive sectors

	Agriculture and Food	Textiles, clothing and other manufactures
European Union	Edible Fruits, Edible Vegetables, Cereals, Sugar, Tobacco	
Canada	Sugar, Dairy Products, Meat Products	Art. of Apparel, Footwear, Special Woven Fabrics, Tents, Furniture
United States	Tobacco	Art. of Apparel, Swimwear, Headgear
Japan	Fish, Edible Vegetables, Sugar, Dairy Products, Meat Products, Preparation of Vegetables and Fruits, Animal Oils and Fats, Paddy and Processed Rice	

Source: UNCTAD TRAINS and the UN Comtrade database (tables V.2-V.13).

Table V.19. LDC competitors in sensitive sectors

	OECD	Non-OECD
European Union	Australia, United States, Canada, Turkey	Morocco, Tunisia, Egypt, Saudi Arabia, Argentina, Chile, Israel, Pakistan, India
Canada	United States, European Union, New Zealand	Hong Kong, China, Indonesia, Viet Nam, India, Virgin Islands, Taiwan Province of China
United States	European Union, Turkey, Mexico, Canada, Korea	Venezuela, Brazil, Thailand, Lebanon, China, Costa Rica, Philippines, Indonesia, Argentina, Honduras, Dominican Rep., Nicaragua, Taiwan Province of China
Japan	United States; European Union, Australia, Canada, New Zealand	Argentina, China, SACU, Brazil, Thailand, Singapore

Source: UNCTAD TRAINS and the UN Comtrade database (tables V.2-V.13.).

IV. CONCLUSIONS AND POLICY IMPLICATIONS

Non-reciprocal preferential market access is one policy tool identified as having a beneficial impact on the development process of LDCs. Despite the current level of such preferences, LDCs have only just received complete duty- and quota-free market access (except in arms) into the European Union and still face barriers to approximately fifty per cent of their exports into Canada, Japan and the United States.

This study analyzed the impact of the EU-EBA policy to grant duty- and quota-free market access to the LDCs on the European Union, LDCs and selected third party countries. The study also examined the implications that may arise if Canada, Japan and the United States were to adopt a similar policy and extend their current preference schemes to cover all goods from LDCs, except arms. The analysis was conducted using three different methodologies: computable general equilibrium (CGE) modeling; disaggregated analysis; and case studies.

A. Implications for LDCs

The result that emerged throughout the study was that duty- and quota-free market access will benefit LDCs. The sources of the benefits to LDCs are both improved terms of trade (associated with higher export prices in donor countries' markets) and improved allocation efficiency. The study also shows that the potential benefits to LDCs in terms of export diversification may be important. The European Union has, for years, granted better market access to LDCs compared with other Quad countries. Consistently, LDC exports to the European Union appear to be

both larger in value terms and more diversified. LDCs export to the European Union in 2,222 HS6 lines, whereas the equivalent number of lines in which they export to the remaining Quad members are 758 (Canada), 545 (Japan), 946 (United States).

A major finding was that the size of benefits to LDCs increase disproportionately with the scope of market access was (with the lowest level of benefits arising if only the European Union adopts complete duty- and quota-free market access). There are two main reasons explaining this result. First, the pre-EBA barriers to LDC exports are lower in the European Union than the other Quad members. Second, the pattern of protection in Quad countries is highly complementary. The European Union and Japan have a bias toward agricultural protection, whereas the United States and Canada mostly protect textiles and apparel. It follows that coordinated action from the Quad would stimulate LDC exports in a broader range of sectors and would spread substantial gains across a higher number of LDCs.

Taking advantage of the enhanced market access will require restructuring in beneficiary countries. This is an inevitable consequence of any trade policy initiative. As a consequence of the EU-EBA, some agricultural sectors such as rice and sugar will expand significantly in LDCs. If the remaining Quad countries also grant duty- and quota-free access to LDC exports, not only will the expansion of LDC agricultural exports be broader and more diversified, but textiles and apparel exports will also be stimulated significantly. This should result in the movement of resources in LDCs out of manufactures production. It should be noted that the results obtained from CGE analysis may overestimate the actual extent of sectoral reallocation in LDCs – supply rigidities and bottlenecks associated with a poor working of factor markets are relevant in these economies, which are neglected in CGE analysis. Moreover, even admitting full sectoral adjustment in LDCs, an overestimation of sectoral effects of preferential market access may be associated with the presence of complex rules of origin. As pointed out in the Bangladesh case study, sometimes the utilization rates of preferential schemes may be low or very low, because of problems in the compliance with the rules established by the donor country – CGE modeling neglects such problems.

B. Implications for donor countries

The study shows that the impact of deepening and broadening market access on Quad countries is small. In the case of the European Union, only 3 per cent of LDC exports to that market actually face a tariff and these are concentrated in a few sectors. Even in sugar, a sensitive sector, the percentage decline in value added is less than 3 per cent. The welfare effect in percentage terms is not significantly different from zero. Similar negligible results are evident for Canada, Japan and the United States, when all these countries are assumed to implement duty- and quota-free access to LDC exports.

Perhaps the most relevant result is that the relative size of losses to the Quad donor countries is extremely small when compared to the relative gains to the LDCs. Furthermore, CGE analysis highlights that the terms of trade losses in donor countries are mitigated to a certain extent by allocative efficiency gains associated with tariff reductions.

C. Implications for other developing countries

Any trade policy that involves a degree of discrimination will necessarily have an effect on countries that are neither beneficiaries nor donors. Non-reciprocal agreements are no different in this respect. Whether third countries stand to lose or gain is difficult to say a priori. Much depends on whether exports from third countries substitute or complement those of beneficiary countries. In order to assess the extent to which exports from third countries substitute those of LDCs in donor countries' markets, the CGE analysis was complemented by sectoral analysis conducted at a finer level of disaggregation.

CGE analysis shows that duty- and quota-free market access for LDCs will be associated with losses for several groups of developing countries, notably in Africa, Asia and Latin America. Both, in the case of EU-EBA and an integrated Quad initiative losses to third countries are expected to be negligible in percentage terms. Moreover, losses to Developing Africa are driven to zero if duty- and quota-free access is granted by all Quad countries.

In order to account for substitution relationships occurring at a finer level of sectoral disaggregation, export similarity indexes have been computed. Analysis shows that LDC exports to Quad countries are similar to those of Developing Africa and to a lesser extent, to those of Latin American countries. This evidence is consistent with that obtained from CGE analyis.

D. Conclusions

This study shows that the implementation of the Everything But Arms initiative by the European Union will have positive benefits to LDCs. Losses to the European Union are negligible, as are the losses to non-LDC developing countries. If the EBA initiative is implemented by the remaining Quad members, a larger number of LDCs will benefit from better market access in developed countries' markets and the gains to LDCs will be much higher.

This conclusion holds with two major caveats. First, it is important that both the Governments of LDCs and that the international community ensure LDC economies manage to exploit efficiently the opportunities offered from reduced protection in developed countries' markets. Dismantling existing protection should be considered as a necessary, though not sufficient condition for improved LDC export performance. "Behind the border" measures aimed at improving technical and institutional infrastructure may be required to make better market access effective. Second, the size of the gains to LDCs, although significant, are not sufficiently large to lift them out of their current levels of GDP. In this regard, market access openings, if they are to occur, should be viewed as elements of a broader strategy for development.

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