

The Impact Of The WTO Regime On Developing Countries¹

By

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Abstract

This note summarizes some of the findings of the UNU-WIDER project titled “The Impact of the WTO Regime on Developing Countries”. It highlights the actual, and potential, impacts of a number of preferential trade regimes conducted by the US and the EU on the trade patterns of the beneficiary less developed countries. In the context of liberalization of trade in agriculture, the impact of domestic support measures in the OECD on developing country welfare is also examined. It is found that a shift away from price based support to land based support can generate a win-win situation, raising the political feasibility of the reform process. Finally, the implications of openness on gender earnings differential are examined for Mexico. There seems evidence to support the Becker-hypothesis that competition reduces discrimination.

¹ Prepared for presentation at the CGD-GDN research workshop on *Quantifying the Impact of Rich Countries' Policies on Poor Countries*, Washington DC, October 23-24, 2003.

The broad objective of the UNU-WIDER project titled “The impact of the WTO regime on developing countries” was to explore the prospects as well as the challenges of trade-led growth. The potential benefits of free trade in increasing income levels as well as growth rates are reasonably well grounded in theory. Starting from that premise, the particular emphasis of the project was to assess the extent to which the actual flow of trade is affected by some of the important trade related policies originating in both the developed as well as developing countries. In some cases, the welfare implications of the same policies were also studied.

Unilateral preferential trade arrangements

Jon D. Haveman and Howard J. Shatz² investigated the role of unilateral trade arrangements. Their findings are summarized as follows.

The universal adoption of the Most Favoured Nation (MFN) principle remains the ultimate goal of the ongoing process of trade negotiations, but its all-inclusive character makes it a time consuming, long-term possibility at best. Preferential trading arrangements (PTA) are crucial as quick and stop-gap solutions. At the end of the day, it is through PTAs that the rich and poor countries interact in more substantive ways. PTAs have proliferated in recent years, a phenomenon which is often cited as an indication that the WTO is a failing process. Without trying to decimate the gravity of some obvious problems with the WTO, one may differ with that interpretation and assert instead that the WTO has been an important catalyst in triggering PTAs and enhancing trade flows between countries.

The European Union (EU), Japan, and the United States (US) offer a number of preferential trading arrangements to developing countries. These include the well-known Generalized System of Preferences (GSP) and more recent ones such as the African Growth and Opportunity Act (AGOA of the United States), the Everything But Arms Initiative (EBA of the European Union) and the 99 Per cent Initiative of Japan. Granting substantial trade preferences to the least developed countries (LDC) was emphasized in the the Doha Ministerial Declaration. In the UNU-WIDER project we investigated episodes of unilateral trade liberalization for goods of poorer countries and projected the effect on their exports were the Triad (US, EU, Japan) economies to eliminate tariffs on all such goods. Tables 1 and 2 show the programs uniquely offered by the US and the EU, and, beneficiaries of the US programs, respectively.

² WIDER Discussion Paper No. 2003/46, Developed Country Trade Barriers and the Least Developed Countries: The Economic Results of Freeing Trade, by Jon D. Haveman and Howard J. Shatz, June 2003.

Table 1
US and EU preference programmes

A. Preference programmes of the US

Programme	Relevant dates
Caribbean Basin Economic Recovery Act (Caribbean Basin Initiative)	Enacted 5 August 1983, extended and expanded in 1990. No expiration date.
Andean Trade Preference Act	Enacted 4 December 1991 with expiration set for 3 December 2001. Extended (retroactively) and expanded in 2002 through 31 December 2006.
Caribbean Basin Trade Partnership Act	Enacted 18 May 2000. Preferences expire 30 September 2008 or with the entry into force of a Free Trade Area of the Americas.
African Growth and Opportunity Act	Enacted 18 May 2000. Preferences expire 1 October 2008.

Sources: United States Congress (2000 and 2002) and United States General Accounting Office (2001).

B. Preference programmes of the EU

Programme	Relevant dates
Yaoundé I	Yaoundé I signed 1963, effective 1964.
Yaoundé II Arusha	Yaoundé II and Arusha signed 1969, effective 1971.
ACP-EC Convention of Lomé I	Lomé I signed in 1975, effective 1976-1980.
ACP-EC Convention of Lomé II	Lomé II effective 1982-1985.
ACP-EC Convention of Lomé III	Lomé III effective 1986-1990.
ACP-EC Convention of Lomé IV	Lomé IV effective 1991-2000.
Revised Convention of Lomé IV	Revised Lomé IV amended the agreement.
ACP-EC Partnership Agreement, the 'Cotonou Agreement'	Signed 23 June 2000, effective 20 years.
'Everything But Arms' Council Regulation	Effective 5 March 2001.

ACP refers to the African, Caribbean, and Pacific countries. EC refers to the European Communities.

Sources: Agreements Office, The Council of the European Union (2003), European Union (2001), European Union (1995-2002) and United States General Accounting Office (2001).

Table 2: Eligible countries for US preferences programmes

A. Caribbean trade preference eligible countries

Anguilla *	Guyana
Antigua and Barbuda	<i>Haiti</i>
Aruba	Honduras
The Bahamas	Jamaica
Barbados	Montserrat
Belize	Netherlands Antilles
British Virgin Islands	Nicaragua
Cayman Islands *	Panama
Costa Rica	Saint Kitts and Nevis
Dominica	Saint Lucia
Dominican Republic	Saint Vincent and the Grenadines
El Salvador	Suriname *
Grenada	Trinidad and Tobago
Guatemala	Turks and Caicos Islands *

Notes: * Non-beneficiary countries. These four countries have not requested beneficiary status; countries in italics are currently UN-designated LDCs.

Source: Office of the United States Trade Representative (1999).

B. African growth and opportunity eligible countries

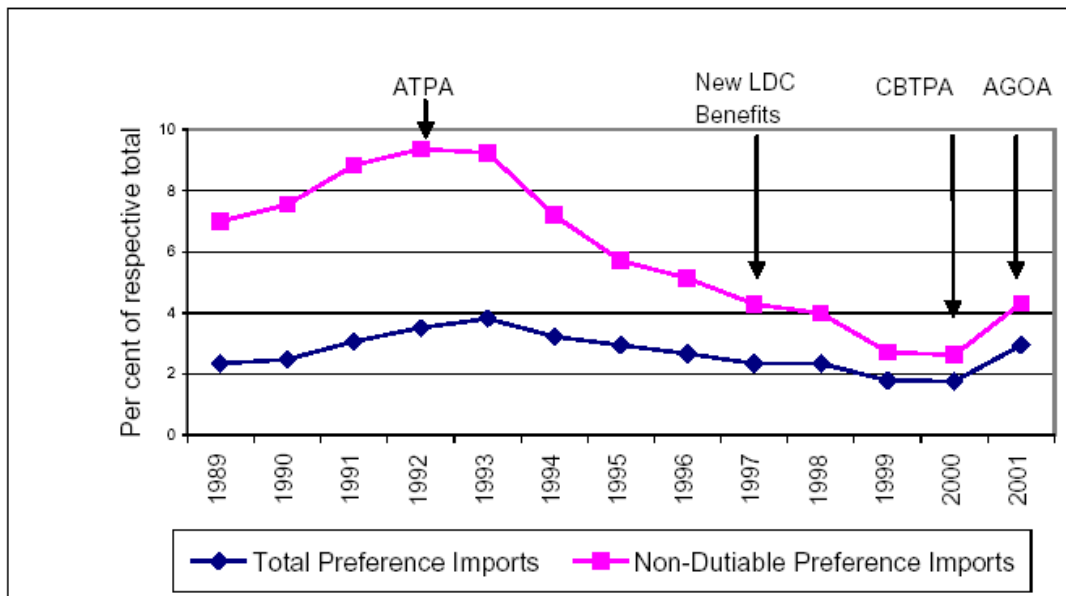
<i>Angola</i> ²	<i>Liberia</i> ²
<i>Benin</i>	<i>Madagascar</i> * (6 March 2001)
Botswana * (27 August 2001)	<i>Malawi</i> * (15 August 2001)
<i>Burkina Faso</i> ²	<i>Mali</i>
<i>Burundi</i> ²	<i>Mauritania</i>
Cameroon * (1 March 2002)	Mauritius * (19 January 2001)
<i>Cape Verde</i>	<i>Mozambique</i> * (6 February 2002)
<i>Central African Republic</i>	Namibia * (3 December 2001)
<i>Chad</i>	<i>Niger</i>
<i>Comoros</i> ¹	Nigeria
Republic of Congo	<i>Rwanda</i>
<i>Democratic Republic of Congo</i> ²	<i>Sao Tome and Principe</i>
Côte d'Ivoire	<i>Senegal</i> * (23 April 2002)
<i>Djibouti</i>	Seychelles
<i>Equatorial Guinea</i> ²	<i>Sierra Leone</i>
<i>Eritrea</i>	<i>Somalia</i> ¹
<i>Ethiopia</i> * (2 August 2001)	South Africa * (7 March 2001)
Gabon	<i>Sudan</i> ¹
<i>Gambia</i> ²	Swaziland * (26 July 2001)
Ghana * (20 March 2002)	<i>Tanzania</i> * (4 February 2002)
<i>Guinea</i>	<i>Togo</i> ²
<i>Guinea-Bissau</i>	<i>Uganda</i> * (23 October 2001)
Kenya * (19 January 2001)	Zambia * (17 December 2001)
<i>Lesotho</i> * (23 April 2001)	Zimbabwe ²

Notes: ¹ Non-beneficiary countries. These three countries have not requested beneficiary status; ² Non-beneficiary countries. These nine countries have been reviewed but not yet been granted beneficiary status; * Textile and apparel beneficiary, with date of textile and beneficiary status in parentheses. Note that the implementation of beneficiary status for Sierra Leone has been delayed pending USTR decision; Countries in italics are currently UN-designated LDCs. Botswana was an LDC from 1971 to 1994.

Source: Office of the United States Trade Representative with the Assistance of the Trade Partnership (2000), Office of the United States Trade Representative (2001b and 2002), and *Federal Register* (various issues).

Between 1989 and 2001, regional US programs and the GSP covered only 1.8 per cent to 3.8 per cent of US imports. They covered between 2.6 per cent and 9.4 per cent of all non-dutiable imports during the same period. The trend of the non-dutiable share has been downward since 1993, possibly because of an expansion of goods coming in duty-free from all countries as a result of the Uruguay Round Agreements.

Figure 1
US preference imports relative to total US imports



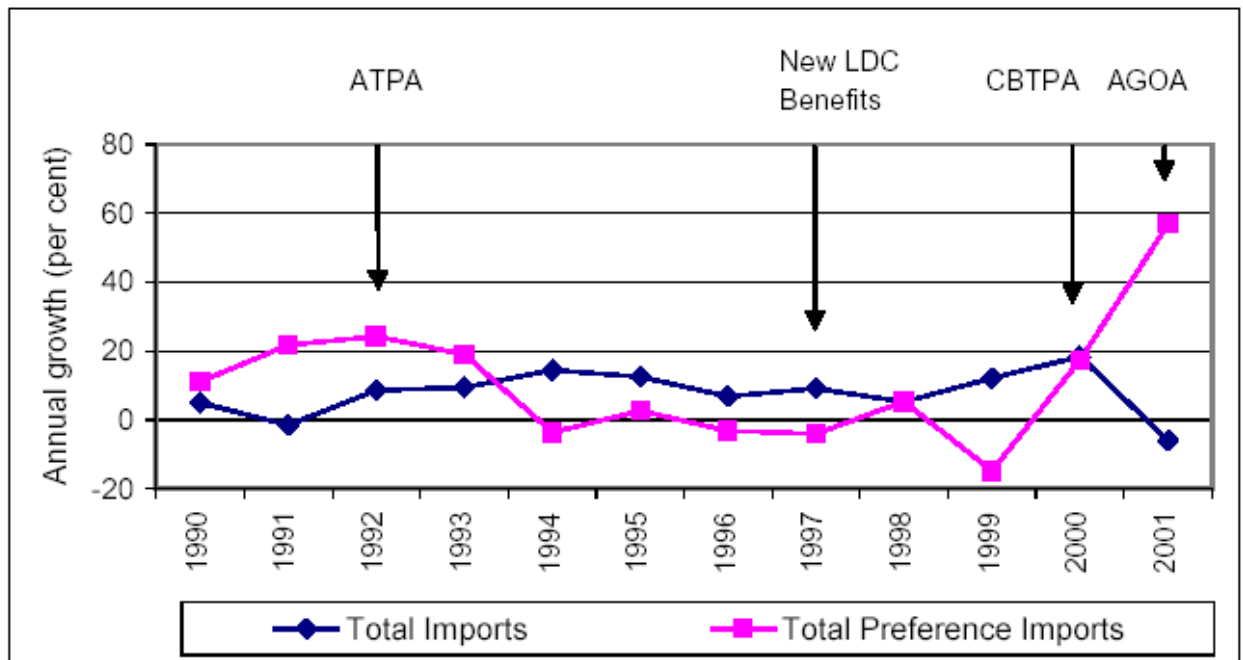
Notes: Total preference imports are shown relative to total imports, while non-dutiable preference imports are shown relative to non-dutiable total imports. Imports are imports for consumption.

Preference Imports include all imports entering under the Generalized System of Preferences, the Andean Trade Partnership Act (ATPA), the Caribbean Basin Economic Recovery Act (CBERA), the Caribbean Basin Trade Partnership Act (CBTPA), and the African Growth and Opportunity Act (AGOA). Arrows show the year each new programme started. New LDC benefits apply to the GSP programme.

Source: United States International Trade Commission (undated).

Growth of trade under these preferences has been volatile, rising recently with the creation of new benefits under CBTPA and AGOA, as shown in Figure 2.

Figure 2
Growth rate of US total imports and US preference imports



Notes: Imports are imports for consumption. Data for each year shows the growth rate from the previous year. For example, the figure for 1990 shows 1990 imports relative to 1989 imports.

Preference Imports include all imports entering under the Generalized System of Preferences, the Andean Trade Partnership Act (ATPA), the Caribbean Basin Economic Recovery Act (CBERA), the Caribbean Basin Trade Partnership Act (CBTPA), and the African Growth and Opportunity Act (AGOA). Arrows show the year each new programme started. New LDC benefits apply to the GSP programme.

Source: United States International Trade Commission (undated).

For the Caribbean beneficiaries, total trade under the programs has expanded considerably since 1989. While total US imports from the 24 countries rose more than 200 per cent between 1989 and 2001, total preference trade – CBERA, CBTPA, and GSP – rose more than 500 per cent. Much of the increase from beneficiaries stems from the new CBTPA. Imports under this program rose from essentially zero in 2000 to US\$5.6 billion in 2001. The non-beneficiary countries saw a fall in exports to the US during the same period.

Table 3
Trade performance under the Caribbean programmes

A. Imports from the 24 beneficiary eligible countries (millions of dollars)

	Value			Per cent change	
	1989	2000	2001	89-01	00-01
Total US imports	6,637	22,161	20,679	211.6	-6.7
<i>of which:</i>					
CBERA, CBTPA, and GSP	1,331	2,994	8,478	536.9	183.1
CBERA imports	915	2,635	2,706	195.7	2.7
CBTPA imports	0	157	5,593	n.a.	3,462.3
GSP imports	416	202	179	-57.0	-11.5
Non-dutiable imports	3,455	14,139	15,089	336.7	6.7
<i>of which:</i>					
CBERA, CBTPA, and GSP	1,331	2,710	7,941	496.6	193.0
CBERA imports	915	2,351	2,623	186.6	11.6
CBTPA imports	0	157	5,140	n.a.	3,173.5
GSP imports	416	202	179	-57.0	-11.5

ATPA imports have also expanded. Table 4 compares pre-ATPA (1991) trade volume with that in 2001 and shows that imports rose 92.5 per cent, while preference imports (ATPA and GSP) rose 278 per cent. All of this rise can be attributed to ATPA, since GSP imports actually fell 62.5 per cent.

Table 4
Trade performance under the Andean Trade Preference Act

A. Imports from the four beneficiary countries (millions of dollars)

	1991	2001	Per cent change
Total US imports	4,969	9,569	92.5
<i>of which:</i>			
ATPA and GSP	492	1,859	278.0
ATPA imports	0	1,675	n.a.
GSP imports	492	184	-62.5
Non-dutiable imports	2,599	5,770	122.0
<i>of which:</i>			
Non-dutiable ATPA and GSP	492	1,836	273.5
Non-dutiable ATPA imports	0	1,652	n.a.
Non-dutiable GSP imports	492	184	-62.5

From Table 5, we find whereas GSP imports totaled US\$600 million from AGOA beneficiaries in 2001, down from US\$704 million the year before, AGOA imports totaled almost US\$8.2 billion, making almost 50 per cent of all imports from these countries duty-free.

Table 5
Trade performance under the African Growth and Opportunity Act

A. Imports from the 36 beneficiary eligible countries (millions of US dollars)

	2000	2001	Per cent change
Beneficiary eligible countries (36)			
Total US imports	18,321	17,573	-4.1
Non-dutiable imports	9,207	14,247	54.7
<i>of which:</i>			
AGOA and GSP	704	8,179	1061.1
AGOA imports	0	7,579	n.a.
GSP imports	704	600	-14.8

An econometric framework was used to estimate the potential effects of removing *all* tariffs. A distinction was made between the *trade-reduction* and the *tariff-diversion* effects. The first provides a measure of the elasticity of substitution between domestic and foreign (composite) goods (or basket of goods). The second tariff effect accounts for the redistribution of expenditures away from imports from countries that face relatively higher tariffs. This effect allows LDC tariff preferences to increase LDC exports relative to exports from other countries.

The following equation was estimated:

$$\begin{aligned} \ln M_{I,j,t,h} = & \alpha + \beta_1 \ln TAUBAR_{I,t,h} + \beta_2 \ln TDIVER + \beta_3 NTM_{I,j,t,h} + \beta_4 SPEC_{I,j,t,h} \\ & + (\beta_5 + \beta_6 \ln GDP_{j,t}) * \sum_{l=1}^4 \beta_{6+l} INC_{l,j,t} + \beta_{11,t} YEAR_t \\ & + \beta_{12} \ln(DISTANCE_{I,j}) + \beta_{13} BORDER_{I,j} + \beta_{14} LANGUAGE_{I,j} + \varepsilon_{I,j,t,h}, \end{aligned}$$

where the dependent variable is imports by country I from country j of commodity h in year t . Here, I indicates one of: the US, the EU, or Japan, j is one of 240 potential exporters, t is the year and h is a 6-digit HS product line within a specific 3-digit SIC industry. TAUBAR is the trade-reduction effect, calculated as the trade-weighted average tariff that country I imposes on imports of commodity h from all countries in year t . TDIVER is the trade-diversion effect and is the difference between the actual tariff imposed on imports by I from j of product h in year t and the average tariff that country I imposes on all countries but j . β_1 and β_2 are expected to be negative with, possibly, $\beta_1 > \beta_2$.

Summary of tariff effects on Triad trade

	Mean coefficient estimates	
	Trade reduction	Trade diversion
US	-8.3	-19.4
EU	-3.3	-8.5
Japan	-7.8	-13.1

Both the trade reduction and the trade diversion effects are bigger for the US compared to other Triad economies. Trade of the EU is the least sensitive. For the US, on average, a one per cent increase in the average tariff reduces imports by 8.3 per cent. Further, a one per cent tariff preference leads to a 19.4 per cent increase in trade for the exporter in

question. These numbers are reasonably large, suggesting significant benefits for LDCs from the unilateral preference programs.

The following table shows the importance of LDC trade in overall Triad imports and also an estimate of the increase in observed trade flows attributable to the existence of tariff preferences. The first two columns of the table present actual data. The third and fourth columns present potential effects generated from the coefficients estimates presented above. Precisely, the figures in Column 3 are predictions of the amount of trade that would not have occurred were all beneficiaries of Triad unilateral preference programs subject to MFN tariffs. Of the three members, the EU imports more from LDCs than do either of the others, both in value terms and as a per cent of total trade. The US imports about half as much, while Japan's imports from LDCs are at less than US\$1 billion.

Triad LDC imports and preferences programmes in force in 2000

Triad member	Total imports in 2000 (US\$ billions)	Imports from LDCs in 2000 (US\$ Billions)	Imports from LDCs	
			resulting from preferences (US\$ Billions)	Change in LDC imports (per cent)
US	1,058.2			
All LDCs		4.6	0.4	10.5
CBERA ³¹		0.3	0.03	13.7
EU	614.3			
All LDCs		9.2	2.8	45.0
ACP		5.8	0.7	14.5
Japan	234.2	0.8	0.3	65.1

The Triad's LDC imports due to unilateral preferences follow a similar pattern. The EU has experienced the largest effect, with trade increases of US\$2.8 billion, followed by the US, US\$0.4 billion, and then Japan, at US\$0.3 billion. However, as a per cent of LDC imports, Japan's program does the most to expand trade, with preferences increasing trade by 65 per cent. The EU programs are in the middle, raising trade by 45 per cent, while US programs have provided only a 10.5 per cent boost to imports from LDCs.

This pattern of benefit may be reflective of the fact that the EU programs are deep and broad in the sense that all 2-digit HS sectors receive coverage and preferences are generally extended to the vast majority of products within a sector. Exceptions include some agricultural and food trade. The Japanese and US programs do not extend to all products in each sector.

The programs of the EU and Japan result in incremental exports of more than 10 per

cent for 26 and 25 countries, respectively. The EU programs are estimated to be responsible for a *doubling* of exports from seven countries, while the Japanese program is estimated to be responsible for a doubling of exports from nine countries. For the EU, the seven include in descending order Solomon Islands, Maldives, Lesotho, Bangladesh, Cambodia, Laos, and Madagascar. Of these, the Maldives, Bangladesh, Cambodia, and Laos benefit only from the EU's GSP program, not its ACP preferences. For Japan, the nine countries include in descending order Mauritania, Gambia, Cambodia, Mozambique, Nepal, Bangladesh, Solomon Islands, Madagascar, and Senegal.

The US programs have led to incremental exports of more than 10 per cent for only 15 countries, of which five including Togo, Burkina Faso, Benin, Angola, and Equatorial Guinea experienced more than a doubling of exports. For the last two countries, imports were more than 40 times what they would have been in the absence of preferences.

As of 2000, the US maintained an import weighted average tariff in excess of 5.3 per cent for all LDCs. The remaining barriers in the EU and Japan were much lower, at 0.02 and 1.8 per cent, respectively. The following table predicts the effects of eliminating the remaining tariffs on Triad imports of LDC goods. Again, this is accomplished by applying the results of the regression analysis in forecasting counterfactual trade flows for the year 2000.

Changes in Triad imports from LDCs as a result of eliminating all tariffs on LDC exports in 2000

Triad member	Total imports in 2000 (US\$ billions)	Imports from LDCs in 2000 (US\$ billions)	Imports from LDCs resulting from enhanced preferences (US\$ billions)	Change in LDC imports (per cent)
US	1,058.2			
All LDCs		4.6	6.8	147.9
CBERA		0.3	0.5	162.3
EU	614.3			
All LDCs		9.2	0.2	2.6
ACP		5.8	0.0	0.1
Japan	234.2	0.8	0.6	69.3

The projections indicate that LDC exports would have been almost US\$7 billion, or 148 per cent, higher in 2000 than was observed had the US levied no tariffs on imports from LDCs. The remaining EU barriers on the other hand are relatively few and their elimination would lead to a 2.6 per cent expansion in imports from LDC countries. Japan represents the middle ground with a projected increase in imports from LDCs of approximately 69 per cent. However, this represents an increase in imports from LDCs of

only US\$0.6 billion. Thus, there is still a considerable amount of scope for unilateral trade liberalization, especially by the US, which can boost LDC exports quite significantly.

The EBA initiative

Lucian Cernat,¹ Sam Laird, Luca Monge-Roffarello, and Alessandro Turrini³ examined the EU's "Everything But Arms" initiative. Their findings are summarized as follows.

It is recognized that the simplicity and stability of the Japanese scheme have contributed to relatively higher share of preferential trade in total imports and high utilization of the scheme. In this sense, the apparent simplicity and absence of restrictions in the EBA initiative imply that it could be important in generating new trade from the world's poorest countries.

The aggregate worldwide distribution of gains and losses of the EBA initiative, focussing on the LDCs and on third, non-beneficiary developing countries, was assessed using a computable general equilibrium simulation model (GTAP). The disaggregated sectoral dimension was explored by means of partial equilibrium simulations (based on the SMART model). The objective was that of simulating the effects of a complete removal of both tariff and non-tariff barriers faced by LDCs in the EU market. The effects of the policy on each country's welfare was examined, as also those on their sectoral trade and production patterns. Welfare changes were further decomposed in their allocative effects and the terms of trade component.

The WIDER study showed moderate, but useful, welfare and trade gains from the EBA initiative, with the largest gains being recorded for sub-Saharan Africa. The CGE and the highly disaggregated partial equilibrium (PE) analyses both indicated that gains are likely to be concentrated in relatively few sectors. In particular, the EU **sugar market** appeared as the single most important source of change. This derives from the substantial price wedge that exists between EU domestic and world prices in this sector.

The increased market access for LDCs comes mostly at the expense of other preference-receiving countries (ACP countries in particular), although the changes are not large. There are some small negative effects on other countries that currently enjoy duty-free access to the EU market or enjoy MFN market access (for example, Polish and Romanian exports of live animals or US and Argentine exports of cereals).

The estimates showed that only a handful of LDCs would see total trade increase by more than US\$100,000, from a combination of trade creation and trade diversion effects.

³ WIDER Discussion Paper No. 2003/47 The EU's Everything But Arms Initiative and the Least-developed Countries, by Lucian Cernat,¹ Sam Laird, Luca Monge-Roffarello, and Alessandro Turrini, June 2003.

Malawi, the biggest winner, stands to increase its cane sugar exports by more than US\$ 25 million. Other African LDCs (Madagascar, Tanzania, Zambia) are likely to see their cane sugar exports increase by between US\$5 and 10 million. The only Asian LDC that shows incremental exports of more than US\$100,000 is Myanmar. The SMART estimates also suggest that Sudan is likely to see significant increases in its exports of molasses and cereals. The largest losers from negative trade diversion, in absolute values, are the current major ACP sugar exporters (Mauritius, Aruba, Fiji, Guyana). There is also a relatively large loss from trade diversion for the United States in grain sorghum.

The Case of Sudan

Sudan is the Middle East's only net sugar exporter, with total sales at around 241154 metric tons, according to COMTRADE statistics. At present, the majority of Sudan's exports are marketed within the Common Market for East and Southern Africa (COMESA) region, notably to Kenya and Uganda under preferential terms of the free-trade agreement. Sudan also exports sugar to other African markets, including other LDCs such as Madagascar, Tanzania, Chad and Niger. The key market that Sudan wishes to tap, however, is the EU, which currently has a quota limit of 30,000 tons per year on Sudanese sugar imports (EIU 2002). This level will rise by an agreed 15 per cent a year, and will have doubled by 2006. Trade with the EU is particularly attractive as the sugar is purchased at the official EU price of around 650 euro/tonne. This compares very favourably with an open market rate in August 2002 of approximately US\$220/tonne (white sugar, fob).⁶² However, so far Sudan has not been able to take full advantage of these preferential market access opportunities. Sugar production is also set to show further growth. Kenana Sugar Company (owned by other Arab and Western private and government investors) is, according to the company records, the largest integrated sugar plant in the world and appears well placed to attract further foreign interest. Other Gulf countries and Turkey have been reported to be examining opportunities in the Sudanese sugar industry (EIU 2002).

Openness and Gender Earnings Differential: The case of Mexico

This topic was studied by Gautam Hazarika and Rafael Otero⁴.

Becker once argued that labour market discrimination was economically inefficient in that discriminating firms must forego a quantity of profit. Thus, firms with more market power, i.e., firms facing less competition, may be more likely to discriminate. It therefore follows that competition in product markets may reduce discrimination in labour markets. The spread of foreign trade has traditionally been a major factor in increased product market competition. Hence, Becker's thesis suggests foreign trade will reduce employment discrimination.

⁴ WIDER Discussion Paper No. 2002/125, Foreign Trade and the Gender Earnings Differential in Urban Mexico by Gautam Hazarika and Rafael Otero, December 2002.

There was evidence of a negative relation between foreign trade linked competition in product markets and workplace gender discrimination in data from the Mexican National Urban Employment Survey (*Encuesta Nacional de Empleo Urbano*).

Assume that log earnings of a male worker is a linear function of, among others, employment in the *maquiladora* sector and the logarithm of hours worked. The logarithm of hours worked is included as a regressor in lieu of the use of log *hourly* earnings as the dependent variable so as not to restrict the work hours elasticity of earnings to one. Hence, let

$$(1) \quad \ln I = a_1 + b_1.M + c.\ln H + X'd + u$$

describe the log earnings of a male worker, where I represents earnings, M is an indicator variable such that $M = 1$ if the worker is employed in a *maquiladora*, and $M = 0$ otherwise, $\ln H$ denotes the log of hours worked, vector X includes such variables as educational attainment, work experience, marital status, occupation, industry of employment, and region of residence, and u signifies the regression error. Similarly, let

$$(2) \quad \ln I = a_2 + b_2.M + c.\ln H + X'd + u$$

describe the log earnings of a female worker. (1) and (2) may be combined as

$$(3) \quad \ln I = a_1 + (a_2 - a_1).F + b_1.M + (b_2 - b_1).F.M + c.\ln H + X'd + u,$$

where $F = 1$ if the worker is female, $F = 0$ otherwise. Hence, the ratio of the predicted earnings of a female worker to that of a comparable male worker in the non-*maquiladora* sector may be calculated as $e^{\hat{a}_2 - \hat{a}_1}$, where $\hat{a}_2 - \hat{a}_1$ denotes the ordinary least squares (OLS) estimate of the coefficient of F in (3). On the other hand, the ratio of the predicted earnings of a female worker to that of a comparable male worker in the *maquiladora* sector may be calculated as $e^{(\hat{a}_2 - \hat{a}_1) + (\hat{b}_2 - \hat{b}_1)}$, where $\hat{b}_2 - \hat{b}_1$ denotes the OLS estimate of the coefficient of $F.M$ in (3). Thus, if the estimated coefficient of the interaction $F.M$ were found to be positive and the variable significant, it may be concluded that the female-male earnings ratio has been higher in the *maquiladora* sector than in the rest of urban Mexico.

Data for this study are drawn from the *Encuesta Nacional de Empleo Urbano* (ENEU). The ENEU provides a quarterly data series that is rich in socio-economic information. The survey samples about 60 per cent of the nation's urban population including about 90 per cent of the population in areas with 100,000 or more inhabitants. This study's findings are, therefore, likely to be highly pertinent to the entire Mexican urban labour force.

The estimates implied that the female-male earnings ratio is significantly higher in the export-oriented *maquiladora* sector than in the rest of urban Mexico. Since the *maquiladora* sector has long been engaged in competition in US product markets, this suggests trade-induced product market competition reduces labour market discrimination. Next, it is found that decline in the gender earnings gap between 1987 and 1999, a period of rapid trade liberalization, is confined to the non-*maquiladora* sector. Indeed, the female-male earnings ratio decreased in the *maquiladora* sector, though yet remaining higher than in the non-*maquiladora* sector. Since the *maquiladora* sector, by its export orientation, is unaffected by import competition, the fact that decline in the gender earnings differential is restricted to the non-*maquiladora* sector suggests that reduction in import tariffs had a role to play. Lastly, it was found that within the non-*maquiladora* sector, decline in the gender earnings gap between 1987 and 1999 is confined to the sub-sector experiencing an elimination of import tariffs. In fact, the female-male earnings ratio decreased in the sub-sector with less than a 100 per cent tariff reduction. This suggests that the elimination of import tariffs potentially reduces workplace gender discrimination.

Liberalization of Agriculture: The role of OECD Domestic Support Measures

There was an attempt to assess the impact of changes in both the mix and the level of domestic support in OECD countries on the welfare of farm households in the OECD and on the national welfare of developing countries⁵. The welfare impacts on developing countries depend on whether they are net exporters or net importers of protected products as well as on the bilateral trade patterns. Trade specialization indexes calculated over the past three decades for program crops (the grains and oilseeds which receive a large share of the domestic support in OECD countries), bounded between +1 and -1, describe the export (positive sign) and import (negative sign) orientation of each region. With few exceptions, these show substantial declines over this period. For example, Indonesia falls from -0.57 to -0.88 and ASEAN4 falls from +0.58 to +0.20. Several regions show shifts from net exporter to net importer status. For example sub-Saharan Africa's index falls from +0.39 in the 1965-75 period to -0.17 in the 1986-98 period, while the trade specialization index for Latin America outside of Brazil, Argentina and Mexico falls from 0.36 to -0.08. As these developing countries have come to rely on imports of grains and oilseeds from the subsidized OECD economies, they have become much more exposed to agricultural reforms that raise the prices of these specific products. As a result, it was found that an across-the-board, 50 per cent cut in all domestic support for OECD agriculture leads to welfare losses for most of the developing regions, as well as for the combined total group of developing countries. The 50 per cent cut in domestic support also results in large declines in farm incomes in Europe, and, to a lesser degree, North America. This makes such a reform package an unlikely political event.

⁵ WIDER Discussion Paper No. 2003/32, OECD Domestic Support and Developing Countries by Betina Dimaranan, Thomas Hertel and Roman Keeney April 2003

An alternative approach to reforming agricultural policies in the OECD would be to focus on broad-based reductions in market price support. In the EU for instance, domestic support has increasingly replaced border measures. According to our modeling results, a shift from market price support to land-based payments could generate a 'win-win' outcome whereby farm incomes are maintained and world price distortions are reduced. This is the direction charted by the OECD in its recent 'Positive Reform Agenda' for agriculture (OECD 2002).

Developing countries may be well advised to focus their efforts on improved market access to the OECD economies, while permitting these wealthy economies to continue – indeed even increase – domestic support payments. Provided these increased domestic support payments are not linked to output or variable inputs, the trade-distorting effects are likely to be small, and they can be a rather effective way of offsetting the potential losses that would otherwise be sustained by OECD farmers. This type of policy re-instrumentation will increase the probability that such reforms will be deemed politically acceptable in the OECD member economies, while simultaneously increasing the likelihood that such reforms will also be beneficial to the developing economies.