Agricultural Liberalization in Multilateral and Regional Trade Negotiations

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Special Initiative on Trade and Integration

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Special Initiative on Trade and Integration

This Working Paper was prepared under the Inter-American Development Bank's Special Initiative on Trade and Integration approved by the IDB's Board of Executive Directors and managed by the Integration and Regional Programs Department. Created in 2002, the purpose of the Special Initiative is to strengthen the Bank's capacity to: (i) contribute to the policy debate in trade and integration; (ii) provide technical support to governments; and (iii) support public outreach on trade and integration initiatives.

This document is part of the first component of the Initiative.

Acknowledgements

C O N T E N T S

AGRICULTURAL LIBERALIZATION IN
MULTILATERAL AND REGIONAL TRADE NEGOTIATIONS

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Agriculture is a strategic issue for the Western Hemispheric countries for both regional and multilateral trade negotiations. However, because of their diversity, countries in the region sometimes pursue different or even conflicting objectives regarding the liberalization of agricultural trade.

This work provides an overview of the forces in favor of and against agricultural trade negotiations. It also measures the level of tariff protection and subsidies according to different methods and introduces new indicators to evaluate tariff protection in bilateral and regional trade agreements. Finally, it displays a list of the most sensitive agricultural products in the Western Hemisphere based on the type of trade barriers they face and provides policymakers with specific recommendations.

INTRODUCTION

For most Western Hemispheric (WH) countries agriculture is a sensitive, complex and heterogeneous sector, and its relevance and meaning vary from country to country. Agricultural trade in the WH totals US$ 200 billion and accounts for approximately 30% of the world's agricultural trade and 9% of total trade in this region. Overall, it absorbs a considerable portion of the economically active population, and represents a high percentage of Gross Domestic Product (GDP) and exports. For small economies such as most of the Caribbean countries, it means a strong dependence on preferential or duty-free access agreements like the Generalized System of Preferences (GSP) or the Lomé-Cotonou Agreements between the European Union (EU) and the African, Caribbean, and Pacific (ACP) countries. The elimination of subsidies is a sensitive issue for the "net food importers" countries, since they depend strongly on low-cost food imports and consequently resist the elimination of export incentives in the developed world such as agricultural export and credit subsidies and food aid mechanisms. For medium-sized economies such as Brazil and Argentina, agriculture is a competitive sector with strong potential to generate trade balance surpluses. These countries can be expected to demand further liberalization. For large economies like the EU, the United States (US) and Japan, agriculture is a politically sensitive sector due to the pressure that lobby groups exert on the lawmaking process. As a result, agriculture is a strategic issue for all American countries for both regional and multilateral trade negotiations.

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This paper has been divided into four sections. The first section (*The Political Economy of Agricultural Protection*) stresses the diversity of pressures in favor of and against agricultural trade liberalization. The second section (*Market Access for Agricultural Products in the Western Hemisphere and in the European Union*) employs various methods to measure the level of tariff protection in agricultural and non-agricultural products. This section introduces new indicators to evaluate tariff protection in bilateral and regional integration agreements. The third section (*Overview of Domestic and Export Agricultural Subsidies in the World*) presents different sources of data and methodologies available to measure subsidies and compares their results according to different criteria. The fourth section (*Identification of Sensitive Agricultural Products*) displays a list of the most sensitive agricultural products in the WH based on various criteria factors: level of tariffs, use of tariff rate quotas, Sanitary and Phytosanitary measures (SPS) and Technical Barriers to Trade (TBT) notifications, subsidies and others. Finally, the last section (*Conclusions and Policy Recommendations*) presents provides policymakers with special recommendations, based on the findings of this research paper.

# I.	THE POLITICAL ECONOMY OF AGRICULTURAL PROTECTION

Within international trade, agribusiness is the most disappointing sector and where the most obstacles have been encountered as regards the effects of market globalization and regional integration. Despite efforts to implement the first multilateral agreement in this area -the Uruguay Round Agreement on Agriculture (URAA)- and the signing of several Preferential Trade Agreements (PTAs) benefiting mainly smaller and poorer countries, developed countries continue to display important tariff and non-tariff barriers in agricultural trade. They also offer heavy subsidies that often distort internal production and export patterns.

However, it is interesting to note that the resistance to the opening of agricultural markets has not prevented an impressive increase in foreign direct investments and mergers and acquisitions in agribusiness worldwide. Ironically, while American, European and Japanese farmers attempt to maintain subsidies, the largest agribusiness corporations from these same countries rapidly expand their operations abroad in the regions most affected by protectionism.

As a result of such a dichotomy, the issue of agricultural protectionism needs to be treated in a realistic and pragmatic way. Considering that agricultural policies not only respond to economic considerations but also to strong political and social pressures, the objective of this section is to provide a framework that differentiates between the economic, social and political forces that are struggling to maintain the protectionist *status quo*, and those attempting to change current conditions both at home and abroad.

## 1.1.	Pressures Against Global Agricultural Trade Liberalization

The following eight factors lead to the rise (or at least the preservation) of agricultural protectionism in the developed world:

(a)	Intense Lobbying by Agricultural Interest Groups

This is the main factor explaining the persistence of high levels of agricultural protection in the world. Farmers and some agricultural related sectors (the machinery and agriculture equipment industry, the agricultural supplies industry, the transportation industry, the warehousing industry and the supporting banks) form powerful political lobbies in Europe, the US and Japan. Because this lobbying is concentrated and focused, the pressure exerted by this small group of beneficiaries is politically more effective than the less focused and more disperse actions conducted by the main losers, namely consumers and taxpayers.[1]

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[1]	Many authors have analyzed the political economy of interest groups and the logic of collective action, especially those belonging to the so-called "Public Choice School of Economics." We suggest the following texts: Becker [1983]; Buchanan [1965]; Hardin [1994]; Krueger [1974]; Moe [1980]; Olson [1971, 1984]; and Sandler [1995].

(b) The Argument for Food Security

War, hunger and xenophobia are the main reasons explaining why agriculture has been historically treated as an "exception" in multilateral liberalization. These motivations prompted Europe and Japan to develop policies that "protect" their consumers from the uncertainties of international market disruptions. Most of these arguments lost their importance after a long period of peace, and technological and logistical improvements that have spread agricultural surpluses worldwide. Although it has lost support in the developed world, the case for food security may remain strong in highly populated countries like India, China and Russia.

(c) Quality Standards and Food Safety

At the end of the 1990s, Europe faced successive crises related to sanitary measures and food quality standards. The most important cases were the dioxin contamination in Belgium, the successive epidemics of "mad cow" and "foot and mouth" diseases, and the growing consumer's aversion to genetically modified foods. Food safety and quality are occupying an increased space within the agricultural budgets of developed countries, and there are risks that some aspects of these issues could substitute traditional tariff-based protectionism.

(d) Intrinsic Characteristics of Agriculture in Developed Countries

The aging of the rural population in developed countries, its low cost of opportunity and high cost of professional relocation are some of the factors explaining the producers and policymakers resistance to reduce agricultural subsidies in wealthy countries. The main argument, although it has not been proven, is that it is cheaper for governments to subsidize agriculture rather than paying the social cost of agricultural unemployment.

(e) Agricultural Non-Trade Concerns (NTC)

In recent years, some countries have tried to promote a "fourth pillar" in the international agricultural negotiations, in addition to the three traditional ones -market access, export subsidies and domestic support-. The most popular expression of NTCs is the evolving concept of the "multifunctionality" of agriculture (see OECD [2001]). According to this concept new subsidies may be justified on the basis that farmers perform a variety of roles that extrapolate commercial production of foods and fibers. From this point of view, the roles played by farmers, as opposed to other economic agents, produce positive externalities for societies that may justify the concession of differential treatments and subsidies. The occupation and management of national territory, the survival of small towns, the preservation of the rural landscape and eco-tourism, the maintenance of peasants' culture and way of life, and, more importantly, the preservation of the environment are several examples of multifunctionality. Among these roles -and many of them are difficult to define and measure- environmental preservation is the central element of this new concept of "rurality". A lot of attention has been paid to trade and environment in the World Trade Organization (WTO)

Development Agenda in Doha as well as in the proposal for Mid-Term Review of the Common Agricultural Policy (CAP) Agenda 2000 presented recently by the European Commission.[2]

These five primary factors explain why agricultural protectionism proves to be so pervasive and long lasting in the developed world. Nevertheless, if only the industrialized countries tried to justify and implement agricultural protectionism, then developing countries might mobilize more leverage to address these five factors. However, the great majority of the developing world also supports the continuity of agricultural protectionism because of one or more of the following three reasons:

(f) Intrinsic Characteristics of Agriculture in Developing Countries

For the majority of the developing world, agriculture is an important component of the GDP, employment and export agenda. In most of these countries competitive agricultural production is concentrated in a very small group of commodities, usually of tropical origin, and which face very little if any protectionism in the developed world. The majority of these countries see protectionism somewhat sympathetically for the following reasons: food security (as already mentioned), maintenance of subsistence agriculture, government support for exports, the fostering of rural development and land reform programs, and, most of all, due to a strong concentration of voters in rural areas. In general, many poor countries tend to offer subsidies and protectionism to the agriculture sector with very limited success. Furthermore, they usually call for "special and differential treatment" in the multilateral trading system.

(g) Food Dependence

Developed countries use to set prices above the supply and demand equilibrium, a practice that generates over-production by definition. Surpluses are released in the world markets through direct incentives to exports (eg, the EU export refunds), government credits (eg, the GSM 102 and 103 programs in the US) and food aid programs. This practice creates the possibility of acquiring cheap foods on the world market, and in turn generates a strong dependency on the part of the so-called "net food importers".[3]

(h) Trade Preferences

PTAs are probably the most important factor explaining the international alliances among wealthy and poor countries in support for the agricultural "waiver" from free trade. The great majority of developing countries depend directly on the preferential access granted to the few commodities that are the bulk of their export schedule. Coffee, cocoa, sugar and bananas are good examples of products for which a completely free market could sweep away a large part of some developing

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[2] Commission of the European Communities. *Communication from the Commission to the Council and the European Parliament. Mid-Term Review of the Common Agricultural Policy*, 25 p. Brussels, COM. July, 2002.

[3] In July 1999, the "net food importing developing countries" in the WH were Barbados, Cuba, Dominican Republic, Honduras, Jamaica, Peru, Saint Lucia, Trinidad and Tobago, and Venezuela. According to which criteria? the WTO one?

countries world's market share. Agreements like the GSP, ACP, AGOA, CBERA, ATPA[4] and others are fundamental to the survival of many exports from the poorest countries of the world.

These are the eight factors, with emphasis on the first one in the case of the wealthiest countries and the last one in the case of the poorest countries that can explain why agricultural protectionism in the world is so well entrenched.

1.2.   Pressures in Favor of Global Agricultural Trade Liberalization

Seven main factors help to explain the pressures on public policymakers to reduce agricultural protection. A review of each one of these factors follows.

(a)   The Uruguay Round Agreement on Agriculture and the Cairns Group[5]

The Uruguay Round (1986-1994) of The General Agreement on Tariffs and Trade (GATT) brought the first multilateral agreement for agricultural trade, with rules and regulations in three basic areas: market access, domestic support and exports subsidies. A 9-year Peace Clause agreement was also signed.[6] In addition, in 1986 a group of 15 competitive commodity exporting countries met in the Australian city of Cairns, and formed a solid free-trade alliance which acted as a third force in the negotiations. Under Australia's leadership, the Cairns Group remains active today, with 18 members. The 4th Ministerial Meeting of the WTO in Doha finally firmed up the track of agriculture negotiations, which should be concluded by January of 2005.

(b)   Agricultural Policy Inconsistencies in the Developed World

In developed countries, the group of farmers that truly benefit from subsidies and protection is continuously getting smaller while at the same time representing a larger portion of assets, including land and the value of production. The economic literature points to the fact that the current US and EU agricultural policy models -which have persisted since the 1930s and 1950s, respectively- do not make economic sense. Currently, only one-third of American farmers receive payments from the government, which in 2000 reached the equivalent of 50% of the agricultural net farm income. The bulk of subsidies essentially benefit the top 7% of producers, who are responsible for almost 70% of the value of the production and receive approximately half of the government payments (an average of US$ 61,000 per farmer in 1999). However, the volume of production is

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[4]   Generalized System of Preferences (GSP), Africa Growth and Opportunity Act (AGOA), Andean Trade Preference Act (ATPA), Caribbean Basin Economic Recovery Act (CBERA) and the Lomé and Cotonou Agreements between the EU and its former colonies from Africa, the Caribbean and Pacific regions (ACP).

[5]   The Cairns Group is a coalition of 18 agricultural exporting countries who account for one-third of the world's agricultural exports: Argentina, Australia, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Fiji, Guatemala, Indonesia, Malaysia, New Zealand, Paraguay, Philippines, South Africa, Thailand and Uruguay.

[6]   Article 13 ("due restraint") of the Agreement on Agriculture protects countries using subsidies that comply with the agreement from being challenged under other WTO agreements. Without this "peace clause", countries would have greater freedom to take action against each other's subsidies, based on the Subsidies and Countervailing Measures Agreement and related provisions. The peace clause is due to expire at the end of 2003 (WTO [2002]).

not the only (or the best) criteria to look at domestic support measures since subsidies in the US are concentrated in a few commodities. In 2000 for instance, cotton, sugar, dairy and cereals accounted for 82% of the government payments made under commodity programs. Hence, subsidies are concentrated in the large farms producing one of these commodities. Roughly three-quarters of the farmers in the US are systematically losing money from agriculture and survive only from non-agricultural income (retirement, urban jobs, hobby farms, etc.). Nonetheless, it should be noticed that wealth accumulation, arising from land price increase for instance, is not taken into consideration in this case. This may understate average incomes estimates since small producers usually own their farmland. Similarly, the CAP consumes approximately half of the EU budget, while the high prices that support the CAP mainly benefit the largest farmers.[7] It is enough to say that less than 20% of European farmers benefit from the incentives to export, and that Europe has been slow to phase out.

Besides the problem of subsidies being concentrated in the hands of a small group of beneficiaries, other indicators reflect the inconsistencies of the agricultural policies in the developed countries, for instance: (i) in all those countries, agriculture has been losing relative importance as a percentage of GDP and employment, which means that its political leverage will be reduced over time; (ii) despite the concession of increasing incentives, two thirds of European and American farmers have abandoned agricultural activities since the end of the World War II, and the rural exodus continues; (iii) the rural population is getting progressively older since the descendents of small farmers do not want to continue to farm; and (iv) there is a transfer of subsidies via market support prices to the land price in Europe and US. Recent studies in the US show that 37% of the benefits of the commodities programs (market support prices and other payments per ton or hectare) go to the landlords. In other words, the policy ends up stimulating an undesirable rent-seeking behavior in the agricultural sector.

(c) New Domestic Pressures

The inconsistencies mentioned above have convinced important sectors to favor a broader reform in trade and agricultural policies. On the one hand, organizations of industrial and end consumers and an increasing part of the American and European media are showing stronger support for agricultural policy reforms. On the other hand, in some countries there is increased pressure for a more "extensive" agricultural policy model, with less use of modern inputs (by stimulating organic production, for instance), and more respect for environmental preservation.[8] In reality, there is a conflict of interest between political and budgetary forces. Politically, environmentalist interests (represented primarily by non-governmental organizations) tend to clash with the farmers' trade interests, mainly with respect to agricultural traditional support systems. Consequently, there is a

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[7]   An important factor that can be observed in the EU is the great disparity in family income that exists among farmers of different member countries. In 1989, a Dutch farmer's family income was approximately four times higher than the European average. On the other extreme, Portuguese farmers had an income equivalent to one third of the overall European average, or only 9%of Dutch farmers. Furthermore, the net income per family for the so-called "large properties" is almost twenty-three times higher than the one for "small properties", and six times higher than the overall average (Hill [2000]).

[8]   This new orientation, discussed previously, is reflected very clearly in the recent position paper of the German Ministry of Consumer Protection, Food and Agriculture, *EU Agricultural Policy for the Future* [2002].

growing competition between the allocation of resources for traditional price support policies and for conservation policies. This conflict has emerged with some strength in the 2002 Farm Bill debates of the US Congress and will be very important at the next stage of reforms of the EU Common Agricultural Policy, scheduled for 2003.

(d) Growing International Pressures

Along with the pressures resulting from the new WTO multilateral trade round, where it seems that countries from the Cairns Group and others will have a stronger voice, the agricultural debate also tends to play a central role for many countries in regional forums. This is the case of the Free Trade Area of the Americas (FTAA), where Mercosur countries will certainly be demanding a balanced agreement that will have more effects on agricultural liberalization than in the North American Free Trade Agreement (NAFTA). At the same time, 10 countries from Eastern Europe, which are seeking accession to the EU, will pressure the EU to expand their agricultural policy, entailing a significant change to the current model. Similarly, the EU will probably face a new assemblage of forces with the United Kingdom and Germany pushing for a broader CAP reform. These forces can be clearly seen in the latest proposal for Mid-Term Review of the CAP in July 2002. Internationally, several chairmen of multilateral organizations, as well as leaders of large private corporations and non-governmental organizations are all pressuring harder for change. The recent communiqué by the World Economic Forum shows increasing discontent with agricultural protectionism. It was signed by representatives of the WTO, OECD, World Bank and FAO, and by non-governmental organizations such as Consumers International and the Catholic Agency for Overseas Development, as well as by CEOs of corporations like Cargill, Unilever, Coca-Cola, General Mills, Kraft, Nestlé, Royal Ahold, A.T. Kearney and Sara Lee.

(e) Internationalization of Large Agribusiness Corporations

There are strong movements towards the internationalization of agribusiness firms. Behind traditional commodities like soybean and chicken there are about half a dozen global players acting at the same time in the main producing regions of the world. In general, transnational corporations try to take advantage of cost gaps, tariffs and national incentives. Most of the time, these enterprises attempt to maintain their "market reserves" in their headquarter countries, and go abroad to produce and explore new markets. Such firms understand cost differences and competitiveness and know that they can operate in a much more efficient way with their production and export bases abroad to supply both local and third markets. While this internationalization grows in terms of investment and mergers and acquisitions, the interests of these firms converge more and more with the interests of countries interested in the elimination of protections, especially because the long-term value of the assets of these enterprises abroad is at stake.

(f) International Migration of Farmers

In a very preliminary way, a growing movement of commercial farmers can be observed worldwide, fueled by one or more of the following factors: (i) large differences in land prices and labor costs between countries with similar productive conditions; (ii) differences in the rigor of environmental

laws, which makes the cost of production much higher in some regions (Netherlands and Denmark are good examples); and (iii) difficulty in expanding agriculture horizontally by exploring economies of scale, due to supply-control mechanisms (production quotas, set-aside, etc.).

As the current model of agricultural policy of the US and Europe is maintained, these differences become stronger. Therefore, Dutch farmers migrate to Eastern Europe, to the mid-western US, and to Australia. American farmers buy cheap land in the Brazilian Mid-west region. It is quite possible that farmers will globalize much faster than agriculture as a sector.

(g) Agricultural Exporters

Groups formed by exporters of agricultural products exert strong pressures in favor of the liberalization of agricultural trade not only in developing countries but also in developed nations. One of the most illustrative examples is the meat sector in the US that would gain tremendously from agricultural liberalization since US exports of meat face very high tariffs in foreign markets while meat producers do not benefit from domestic subsidies at home. However, it should be noticed that exporters groups tend to support more the WTO process of liberalization rather than the FTAA because the most protected agricultural markets are in Europe and Asia, not in the WH. The following table 1.1 summarizes the main pressures for and against agricultural protectionist policies and subsidies in the modern world.

TABLE 1.1
SUMMARY OF PRESSURES FOR AND AGAINST AGRICULTURAL TRADE LIBERALIZATION

Against	For
• Intense Lobbying by Agricultural Interest Groups	• The Uruguay Round Agreement on Agriculture and the Cairns Group
• The Argument for Food Security	• Agricultural Policy Inconsistencies in the Developed World
• Quality Standards and Food Safety	• New Domestic Pressures
• Intrinsic Characteristics of Agriculture	• Growing International Pressures
• Agricultural Non-Trade Concerns	• Internationalization of Agribusiness Corporations
• Food Dependence (Net Food Importers)	• International Migration of Farmers
• Preferential Trade Agreements (PTAs)	• Agricultural Exporters

II. MARKET ACCESS FOR AGRICULTURAL PRODUCTS IN THE WESTERN HEMISPHERE AND IN THE EU

Decades ago, high tariffs were the major cause of restricted market access. As a result most of the GATT's efforts were dedicated to successive tariff reductions. Today, protection is a much more complex subject with many different faces. Table 2.1 shows that agricultural protectionism has been evolving very fast in new directions that are not yet completely covered by the rules of the international trading system. Actually, a few measures have been fully or partially covered by the URAA, while some are covered by additional WTO Agreements (TBT, SPS), and others will hopefully be negotiated in future rounds.

TABLE 2.1
THE EVOLUTION OF WORLD AGRICULTURAL PROTECTIONISM

Policy Instruments	Regulatory Institution/Agreement
• Tariffs and Tariff Rate Quotas	Agreement on Agriculture (UR)
• Non-Tariff Barriers (Technical/Sanitary)	TBT & SPS (UR)
• Subsidies (Domestic, Export)	Agreement on Agriculture (UR)
• Export Credits and Food Aid	No multilateral discipline
• Antidumping and Safeguards	GATT Article VI and ASCM. Agreement on Agriculture: "Peace Clause" (Article 13)
• Labor standards	No multilateral discipline
• Environmental issues	Issue for WTO Doha Round
• Non Trade Concerns	Issue for WTO Doha Round

Notes: UR-GATT, Uruguay Round of Multilateral Negotiations.
TBT, Agreement on Technical Barriers to Trade.
SPS, Agreement on Sanitary and Phytosanitary Measures.
Article VI - Antidumping Measures.
ASCM, Agreement on Subsidies and Countervailing Measures.

Despite the achievements of the URAA, agriculture continues to be the most protected sector in the world economy.[9] Although *ad-valorem* tariffs continue to be the main instrument for trade protection, agricultural products are unique in that they are also protected through specific and mixed tariffs, tariff rate quotas (TRQs), sanitary restrictions, domestic and export subsidies, and non-tariff barriers (price bands, licensing, standards, prohibitions, state trading enterprises, etc.).

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[9] Gibson *et. al.* [2001] estimate that the simple global average for most-favored-nation (MFN) bound tariff on agricultural imports will exceed 60% even after all the cuts that countries carry out through the WTO Agreement on Agriculture.

This section will examine some of those policy instruments affecting agricultural market access throughout the WH. It analyzes current agricultural trade in the region as well as tariff profiles and comparative levels of protectionism. New indicators to evaluate tariff protection in bilateral and RTAs are introduced.

2.1.   Tariff Structure and Trade Profile in the Western Hemisphere

2.1.1.   Comparative Trade Profile

Approximately half of the countries included in this study have agricultural trade surpluses while the other half have agricultural trade deficits. Figure 2.1 shows trade performance as a share of GDP of the five regional blocs within the WH. Even though NAFTA is by far the major hemispheric trader of agricultural products, it has the smallest trade as a percentage of GDP. Mercosur and Central America have the largest trade surplus in relative terms, while the 15 Caribbean countries show an overall deficit, mainly concentrated in food products. Specifically, in 2000, the US, Argentina, Brazil and Canada had the largest agricultural trade surpluses, respectively; Mexico, Venezuela, the Bahamas and the Dominican Republic had the largest deficits (see Appendix A).

FIGURE 2.1
TOTAL AGRICULTURAL TRADE
IN THE WESTERN HEMISPHERE AS SHARE OF GDP, 2000
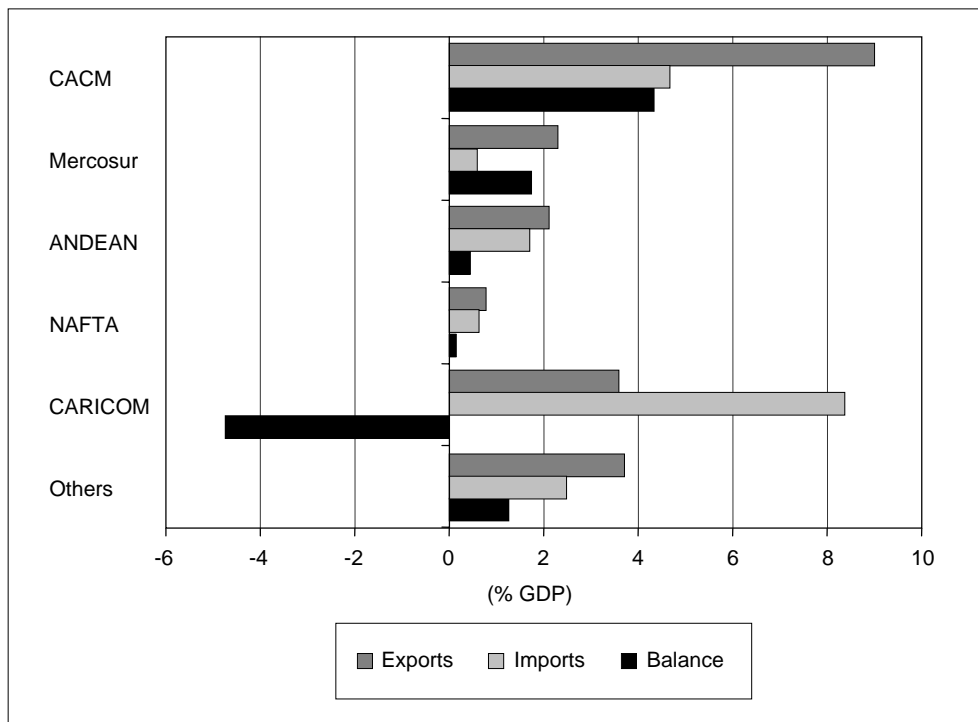
Note: Others are Chile, the Dominican Republic and Panama.
Source: 2001 Hemispheric Database of the Americas.

The concentration of exports within some specific agricultural product groups is a clear phenomenon in Latin American and Caribbean countries. The Hirschmann-Herfindahl Index (HHI)[10] can be used to measure the level of trade concentration in specific products. According to the HHI, the exports of WH countries are approximately seven times more concentrated than their imports. Caribbean and Central American countries have the highest levels of export concentration in specific products (see Figure 2.2). Examples are St. Kitts and Nevis, where raw sugar represents 75% of agricultural exports; St. Lucia, where bananas and beer represent 92% of exports; and Honduras, with coffee and bananas representing 74% of exports.

FIGURE 2.2
AGRICULTURAL TRADE CONCENTRATION IN THE WH:
THE HIRSCHMANN-HERFINDAHL INDEX
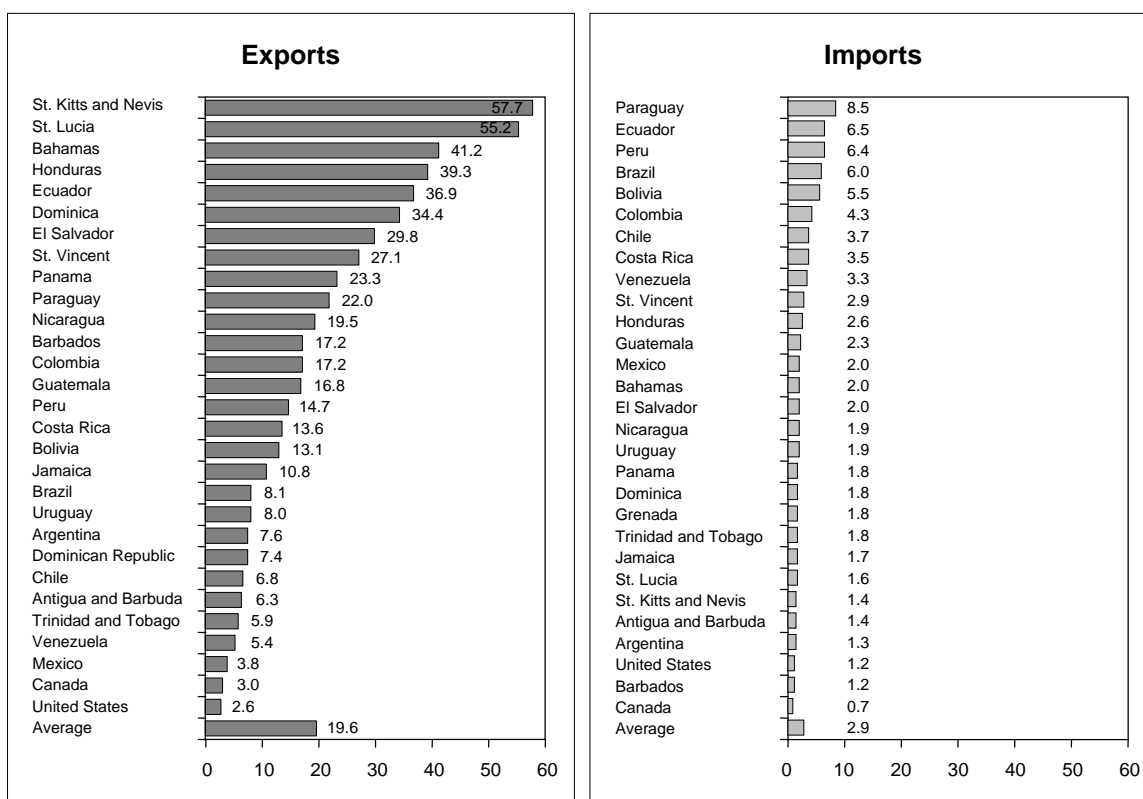
Source: 2001 Hemispheric Database of the Americas. INT-IDB calculations.

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[10] The Hirschmann-Herfindahl Index (HHI) is equal to the sum of the squared shares of all products (tariff lines) exported, where *i* stands for a particular product and *n* is the total number of products. When a single export product or tariff line produces all the revenues, the HHI equals 100; when export revenues are evenly distributed over a large number of products, HHI approaches zero.

$$HHI = \sum_{i}^{n} \left(\frac{x_i}{\sum_{i}^{n} x_i} \right)^2 * 100$$

Figure 2.3 clearly shows that 10 WH countries have more than 50% of their agricultural exports concentrated in only 3 products: coffee, bananas and sugar. The most diversified countries in terms of exports are the US, Canada and Mexico.

FIGURE 2.3
AGRICULTURAL EXPORT CONCENTRATION
FOR CARIBBEAN AND CENTRAL AMERICAN COUNTRIES (2000)
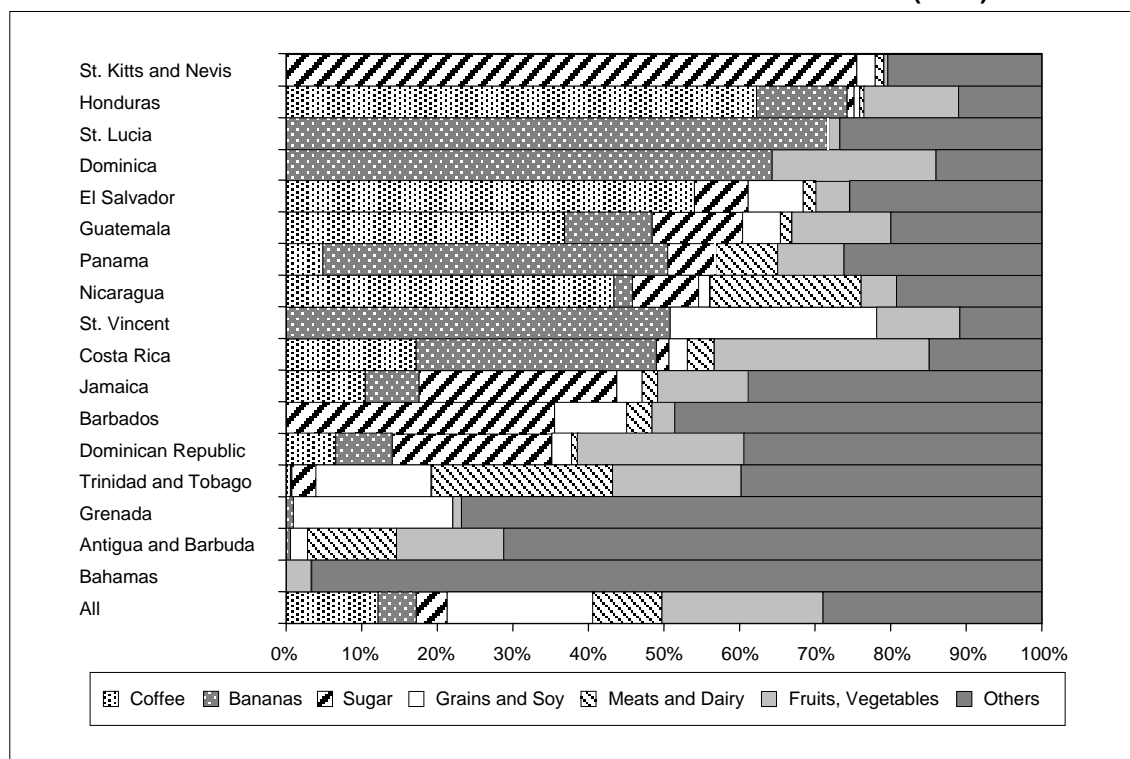
Note: All - Average for all LAC countries.
Source: 2001 Hemispheric Database of the Americas. INT-IDB calculations.

2.1.2. *Applied Methodology and Data Compilation*

The first step in developing tariff profiles by country and by main group of products is to convert specific and mixed tariffs[11] into *ad-valorem* equivalents (AVE). According to the WTO, *ad-valorem* equivalents are usually calculated "either by comparing collected custom revenues to the value of imports or by comparing unit values of traded products with the applied non *ad-valorem* tariff". The methodology followed in this study to obtain AVE was to divide the product's specific rate by its import price. In this case the price was calculated by dividing the value of imports by the quantity of imports. Where no trade data was available, the price of the closest related product

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[11] Specific tariffs are tariffs that are set as a monetary amount per unit of import, i.e. a product can have a specific tariff, which charges US$1.50 per kilogram. Countries may also combine *ad-valorem* and specific tariffs so that a product's tariff may be the sum of the *ad-valorem* tariff plus the specific tariff, called mixed or compound tariffs.

was used. The data used corresponds to year 2000 and comes from the 2001 Hemispheric Database of the Americas (HDA) and the Agricultural Market Access Database (AMAD).

This section uses data collected by the Inter-American Development Bank and compiled in the 2001 Hemispheric Database of the Americas for 30 of the 34 FTAA member countries (excluding Belize, Suriname, Guyana and Haiti, due to lack of trade-related data). The study uses primarily MFN applied rates, since these will be the tariffs used in the FTAA negotiations. However, to provide a realistic overview of the current level of trade protection the analysis was extended to include preferential and intra-bloc tariffs.[12]

In order to analyze and compare protection levels, several country databases were created for specific countries using data from the year 2000.[13] The objective was to compile all trade-related data available for products by country in one database. The databases contain data in both 6- and 8-digit (or more) Harmonized System Code tariff lines,[14] and include product descriptions, MFN *ad-valorem* tariffs, MFN specific and mixed tariffs, preferential rates, and AVE for such tariffs, imports value, quantity, imports price, exports value, export volume, indication of whether the tariff is a TRQ,[15] and tariff peaks (see Appendix A). In addition, the data was further analyzed on an aggregate basis by being grouped into 32 "sensitive"[16] groups of products based on the International Bilateral Agricultural Trade (IBAT) Database. Once all tariffs were expressed in terms of AVE, we were able to calculate the number of tariff lines and TRQs, mean, median, tariff dispersion, maximum and minimum tariffs, and frequency distributions. J.C. Bureau from INRA-France provided data for the EU.

Up to the 6-digit Harmonized System level (HS6), tariff schedules across countries use identical categories, which are established by the WTO, to aggregate different products. Beyond the 6-digit level, this correspondence does not exit, since aggregation may differ from country to country. Thus, in order to calculate the weighted average tariffs in sections 2.2 and 2.3, each country's tariff lines and trade flow data were aggregated into 5,113 category definitions to conform to the Harmonized System at the 6-digit level. Agricultural products were aggregated into 676 tariff lines while non-agricultural products were aggregated into 4,437 tariff lines (a subgroup of 833 tariff lines was used for textile products).[17] Furthermore, for these two sections, the over-quota

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[12] For different methodologies to measure trade protection in agriculture see Bouët [2000] and Bouët, Fontagné, Mimouni and Kirchbach [2002].

[13] For some countries where 2000 data was not available 1999 data was utilized.

[14] "Tariff lines" refer to the category to which WTO members legally-established tariff applies.

[15] A TRQ is a two-tiered tariff under which a limited volume of goods (the quota amount) can be imported under the lower *in-quota* tariff, with any additional import quantity being subjected to a higher *over-quota* tariff. For more details, see IATRC [2000] and Skully [2001a].

[16] "Sensitive products" are those accounting for a large percentage of a country's total exports and that face relative high import barriers.

[17] The definition of the WTO Harmonized System for Agricultural sector is covered by the following chapters: 1 to 24 less fish and fish products; 2905.43 (manitol); 2905.44 (sorbitol); 33.01 (essential oils); 35.01 to 35.05 (albuminoidal substances, modified starches, glues); 3809.10 (finishing agents); 3823.60 (sorbitol n.e.p); 41.01 to 41.03 (hides and skins); 43.01 (raw fur skins); 50.01 to 50.03 (raw silk and silk waste); 51.01 to 51.03 (wool and animal hair); 52.01 to 52.03 (raw cotton, waste and cotton carded or combed); 53.01 (raw flax); 53.02 (raw hemp). All other chapters were considered to be industrial (non-agricultural) sectors.

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tariff rate was used when TRQs' tariffs were aggregated at the 6-digit level. Wainio and Gibson [2001] have stressed that TRQs do, in most cases, represent a binding constraint on additional trade. As such, over-quota rates give a more accurate account of the level of protection provided by the tariff schedule and should be used to reflect the overall restrictive nature of a country's trade policy. However, it should be noted that this might overestimate the impact of TRQs, in the case where in-quota rates are not 100% utilized for a product. Nevertheless, any approach entails some kind of bias: using the simple mean underestimates while using maximum does overestimates the effect of TRQs.

2.1.3. Comparative Tariff Structure

The most commonly used methods to measure tariff protection are the mean to depict the overall level of tariffs, and the standard deviation to measure tariff dispersion. Overall, the average tariff on agricultural products in the region is 16%, with Barbados, the Bahamas, Mexico, Dominica, the Dominican Republic and Canada having the highest AVE, averaging over 20%. Nicaragua, Chile, Guatemala and Bolivia have the lowest average tariffs, below 10% (Figure 2.4 and Appendix A). However, aggregates such as the mean and dispersion do not tell the whole story. For example, comparing the mean and the median of a country's tariff schedule may provide more valuable insights into the agricultural trade policy of different countries.[18]

Most WH countries have close mean and median tariffs. The median indicates the midpoint of the AVE tariff's schedule distribution in an ascending order of value. Nevertheless, in countries like the US, Canada and Mexico, the median is far lower than the mean. This indicates the simultaneous presence of a large number of tariff lines far below the mean, and a few tariffs lines with very high rates (greater than 50%) commonly named "tariff peaks" or "megatariffs". In other words, NAFTA countries are characterized by the application of very high tariffs on a very small group of politically sensitive products, while the rest of their tariffs are kept at low levels[19] (see Figure 2.5). The opposite is true for some Central American and Caribbean countries, where a large number of tariffs lines are set at high levels (greater than 15%), but a small group of very low and even zero tariffs exert downward pressure on the mean.

In fact, NAFTA countries have disparate means and medians, with high dispersion of rates and the highest levels of maximum tariffs in the WH. Canada ranks first in the highest tariffs: 98 tariff lines are above 50%, with some products from the milling industry reaching equivalent rates of up to 530%. In the case of the US, 4% of its tariff lines (sixty-one lines) have rates above 50%, and up to 350% on some tobacco products. Nevertheless, the US large proportion of low rates (83% of its tariff lines have rates below 15%) offsets the impact of its megatariffs and ultimately results in a low overall average. In the case of Mexico, 5.1% of its tariff lines (54 tariff lines) are

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[18]   The arithmetic mean is what is commonly called the average and is the sum of all the scores divided by the number of scores. Dispersion is measured through the standard deviation, which measures the degree to which a value varies from the distribution mean. The median is the midpoint of a tariff schedule's distribution in ascending order of value: half the scores are above the median and half are below the median.

[19]   Olarreaga and Soloaga [1997] study several industry conditions that are correlated to high tariff protection, including high levels of industry concentration, low import penetration ratios, low share of sector production that is purchased by other sectors as intermediaries, high labor/capital ratio, and a small share of intra-industry trades.

above 50%, and up to 260%, but Mexico also represents the third highest mean among all FTAA countries (23%). Canada is the country that has the largest percentage of zero tariffs (40.1%), however it is also the country with the highest amount of tariff rates above 50% (7.3%). Mercosur countries have only a small percentage of zero tariffs (8.4%), but do not have MFN *ad-valorem* tariffs that are above 30% (only one third of the tariffs lines are above 15%).

FIGURE 2.4
COMPARATIVE TARIFF STRUCTURE IN AGRICULTURE (HS8 2000)

Source: 2001 Hemispheric Database of the Americas. INT-IDB calculations.

17
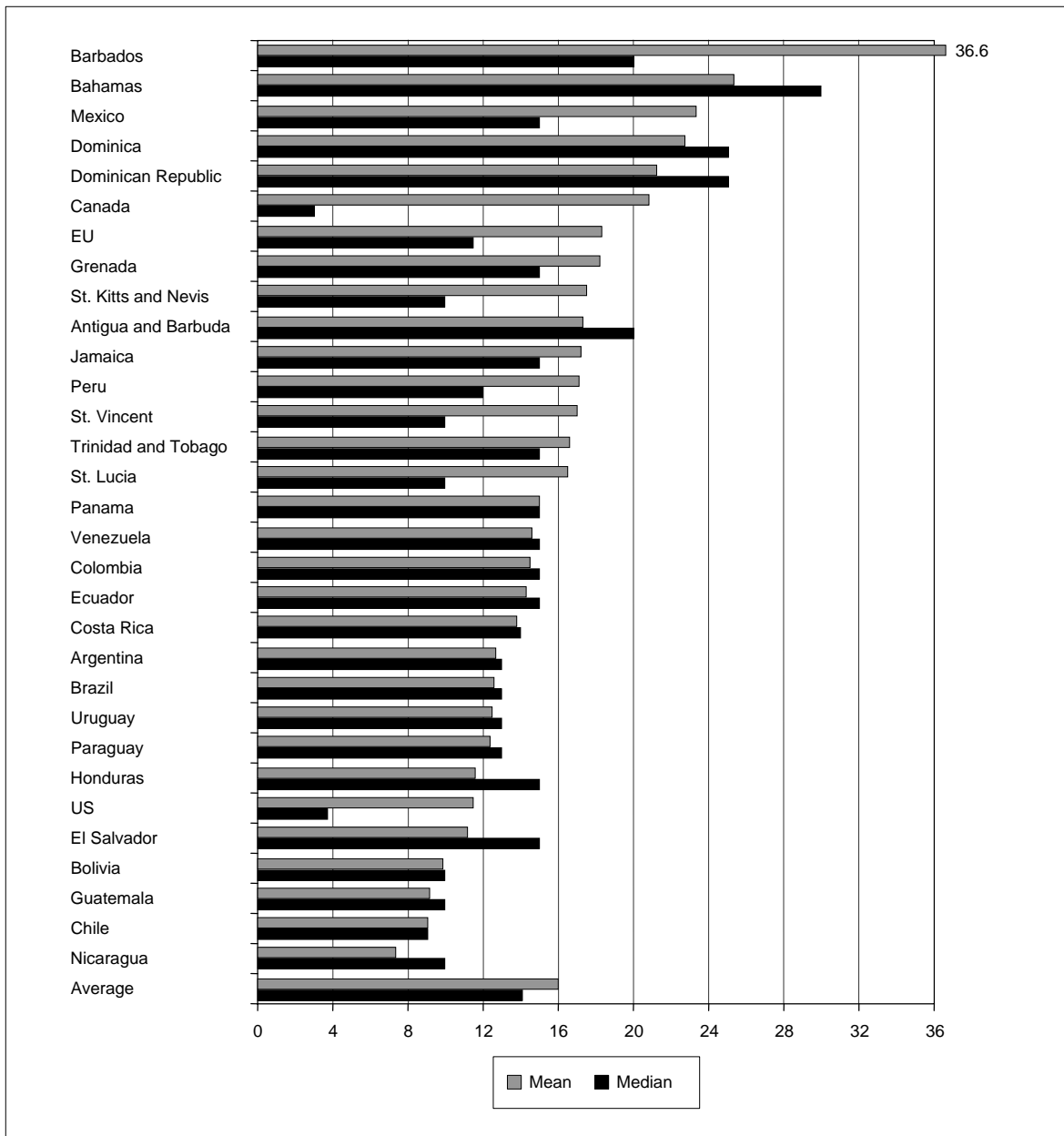
FIGURE 2.5
COMPARATIVE TARIFF STRUCTURE: FREQUENCY DISTRIBUTION AT HS8 (2000)
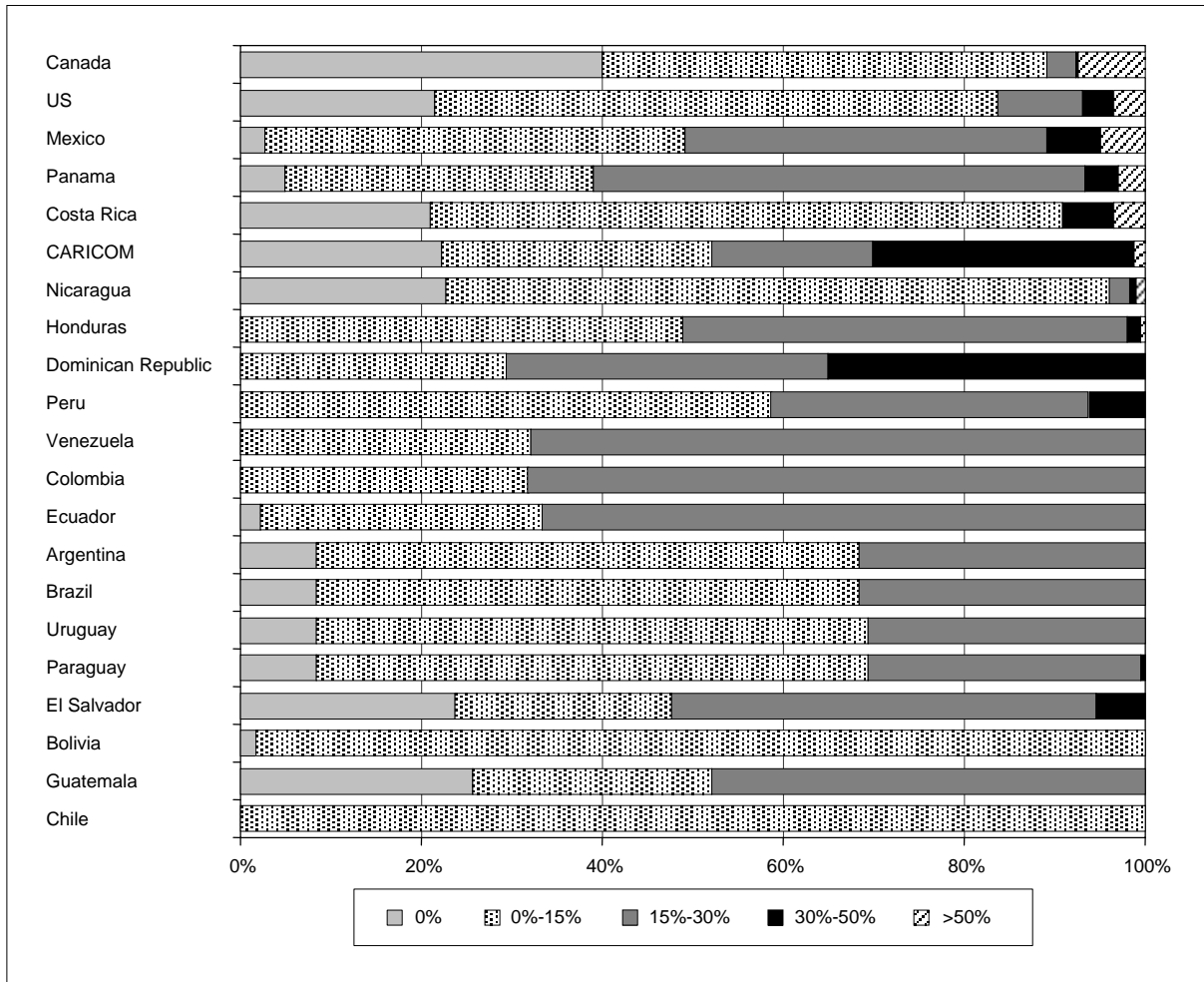
Source: 2001 Hemispheric Database of the Americas.

It is interesting to notice that all South American countries except Peru have means and medians that are very close. This shows that the process of liberalization after the 1980s was accomplished without exclusions in the agricultural sector. Mercosur countries in particular have experienced a strong convergence in their agricultural tariffs. Their means are all approximately 12%; medians are exactly 13%; and their standard deviations are about 6%. Andean countries have means and medians between 10% and 17% and dispersions below 6.5%. Chile is a special case. Even though its *ad-valorem* tariffs appear to be one of the lowest, set at 9% for all products, agricultural imports are subject to price bands[20] and other restrictions that significantly protect against imports. This is

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[20] Price bands regulate markets so prices remain within a specified range. In the case of Chile, for example, the price band for wheat is a pair of variable tariffs: one increases to defend a floor price and one decreases to defend the ceiling price. The band has two tariffs, an *ad-valorem* tariff that is always imposed, and a specific tariff that is determined by a tariff algorithm. When international prices are between the floor and the ceiling, the specific tariff is zero and only the *ad-valorem* tariff is imposed. When the international prices are below the floor or above the ceiling, the specific tariff is increased or lowered to keep the price within the set limits. The price band loses its capacity to offset international prices when the tariff increase reaches its bound level or when it is decreased to zero. See Skully [2001b].

a clear example of how the existence of non-tariff barriers makes measurement of tariff protection a difficult task.

Another important measure of tariff protection is the type of tariff applied. Tariff barriers in agriculture are not only based on *ad-valorem* tariffs (high means and presence of peaks), but also on the extensive use of specific and mixed tariffs, and TRQs.[21] NAFTA countries particularly stand out with their use of this kind of tariffs. More than 43% of US tariffs are non *ad-valorem* (specific or mixed), followed by Canada with 27% and Mexico with 5% (see Figure 2.6). Some Caribbean countries such as Antigua, Barbados, and the Bahamas, also widely apply specific tariffs, resulting in higher protection according to the level of competitiveness of the exporting country. All the other Latin American countries use only *ad-valorem* tariffs, with the exceptions of El Salvador and Guatemala.

FIGURE 2.6
COMPARATIVE TARIFF STRUCTURE: *AD-VALOREM*, SPECIFIC AND MIXED TARIFFS (HS8 2000)
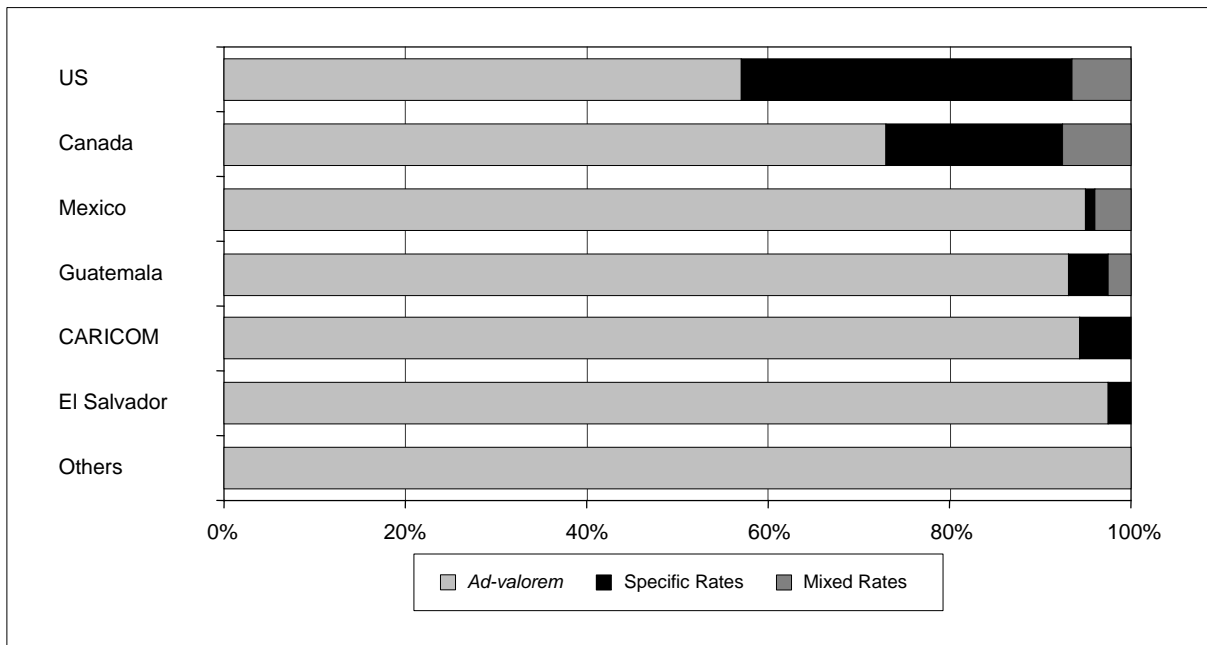
Note: Others account for all other South American countries.
Source: 2001 Hemispheric Database of the Americas.

2.2. Measuring Tariff Protection for Sensitive Export Products

A country that mainly exports raw sugar and bananas is not interested in the overall level of tariffs imposed by another partner, but only on the tariffs imposed on its main exports. In fact, this country will concentrate in the additional access it can gain for its primary traded products through

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[21] *Ad-valorem* tariffs are calculated as a percentage of the value of the goods, which is normally the cost, insurance and freight (CIF). Specific tariffs are calculated as a percentage or a fixed amount per volume units (i.e., kilograms), and consequently result in higher protection levels the more competitive the exporting country is (lower import prices result in higher AVE). Mixed or compound tariffs are a combination of *ad-valorem* plus specific rates.

multilateral and regional negotiations. Statistical aggregates such as those shown in the previous section 2.1 (e.g., means, medians and dispersions) do not measure the real importance and levels of tariff protection on very specific and sensitive products.

A better technique to assess the real level of tariff protection would be to use weighted averages instead of simple means, since these take into account the proportional relevance of sensitive products rather than treating all products equally. The question that arises when calculating weighted averages is what values should be used to properly weight the tariffs that a country faces. Values such as production, consumption, import or export appear to be the natural candidates, but given that the purpose is to measure trade protection, only imports and exports should be considered. However, using import values produces a downward bias because the imports of items facing high tariffs will have little weight, as these high tariffs are likely to create "trade chilling" effects by restraining or even impeding trade. For example, even though the Brazilian sugar industry is very competitive, representing 57% of the WH total sugar exports, it only accounts for approximately 10% of US total sugar imports. This is due to the high above quota tariff applied to sugar imports. Thus, weighted average tariffs should depend on the importer tariffs and the composition of a country total exports to the world (not the exports between partners).[22] This approach emphasizes those tariffs in importing countries that are of greatest importance for exporting countries, and provides a dynamic view of the level of protection that each country imposes and faces in regards to its trading partners. Another advantage of this approach is that by using global export values, potential trade gains are incorporated, providing a more accurate picture of each country's relative competitiveness. For instance, in the case of sugar, it is expected that once the US high over-quotas sugar tariffs are eliminated, Brazil's share in the US total sugar import would increase. Figure 2.7 compares the values of US imposed MFN tariffs using the weighted average and simple mean method for each one of its WH partners. The figure shows that most countries face a weighted tariff in the US that is higher than the simple mean tariff (CARICOM corresponds to 10 countries of the Caribbean Community). This illustrates that these countries' sensitive exports face high tariffs. Brazil faces the highest weighted average tariff for agricultural products (35.4%) mainly explained by the high tariffs on its tobacco, sugar and orange juice exports. Venezuela's high value is mostly due to tobacco and dairy products.

Appendix B provides a table with the average agricultural MFN tariffs weighted by total exports for all WH countries and the EU. Using this methodology, on a bilateral basis the highest average duty would be faced by Ecuador (83.8%), Panama (76.1%) and Uruguay (75.3%) respectively if all their products were exported to the EU. In the case of Ecuador and Panama, the high tariff barriers applied to bananas can explain the elevated values to a great extent. Uruguay, on the other hand, faces high tariffs on its meat and diary products exports. If only the WH countries are considered, the highest tariffs are faced by the Dominican Republic (55.3%) and CARICOM (51.7%) both against Mexico, and Uruguay (51.1%) against Canada. For most Caribbean countries

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[22] Share of exports of product i in total global exports for each country is calculated as follows:

$$y_i^B = \frac{x_W^i}{\sum_{i=1}^{n} x_W^i}$$

where: x_W^i = country's total exports of tariff line i to the world.

and the Dominican Republic, high duties on sugar are the main cause while for Uruguay, the main reason is still its dairy products. Overall, Mexico has the most protected market for agricultural products, followed by the EU. Compared to all WH countries, Mexico's average agricultural tariff is approximately 37%.

FIGURE 2.7
US IMPOSED MFN AGRICULTURAL TARIFFS WEIGHTED
BY EACH PARTNERS EXPORTS (HS6 MAX)
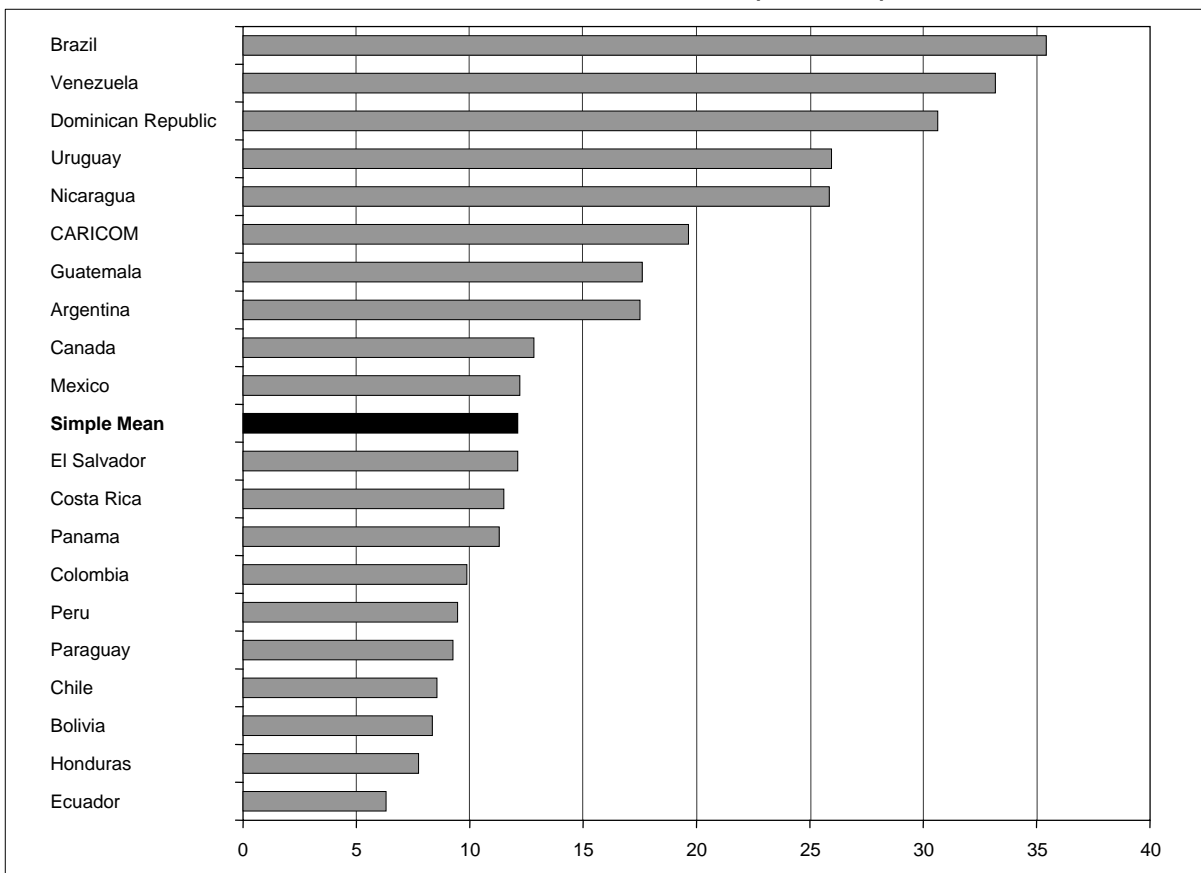
Source: 2001 Hemispheric Database of the Americas. INT-IDB calculations.

2.3. Comparing Tariff Protection in the Western Hemisphere

So far, in the previous sections, we have concentrated our analyses on the MFN tariff barriers faced by agricultural products. However, to provide a realistic picture of the effects of trade liberalization two other factors should be taken into consideration: (a) MFN versus Preferential Tariffs and (b) Agricultural versus Industrial Tariffs.

(a) Most-Favored-Nation (MFN) versus Preferential Tariffs

The first factor is the existence of many PTAs and free trade areas in the WH. During the last decade more than 30 bilateral and regional agreements have been negotiated in the region. These agreements have significantly increased trade between partners by providing preferential or duty-

free access to a large portion of hemispheric trade. When these preferential agreements are taken into consideration a different picture emerges. Figure 2.8 compares the US MFN and preferential imposed tariffs, weighted by exports, for agricultural products. In the case of Ecuador preferential access provides a 73% reduction in the tariff, decreasing it from the 6.3% to 1.7%. For Canada and Mexico, which are partners in the NAFTA, the tariff is reduced by approximately 40%.

FIGURE 2.8
US 2000 MFN VS PREFERENTIAL IMPOSED AGRICULTURAL TARIFFS
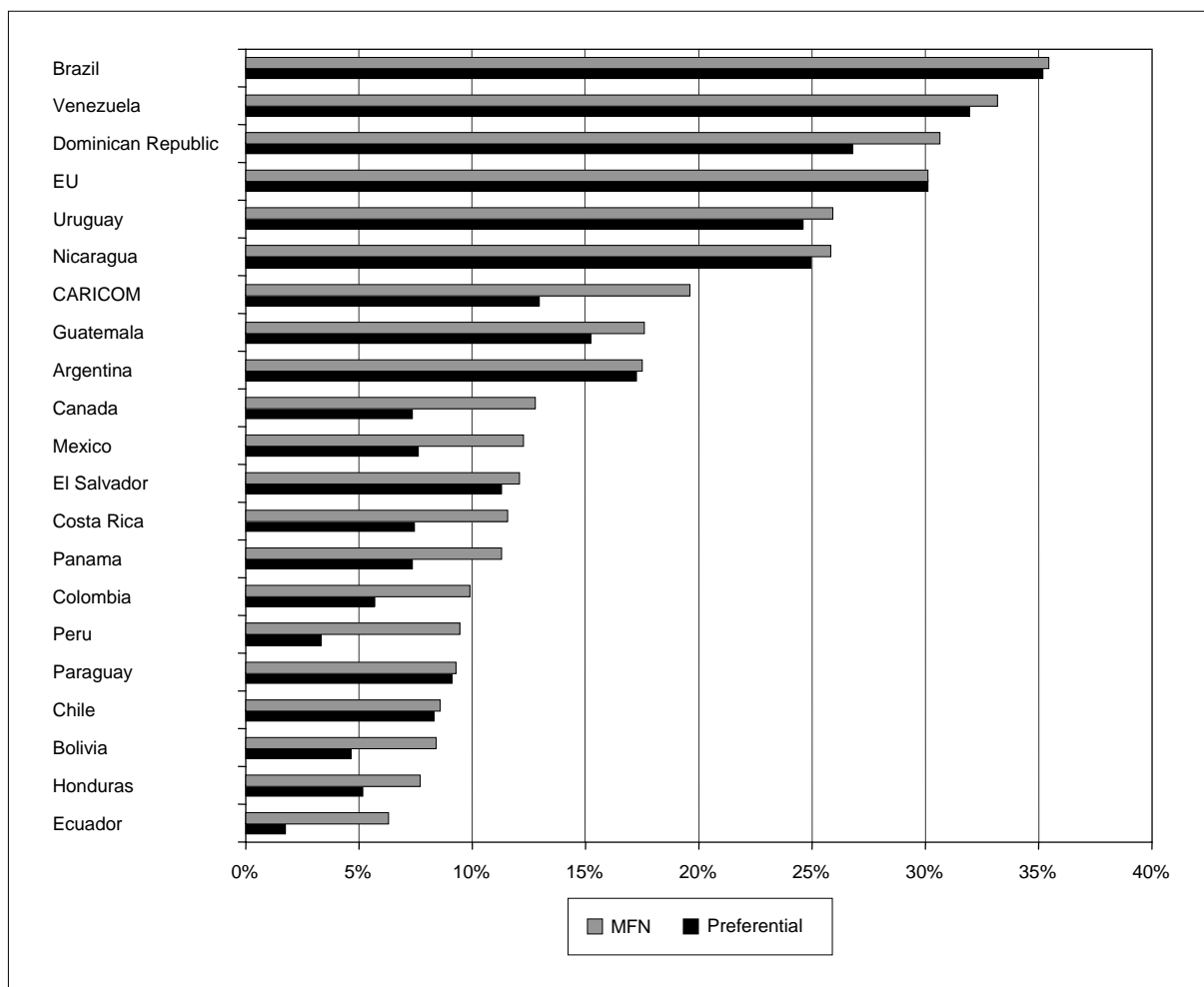
Source: 2001 Hemispheric Database of the Americas. INT-IDB calculations.

It is also interesting to note that most of the so-called small economies -Caribbean and Central American countries- experience a significant decrease in the level of tariff protection, because of the unilateral preferential access granted by the US for the few commodities that make the bulk of their exports, such as coffee, cocoa, sugar and bananas (see Figure 2.6). This provides a striking example of how a reduction in the tariffs faced by a few sensitive products can significantly impact the overall level of tariff barrier faced by a country. However, in the case of many South American countries, preferential access does not notably decrease the overall agricultural tariff barriers (since these agreements do not provide access to sensitive products). Therefore, using MFN rates to measure tariff protection creates, in some cases, an upward bias. Appendix B provides a table

with the average agricultural preferential tariffs, weighted by total exports, for the WH countries and the EU.

(b) Tariffs on Agricultural versus Industrial Sectors

The second factor to be considered is that any negotiation that addresses the liberalization of trade barriers for agricultural goods will encompass trade-offs. Many of the countries that face relative high tariff barriers for their agricultural exports impose, on the other hand, relative high import tariff protection on non-agricultural products. It is thus expected that any decrease in the level of tariff protection in the agricultural sector will require further liberalization of non-agricultural sectors. Any investigation on the effects of trade liberalization would be incomplete if only one sector is taken into consideration. In the subsequent sections non-agricultural products were denominated as "industrial" products.

Figure 2.9 displays the breakdown of the MFN tariff protection imposed by Brazil and the US divided by sectors (agriculture and industry). The graph shows that in many cases a greater part of the overall tariff imposed by Brazil is due to industrial tariffs (especially in the case of the NAFTA countries). Almost 90% of the 17% overall weighted average tariff faced by the US in Brazil corresponds to tariffs imposed on its industrial exports. In the case of the US, the inverse is true for almost all WH countries. A greater part of the overall tariff is due to agricultural tariff barriers. Of the 11% overall tariff faced by Brazilian exports into the US, for example, more than 75% is imposed on its agricultural exports.

FIGURE 2.9
BRAZIL AND US 2000 MFN IMPOSED TARIFFS DIVIDED BETWEEN INDUSTRIAL AND AGRICULTURAL SECTORS (%)

Source: 2001 Hemispheric Database of the Americas. INT-IDB calculations.

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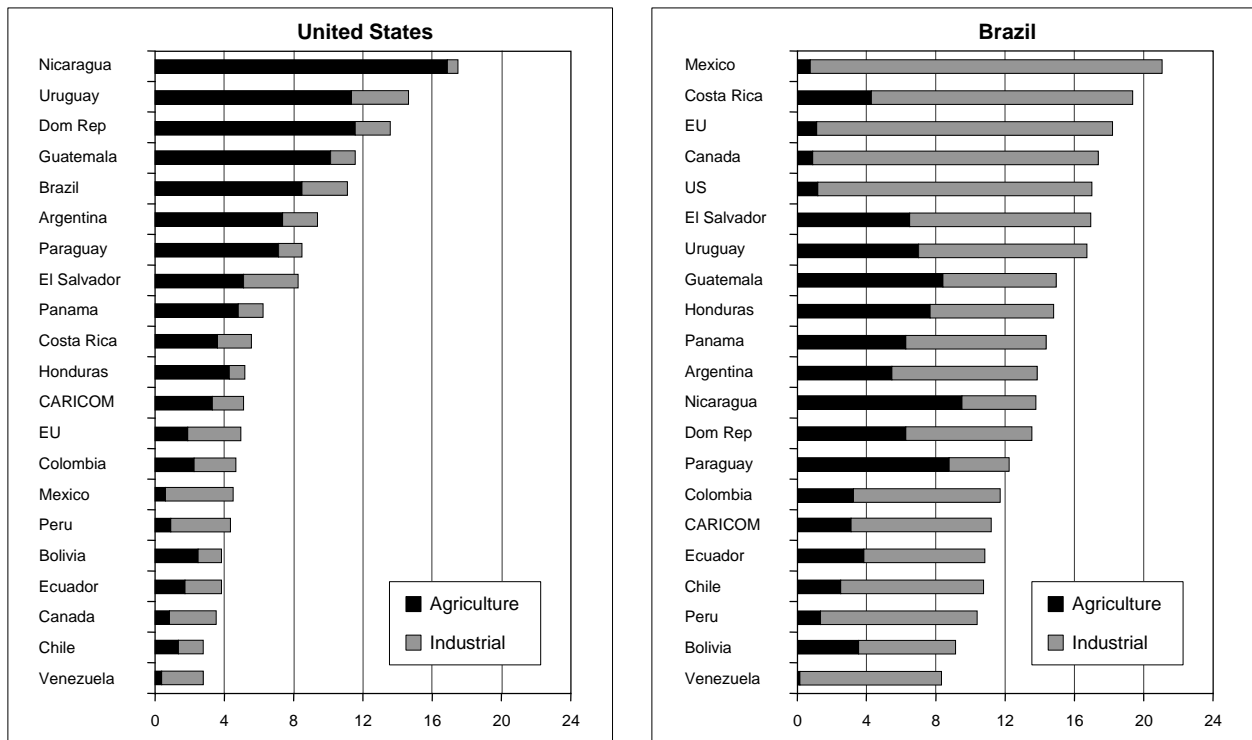
One of the advantages of using weighted average tariffs is that the above breakdown exercise can be further segmented. This provides a comprehensive overview of the sensitive products utilizing both tariff and trade flow information. Figure 2.10 presents such an analysis. For the US, the three most sensitive product categories are electronic equipment, electrical machinery and transport equipment, with the first two accounting for approximately 50% of the overall tariff level. In the case of Brazil, tobacco, textiles, orange juice and sugar are the most sensitive products, while tobacco makes up for almost half of the total overall weighted tariff.

FIGURE 2.10
BREAKDOWN OF OVERALL MFN IMPOSED TARIFFS BY SENSITIVE PRODUCTS (HS6 2000)
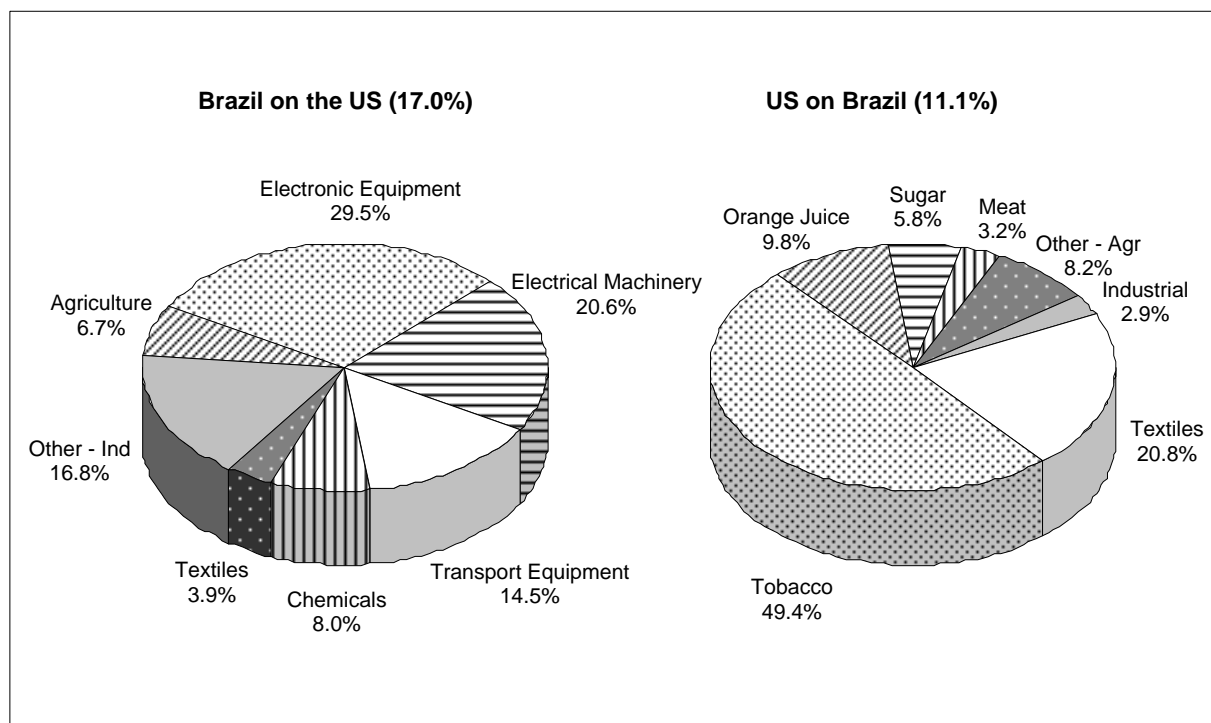
Source: 2001 Hemispheric Database of the Americas. INT-IDB calculations.

2.3.1. Evaluating Tariff Protection in a Bilateral Agreement: The "Relative Tariff Ratio" Index (RTR)

The previous section demonstrated that one of the challenges that exist in trade negotiations is the measurement and comparison of relative levels of tariff protection between trading partners. An index that measures the effects of trade liberalization in a bilateral negotiation is the Relative Tariff Ratio (RTR) Index, originally developed by Sandrey [2000], and further developed by Wainio and Gibson [2002] and Gehlhar and Wainio [2002]. The index considers the bilateral protection between two countries, where each tariff line of country A is weighted by country's B total exports to the world for the same tariff line, and vice versa. The index is constructed as the ratio between

a country's faced tariffs in the numerator and its imposed tariffs in the denominator.[23] In general, a ratio close to one means that both countries have similar tariff protection, and thus face/impose comparable barriers. However, this does not reflect the levels of tariffs, only their relative ratios. A ratio of 3.9 between the US and Mexico means that for every percentage point that Mexico faces in the US, US faces 3.9 points in Mexico, or an RTR index of 3.9/1.0. Conversely, the ratio between Mexico and the US is 0.3, or an index of 0.3/1.0 (= 1.0/3.9). The main advantage of the RTR index is that it summarizes a large amount of trade flows and tariff levels data into a concise number, which can be easily interpreted.

TABLE 2.2
US MFN AND PREFERENTIAL RTR INDEX FOR WH COUNTRIES (HS6 2000)

RTR	MFN Tariffs			Preferential Tariffs		
	All	Agr	Ind	All	Agr	Ind
Argentina	1.5	0.8	4.0	1.8	0.8	9.8
Brazil	1.5	0.4	5.0	1.8	0.4	14.3
Paraguay	1.4	1.5	2.0	1.6	1.5	8.9
Uruguay	0.8	0.5	2.0	1.0	0.6	5.1
Canada	1.7	2.9	1.1	4.6	3.5	--
Mexico	3.9	4.2	3.6	9.2	3.5	16.5
Chile	3.2	1.1	5.4	4.2	1.1	9.6
Dominican Republic	1.0	0.6	4.0	1.2	0.7	12.9
Panama	1.6	2.1	3.4	2.7	3.3	10.2
Costa Rica	0.8	1.5	1.2	1.7	2.3	5.5
Guatemala	0.4	0.8	1.2	0.5	1.0	5.7
Honduras	1.1	2.0	2.5	1.9	2.9	8.4
Nicaragua	0.2	0.5	1.3	0.2	0.5	14.4
El Salvador	0.6	1.0	0.7	0.8	1.1	2.1
Bolivia	2.3	1.2	5.0	6.5	2.1	731.0
Colombia	2.3	1.6	3.0	8.2	2.8	265.0
Ecuador	1.7	2.4	2.0	13.6	9.0	2,959.0
Peru	2.9	1.9	3.0	39.1	5.3	2,434.0
Venezuela	4.0	0.5	4.4	4.4	0.5	4.8
CARICOM	2.5	1.1	5.4	4.4	1.7	14.9
EU	1.1	0.9	1.0	1.1	0.9	1.0

Note: Canada's imposed tariff is equal to zero, so the RTR index tends to the infinite.

Source: 2001 Hemispheric Database of the Americas. INT-IDB calculations.

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[23] The Relative Tariff Ratio Index is always calculated on a bilateral basis, or:

$$RTR_{AB} = \frac{\sum_{i}^{n}\left(X_i^B \cdot Y_i^A\right)}{\sum_{i}^{n}\left(X_i^A \cdot Y_i^B\right)}$$

Where: *A*, *B* = Countries *A* and *B*.
X_i = AVE tariff rate for product *i*.
Y_i = share of exports of product *i* in total exports.

Table 2.2 contrasts US MFN and preferential RTR index figures for the agricultural and industrial (non-agricultural) sectors. In most cases, the US RTR preferential index has higher values than the MFN one, especially for industrial products from the Andean Community countries (for Ecuador the ratio increased from 2 to almost 3,000). In the case of the Andean countries, this extreme increase from MFN to Preferential can be explained by the fact that the US has practically reduced all import tariffs to zero to improve trade flow and help in the war against drug trafficking. The problem is that as the imposed tariff approximates zero, the RTR tends towards infinity. As a result, when imposed tariffs are very close to zero the RTR index has to be interpreted very cautiously (to better understand the underlying dynamics one should reflect on the imposed and faced tariffs values itself). Nevertheless, these high ratios indicate that the reduction of tariffs by the US under the Preferential Agreement has not been followed by a proportional decline in tariffs on the part of the Andean Community.

It is interesting to notice that this increase in the RTR index also occurs for Mexico and Canada, both partners in NAFTA. In the case of Canada, the overall index increased from 1.7 to 4.6, and for Mexico from 3.9 to 9.2. This implies that the US has provided relatively more access than it has gained from its partners in the NAFTA, when taking into consideration the RTR methodology. Furthermore, this liberalization has been primarily granted for industrial products.[24] In the case of Mexico, the RTR industrial index increased from 3.6 to 16.5, however the RTR agricultural index was reduced from 4.2 to 3.5. In other words, while Mexico has reduced agricultural barriers, the US has provided more access to industrial imports, in relative terms. On the other hand, for countries that have unilateral trade agreements with the US, the Preferential RTR index will be lower than the MFN RTR index. This is the case since these countries have gained market access without reciprocity.

The above illustration provides a powerful example of how useful the RTR index can be for measuring trade liberalization on a bilateral basis. The index can be used as a practical tool to appraise progress in a free trade agreement, and as a starting point to identify potential sectors that negotiators should focus on. Therefore, a next step would be to calculate several years to capture trends, since only one year may not be fully representative. However, we should reflect upon the fact that the RTR index is limited in terms of accuracy. Sandrey [2000] warns that he would be hesitant to utilize the Index to analyze less and least developed economies, since income effects would make some of the assumptions unrealistic. However, he did point out that this does not invalidate the examination of exports from the developing world to the developed world. Overall, we believe that the potential data gains of using the RTR far outweigh its deficiencies.

2.3.2. *Evaluating Tariff Protection in a Regional Integration Agreement: The "Regional Export Sensitive Tariff" Index (REST)*

Building on the RTR index, we propose an extension of the RTR index at the regional level called the "Regional Export Sensitive Tariff" Index (REST). The REST index aggregates all tariffs faced and imposed by each country at the regional level into a single indicator, representing a ratio of the weighted value of those tariffs.

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[24] For Canada the RTR industrial index could not be calculated since tariffs faced and imposed are zero.

The index measures each country's *faced* tariffs from its partners weighted by its *total exports* in the numerator, and each country's *imposed* tariffs weighted by the *total exports* of all its partners in the denominator, calculated one by one, based on a potential Regional Integration Agreement (RIA). Each combination of tariffs and share of export ratios for one country is weighted by the relative importance of total exports to the region in the case of *faced* tariffs, and total imports in the case of *imposed* tariffs.[25] Both the RTR and the REST indexes can be used to gauge the concessions that each country makes relative to those it receives, in the event of the elimination of trade barriers. The advantage of the REST index is that it can go far beyond the bilateral level, and address the important issue of liberalization at a regional or multilateral level.

However, the REST index, like the RTR index, does have limitations, and is more of a pragmatic mercantilist tool rather than an elegant academic measure. Two of these limitations do deserve special attention: the first limitation is that the REST index is based on tariffs and therefore does not take Non Tariff Barriers (NTBs) into account, such as TBT and SPS barriers. Such barriers are extremely difficult to quantify and may one day become a major barrier to agricultural trade. SPS requirements, for instance, can impede trade to small economies due to the lack of financial and human resources to implement and administer the required procedures.

The second limitation is that the index fails to incorporate the effects of elasticity and trade substitution that may occur once barriers decrease. It assumes that all of a country's sectoral exports will uniformly go to all its partners in the regional agreement. This is somewhat implausible, especially in the case of exports from big to small economies. However, the index is largely influenced by each country's sensitive exports to its most important partners, giving marginal importance to other products and countries. Thus, the REST index contrasts countries' competitive products with major trading partners' barriers. It seems unrealistic to assume that 92% of a Caribbean country's imports from the US will be industrial products (agriculture corresponded for only 8% of the US total exports in 2000). This seems even more unlikely when we consider that these countries are net food importers and do have a relatively low level of income per capita. Nonetheless, since the Caribbean Community does represent less than 1% of US total exports in the WH, it has a small weight in the US REST index.

In sum, the advantages presented by a practical and concise figure that provides a measurement for sensitive products tariff barriers in a regional agreement, far outweigh any of the limitations

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[25] $$REST_A = \frac{\sum\limits_{R \neq A}^{N} \left\{ \left(X_R^A / X_T^A \right) \sum\limits_{i=1}^{n} x_i^R \cdot y_i^A \right\}}{\sum\limits_{R \neq A}^{N} \left\{ \left(M_R^A / M_T^A \right) \sum\limits_{i=1}^{n} x_i^A \cdot y_i^R \right\}}$$

Where: $A, B, C, \ldots, N$ = member countries of an RTA and R is any country.

x_i^A = maximum AVE tariff rate at HS-96 level for tariff line i in country A.

y_i^A = share of exports of i in total exports, M_R^A = country A's total imports from country R.

M_T^A = country A's total imports from all RTA countries.

X_R^A = country A's total exports to country R,

X_T^A = country A's total exports to all RTA countries.

mentioned. Therefore, the index could be used in negotiations to provide a valid and useful way to measure the "mercantilist progress" and "balanced concessions" that are behind most regional trade negotiations.

One final issue should be taken into account to avoid bias when using MFN data to compute the REST index. Preexisting regional Free Trade Area (FTA) agreements have to be considered when calculating the index by using preferential tariffs or assuming a zero tariff. This is the case since trade has already been liberalized under such agreements; undoubtedly increasing trade flows between its partners. In other words, existing FTA's have already created trade and thus would induce bias in an index that is trying to gauge the level of distortion in trade flows produced by high tariff rates. Only trade data from non-Mercosur countries was used, for instance, to compute the Argentinean MFN REST in the FTAA. As a result the Argentinean MFN REST value measures the concessions that the country makes relative to those it receives while only taking into account the WH countries outside the Mercosur agreement. The same approach was used for the Andean Community, the Central American Common Market (CACM) and the NAFTA countries. It should be emphasized that such a concern does not exist when preferential tariffs are used to calculate the REST. In this case the existing trade flows do accurately reflect the applied preferential tariffs and thus no distortion has to be accounted for. So, when calculating the Preferential REST for the FTAA, each country was weighted against all other WH.

Table 2.3 summarizes the main strengths and weaknesses of the RTR and REST indexes.

<p style="text-align:center">TABLE 2.3
SUMMARY OF STRENGTHS AND WEAKNESSES OF THE RTR AND REST INDEXES</p>

Strengths	Weaknesses
• Pragmatic measure that can be easily interpreted.	• Ignores elasticity effects and substitution possibilities that may occur once trade barriers decrease.
• Summarizes a large amount of trade flows and tariff level data into a simple and concise number.	• Assumptions could be unrealistic for some least developed countries.
• Tariffs are weighted according to their importance with trading partners (index is mostly influenced by sensitive products and major trading partners).	• Does not account for non-tariff measures and subsidies (SPS, TBT, anti-dumping, export restrictions, etc.).
• Excellent instrument for trade negotiators. Useful to set starting points and measure progress in FTA.	• REST calculation has no sense when tariffs tend to zero.
• Highlights potential sectors of possible negotiation difficulty.	

Source: Authors, based on Sandrey [2000], Wainio and Gibson [2001], and Gehlhar and Wainio [2002].

Appendix C provides a table with the aggregated regional tariffs that are weighted, faced and imposed for WH countries, and the respective REST index (both MFN and Preferential). As illustrated for the bilateral case of Brazil and the US, a breakdown of these aggregated tariffs by product could provide a comprehensive overview of a country's sensitive export products on the regional level. Figure 2.11 displays the faced tariff for agricultural products while Figure 2.12 displays imposed tariffs for industrial products. It can be observed that faced agricultural tariffs are twice as high on average as imposed industrial tariffs. Moreover, most countries experience a significant decrease in the regional agricultural tariff level when preferential agreements are taken

into consideration. The same does not hold true when industrial imposed tariffs are analyzed. One possible interpretation is that trade for sensitive industrial products has already been liberalized, for the most part, while many sensitive agricultural products still depend on preferential treaties for market access.

FIGURE 2.11
WH COUNTRIES FACED TARIFFS ON AGRICULTURAL PRODUCTS
(MFN AND PREFERENTIAL, HS6, 2000)
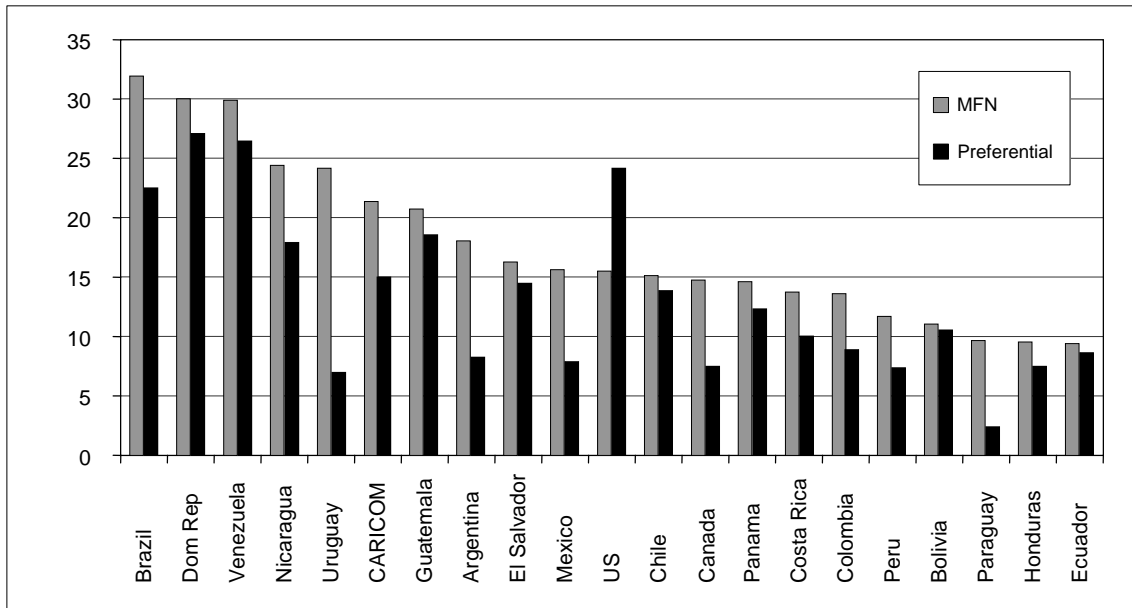
Source: 2001 Hemispheric Database of the Americas. INT-IDB calculations.

FIGURE 2.12
WH COUNTRIES IMPOSED TARIFFS ON INDUSTRIAL PRODUCTS:
(MFN AND PREFERENTIAL, HS6, 2000)

Source: 2001 Hemispheric Database of the Americas. INT-IDB calculations.

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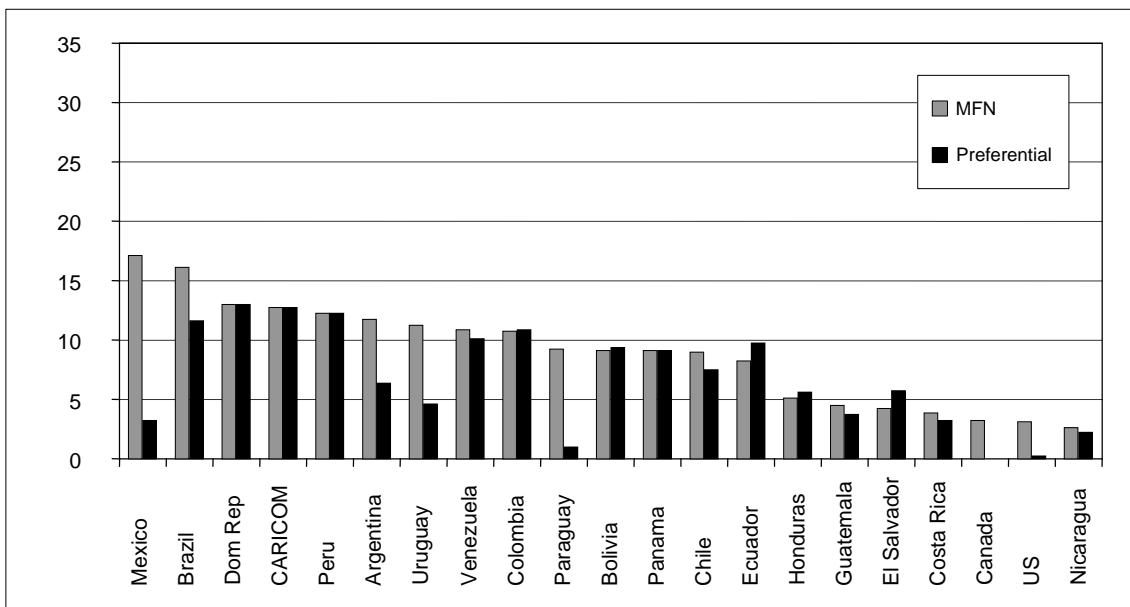
When considering MFN figures, Brazil's agricultural exports face the highest barriers in the Hemisphere. On the other hand, Brazil ranks second in terms of imposed protection on industrial imports. Canada and the US are the countries that impose the lowest industrial tariffs for all partners: about 3% in the case of MFN tariffs and practically zero when preferential rates are considered. It is interesting to note that the US agricultural preferential faced tariff is actually higher than the MFN tariff. This is the case since the MFN calculations for "regional" tariffs do not take into consideration trade between existing RTA members (NAFTA members in this case). The preferential tariff ends up being higher because the US still faces some protection on agricultural exports from other NAFTA members (section 2.3.1 pointed out that the US has provided relatively more access than it has gained from its NAFTA partners).

Table 2.4 presents the results for the MFN and Preferential REST index for the whole economy, industrial sector and agriculture. To provide an easy visual interpretation, REST index figures from 0.8 to 1.2 represent similar tariff protections and are in bold. REST index numbers above 1.2 characterize higher faced than imposed weighted tariffs, therefore indicating a protectionist reality that could be reversed (depicted in gray). When the index is below 0.8 it denotes lower faced than imposed tariffs, and therefore a country that would be a net liberalizer in that sector (depicted in dark gray).

TABLE 2.4
THE "REGIONAL EXPORT SENSITIVE TARIFFS" INDEX (REST) BY SECTORS FOR WH
COUNTRIES (MFN AND PREFERENTIAL, HS6, 2000)

	REST	MFN			Preferential		
		All	Ind	Agr	All	Ind	Agr
Mercosur	Argentina	0.9	0.4	1.2	0.7	0.3	1.1
	Brazil	0.7	0.3	2.2	0.7	0.3	2.2
	Paraguay	0.9	0.7	0.7	1.8	0.6	1.4
	Uruguay	1.4	0.9	1.7	1.1	0.7	1.5
NAFTA	Canada	1.7	4.2	0.5	0.4	13.3	0.3
	Mexico	0.7	0.9	0.4	0.2	0.2	0.3
	US	1.4	3.6	0.7	3.2	11.7	2.5
	Chile	0.9	0.8	1.7	1.0	0.8	1.9
	Dom Rep	1.1	0.4	1.7	1.0	0.3	1.5
	Panama	1.0	1.1	0.6	0.9	1.0	0.5
CACM	Costa Rica	1.6	1.4	0.8	1.2	1.2	0.6
	Guatemala	2.8	1.8	1.3	2.7	1.7	1.4
	Honduras	1.2	0.8	0.6	0.8	0.5	0.5
	Nicaragua	5.5	3.6	1.9	4.0	2.5	1.5
	El Salvador	2.4	2.1	1.3	1.3	0.9	1.1
Andean	Bolivia	0.8	0.7	1.1	0.8	0.7	1.1
	Colombia	0.7	0.5	0.8	0.4	0.3	0.6
	Ecuador	0.7	0.6	0.6	0.6	0.5	0.6
	Peru	0.5	0.5	0.6	0.3	0.3	0.4
	Venezuela	0.4	0.4	1.9	0.5	0.4	1.8
	CARICOM	0.5	0.3	0.9	0.4	0.2	0.6

Note: CARICOM - Caribbean Community countries.
Source: 2001 Hemispheric Database of the Americas. INT-IDB calculations.

In general, a REST ratio close to one can be interpreted as an overall evenness between a country's tariff regime and that of its regional partners. Consequently, the objective of RTAs' negotiations could be to progress towards REST values that are close to one for all partners. This does not necessarily mean that all tariffs should be close to zero. It rather implies that countries will have equivalent access for their most sensitive products exports at the regional level. Below we provide a detailed analysis of the REST index results for different sectors.

- Agricultural Sector -

Figure 2.13 and Table 2.4 present the calculation of the REST Index for agricultural products using MFN and Preferential tariffs. The figure shows very clearly that NAFTA, Caribbean and most Andean countries impose higher weighted MFN tariffs than they face in the WH (REST below 1). The biggest face-off is Mexico and Canada, where high tariffs imposed on a very small group of key products are significant to potential FTAA partners. In other words, these countries are net liberalizers within the integration process in terms of agricultural tariff protection.

FIGURE 2.13
THE REST INDEX FOR AGRICULTURAL TRADE IN THE AMERICAS (HS6 2000)
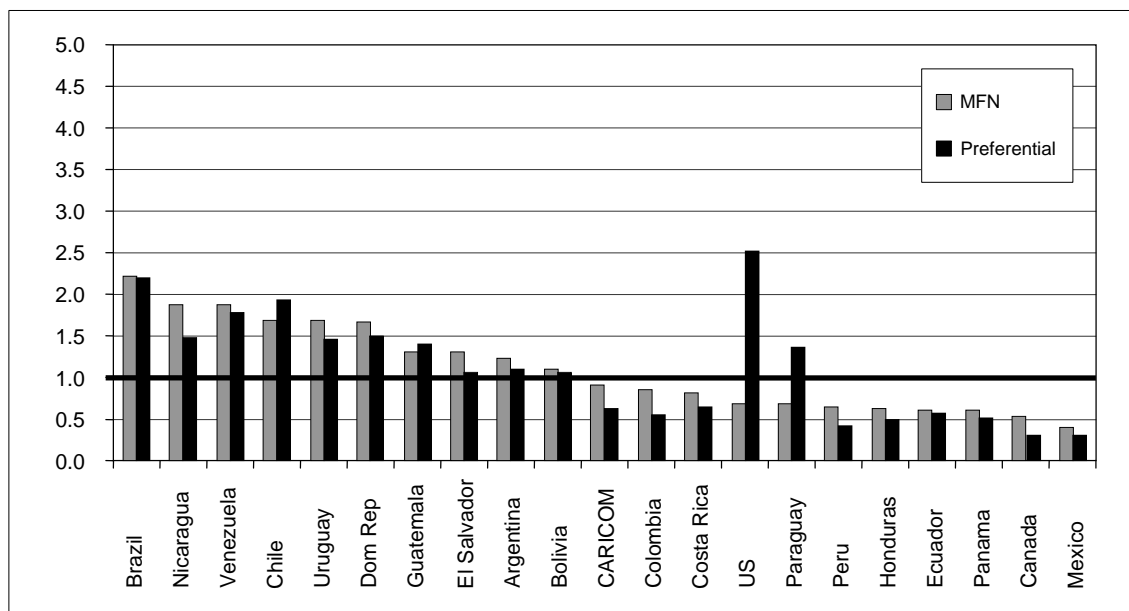
Source: 2001 Hemispheric Database of the Americas. INT-IDB calculations.

On the other hand, Chile and most Mercosur and Central American countries would obtain net gains in terms of agricultural market access. Brazil would rank first in this process above Uruguay, Chile and Argentina, as a result of the very high tariffs faced by Brazil's sensitive products such as sugar, orange juice and tobacco, especially in the US. There are no major differences between the MFN and preferential REST figures for most countries other than the US and Paraguay. In fact, as we have mentioned previously the US has provided more access in agriculture trade to its NAFTA partners than it has received. Regarding Paraguay its preferential REST is higher,

because it has provided virtually free access to its Mercosur partners, while it still encounters some tariff barriers.

- Industrial Sector -

Figure 2.14 and Table 2.4 provide an overview of the REST index for industrial products. The figure offers a very different view than the one provided by the agricultural REST. The US, Canada, and most Central American nations are the countries that have the highest industrial REST. These high ratios are mainly due to the fact that these countries apply very low tariffs on industrial imports. The very high preferential REST value for Canada and the US is the result of the near zero tariff that these countries impose on Mexico. These preferential ratios should be interpreted carefully, since they do not necessarily correspond to possible high trade-offs (Canada faced tariff is approximately 0.44 while the imposed tariff is 0.03). For most Central American countries, the above one REST ratio is a consequence of their below average imposed tariffs, when these are compared to most South American countries and Mexico (they still imposed higher tariff barriers than the US and Canada).

FIGURE 2.14
THE REST INDEX FOR INDUSTRIAL TRADE IN THE AMERICAS (HS6 2000)
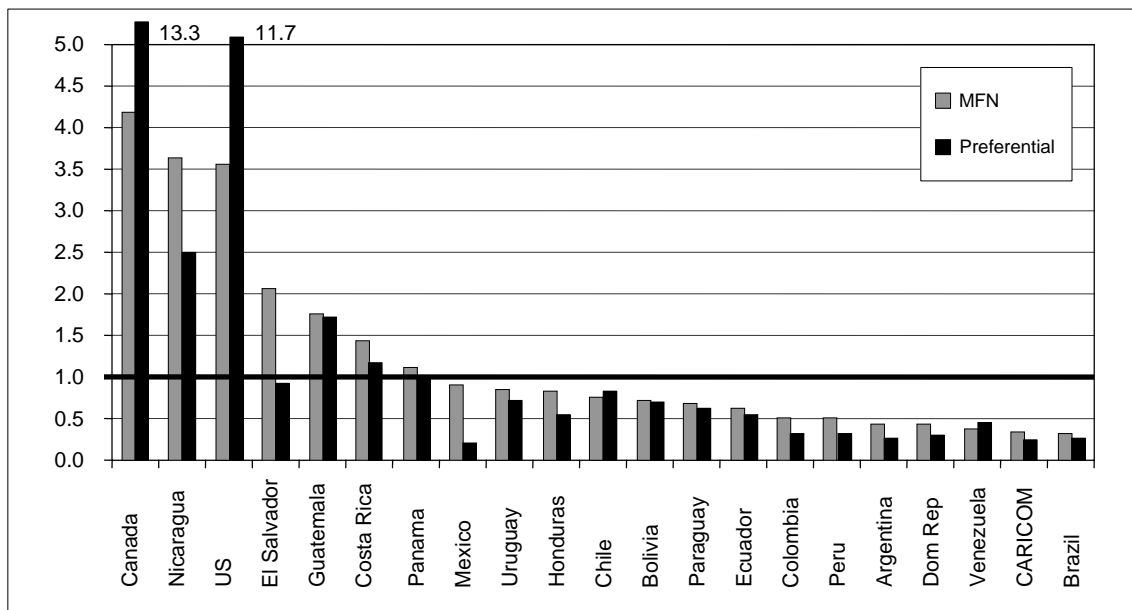
Source: 2001 Hemispheric Database of the Americas. INT-IDB calculations.

Most Mercosur and Caribbean countries would become net liberalizers in the FTAA in industrial products, as they still enforce high tariffs (especially when compared to the US and Canada). However, as it is shown in Figures 2.11 and 2.12, tariff barriers on industrial products are 50% lower on average than barriers on agricultural products. Even though there are still some segments in the industrial sector where further trade liberalization can be achieved, there is still much to be accomplished in the agricultural sector.

- All (Industry & Agriculture) -

To complete our examination using the REST index we computed each country's overall ratio, combining both industrial and agricultural tariff barriers (Figure 2.15 and Table 2.4). Through this analysis we can get a better understanding of all the trade-offs that would take place in an FTAA. Most Central American countries face higher tariffs than they impose, regardless of the tariff universe under consideration (MFN or preferential). These countries would have a strong interest in pushing the trade liberalization process forward. Actually, they would have net gains in overall market access from a simultaneous decrease on agricultural tariff barriers in North America and industrial tariffs in South America.[26] The countries in the best position are Nicaragua, Guatemala and El Salvador. Panama, the Dominican Republic and Chile are countries that have REST close to one. These countries sensitive products enjoy a relatively even access at the regional level.

The US is also a country that would benefit from a regional trade agreement, independent of the tariff universe considered. Its preferential REST ratio is the second highest since the country has provided more access than it has gained from several of its FTAA partners. Furthermore, even though the US does impose "megatariffs" on some agricultural products, agriculture represented only about 8% of total US exports in 2000. Canada has a REST above one for MFN tariffs and below one for preferential rates. This country would gain from a decrease in industrial tariff barriers in Latin America. On the other hand, the US still imposes relative higher agricultural tariff barriers towards its NAFTA partners and most South American countries. Mexico would become a net liberalizer, both in agriculture and industry, independent of the tariff scheme.

FIGURE 2.15
THE REST INDEX FOR TRADE IN THE AMERICAS (HS6 2000)
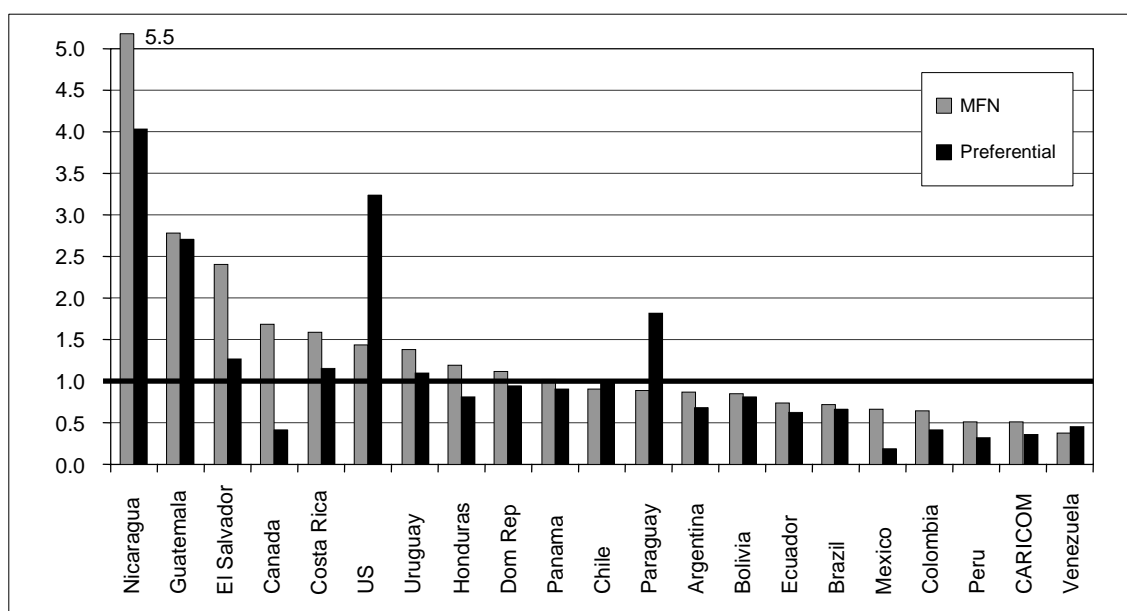
Source: 2001 Hemispheric Database of the Americas. INT-IDB calculations.

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[26] These results are very similar to those obtained by Diao, *et al.* [2002] in their CGE scenarios for the FTAA.

Mercosur and most Andean and Caribbean countries would become net liberalizers in the process. Mercosur countries would gain from liberalization of agricultural markets but would have to trade this off with the liberalization of their own high industrial tariffs. For the Andean and Caribbean countries, the below one REST ratio is largely a result of the existing FTAs that they have with the US. Under these FTAs, Andean and Caribbean countries have gained more access than they have provided (mainly for industrial products).

In summary, it is important for all WH countries to consider the potential gains of balanced FTAA negotiations for the different sectors as well as the setbacks that they could face in the absence of this agreement. It is our opinion that the REST index has the potential to become a powerful tool to help negotiators understand the dynamics that underlie tariff barriers and trade flows for sensitive products in any regional or multilateral trade negotiation process.

III. OVERVIEW OF DOMESTIC AND EXPORT AGRICULTURAL SUBSIDIES IN THE WORLD

One of the major breakthroughs of the URAA was the recognition of the direct link between agricultural subsidies and international trade. This was accompanied by the identification of the need to include agriculture in the world trading system, and under the same conditions as those applying to non-agricultural products. The agreement aimed at identifying and reducing the measures that have potential trade distorting effects on international trade.[27]

Export subsidies for industrial products have been prohibited during the eight multilateral rounds of the GATT. Nevertheless, in the case of agriculture, these subsidies were only subject to limited disciplines and reductions. In terms of domestic support, agricultural policies were classified in four boxes according to their potential to distort trade. Measures that have zero or minimal effects on production and trade were placed into the "green box", and were exempted from any expenditure limits. In addition to measures covered by the green box, two other categories of domestic support were exempted from reduction commitments under the URAA: certain developmental policies in developing countries which fall into the "S&D box" and government payments under production-limiting programs which were placed into the "blue box". All other measures of domestic support were considered as production and trade distorting, and are allocated into the "amber box". Amber box subsidies are measured through an indicator named Total Aggregate Measurement of Support (AMS), which is subject to reduction commitments under the Agreement. In addition, the agreement required countries to notify all their export subsidies. This section provides an overview of the evolution of the use of domestic and exports subsidies in the world, in general, and in the EU and the US, in particular, during the implementation period of the Agreement.[28] In order to present a coherent view of the ongoing trends and their potential influence on multilateral and regional negotiations, data was analyzed through a comparative approach[29] using three different sources: WTO notifications on domestic support, OECD and governments published official data (see Box 3.1). Based on this approach, the evolution of domestic measures of support are discussed using different methodologies and various criteria and ratios, such as the amount of subsidies granted per hectare and per producer, for example. An analysis by product is also provided to help identify the most sensitive sectors.

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[27] For more details on trade distortions arising from domestic support policies, see Blandford [2001], Burfisher [2001], Josling [1998], OECD [1998] and Diakosavvas [2001].

[28] The implementation period of the URAA was 1995-2000 for developed countries, and 1995-2004 for developing countries.

[29] For other comparisons of agricultural support between countries, see Young, *et al.* [2002], Burfisher (ed.) [2001], Diakosavvas [2001] and ABARE [2000].

Box 3.1

SOURCES OF INFORMATION AND METHODOLOGIES TO MEASURE AGRICULTURAL SUBSIDIES

A.   World Trade Organization: Notifications of members for domestic support

WTO members classify their domestic agricultural programs in four categories:

Green box: to qualify measures that should not be, or only minimally, trade distorting and they are exempted from reduction commitments. Programs must be financed by the government and must not provide price support to producers. Generally, they are not directed towards particular products, and include direct income supports for farmers that are decoupled from the current level of production or prices. Green box measures also include disaster assistance, government programs on research, and pest and disease control.

S&D box: A Special and Differential Treatment is granted to developing countries because government measures of assistance are seen as part of the development programs of these countries to encourage agricultural and rural development. These measures are exempted from domestic support reduction commitments that would otherwise be applicable to such measures.

Blue box: It covers direct payments under production-limiting programs (production quotas and land set-aside programs) that must be based on fixed area or yield or on 85% or less of the base level of production or head of livestock. Currently, very few WTO members are using the blue box.

Amber box: It includes any other domestic support measure that is production and/or trade distorting. Thirty WTO members have commitments to reduce their AMS by 20% by the year 2000 -13% by 2004, for developing countries-. Amber box subsidies affecting less than 5% of the value of production are exempt of commitments, due to a mechanism called "*de minimis*". Members without commitments have to keep their AMS within the "*de minimis* level*", which is 5% for developed countries and 10% for developing countries. Non-exempt policies include market price support (MPS), and output and input subsidies. To calculate the MPS element of the AMS the gap between the applied government administered price and a fixed external reference price (fixed at its nominal 1986-1988 average) was multiplied by the quantity of production eligible to receive the administered price for each commodity. Trade policies are included only for commodities for which there is an administered price support program.

Export Subsidies: In the URAA, the following practices are subject to reduction commitments as export subsidies: (i) the provision by governments of direct subsidies, including payments-in-kind, contingent on export performance; (ii) the sale or disposal for export by governments of non-commercial stocks of agricultural products at a price lower than the comparable price charged for the like product to buyers in the domestic market; (iii) payments on the export of an agricultural product that are financed by virtue of governmental action; (iv) the provision of subsidies to reduce the costs of marketing exports of agricultural products; (v) internal transport and freight charges on export shipments, provided or mandated by governments, on terms more favorable than for domestic shipments; (vi) subsidies for agricultural products contingent on their incorporation into exported products. Under the URAA, new export subsidies are banned. 25 WTO members can subsidize exports, but they have to reduce the value of subsidized exports by 36% and their volume by 21% during the implementation period (1995-2000). Countries without commitments cannot subsidize exports at all. The commitments did not include export credit schemes and food aid disciplines.

B.   Organization for Economic Co-operation and Development: Producer Support Estimate (PSE)

The Producer Support Estimate or PSE is the basic estimate of agricultural protection and support for agriculture calculated by the OECD since the mid-80s. The PSE is an indicator of the annual monetary value of gross transfers from consumers and taxpayers to support agricultural producers, measured at farm gate level. It is the result of policy measures regardless of their nature, objectives or impacts on farm production or income, across all countries. Support is expressed as a percentage of gross farm receipts (%PSE), and shows the amount of support to farmers, irrespective of the sectoral structure of a given country. For this reason, the %PSE is the most widely used indicator for comparisons of support across countries, commodities, and time. The PSE has two components: *MPS* and *budgetary outlays*. The effects of trade policies are included in the measure of MPS, which is calculated as the gap between the domestic producer price and a current world reference price for each commodity. The main difference between the PSE and the AMS is that: (1) the PSE uses the price received by producers while the AMS uses the current government administered price; (2) the PSE utilizes the current international reference prices while the AMS utilizes the external reference price for 1986-1988.

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Box 3.1 (continued)

Budgetary outlays (PSE without MPS) encompass payments based on output; payments based on area planted or number of animals; payments based on historical entitlements; payments based on input use; payments based on input constraints, and payments based on over-all farming income and miscellaneous payments. The indicator measures more than just the "subsidy element".

C.   Government Outlays

Data on EU agricultural outlays comes from the European Agricultural Guidance and Guarantee Fund (EAGGF), and Financial Reports and the Agricultural Situation in the EU Reports. The years mentioned are financial years starting January 1 and ending December 31. Government expenditures for the US are based on the Commodity Credit Corporation (CCC) net outlays provided by the Farm Service Agency (FSA) of the US Department of Agriculture. The years mentioned are fiscal years beginning on October 1 and ending on September 30. Fiscal years are designated by the calendar year in which they end.

3.1.   Evolution of Domestic and Export Subsidies According to WTO Notifications

Figure 3.1 displays the evolution of domestic and export subsidy notifications in the world. The concentration of support in three major groups contrasts sharply with the low levels of subsidies in the rest of the world. Indeed, more than 95% of domestic support measures and export subsidies are concentrated in the US, EU and "like-minded" protectionist countries.[30]

In keeping with this tendency worldwide, figures for the EU and the like-minded group -countries that reported the highest level of AMS agricultural support at the beginning of the implementation period- present a downward trend in terms of current US dollars. Nevertheless, the share of trade distorting instruments in the EU is still considerable. In particular, the EU continues to rely extensively on blue box measures that are somewhat trade distorting but are exempted from reduction commitments. As a result, this element could play an important role in the redefinition of the blue box in 2003,[31] a definition that other WTO members will probably challenge. With 23% of its total granted domestic support from 1995 to 1999 concentrated in the blue box, the EU is the only member (with Norway) to intensively use this instrument. If the blue box were to be eliminated in 2003, the EU would be very close to its AMS commitment (by 2% in 1999). With respect to the US, its overall level of support remains almost constant but its AMS, although kept below its commitment limits, increased significantly after 1998.

The evolution of domestic and export subsidy notifications in the WH compared to all other major players in the world, is illustrated in Table 3.1. Most potential FTAA members have low levels on both categories of subsidies, but the US has been increasing its domestic support in recent years, a trend expected to continue with the approval of the Farm Bill 2002 (the Farm Security and Rural Investment Act of 2002). WH countries have traditionally had very low levels of export subsidies

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[30]   In this section, the "like-minded" group of countries is defined as Japan, Korea, Czech Republic, Hungary, Iceland, Norway, Poland and Switzerland.

[31]   The Agenda 2000 encompassed the last reform of the CAP for the period 2000-2006, which still relies in many aspects on the "blue box" exemption to be extended with a potential increase in compensatory payments, in return for further reduction in government-supported prices.

and would easily be able to eliminate such subsidies in the near future. However, other similar measures -such as officially supported export credits on agriculture, the abuse of international food aid programs, the presence of state trading enterprises, and export restrictions- have been used in the region and could be relevant in multilateral and regional trade negotiations.

TABLE 3.1
WTO NOTIFICATIONS FOR DOMESTIC SUPPORT AND EXPORT SUBSIDIES

Countries/US$ million	Domestic Support [1]			Export Subsidies		
	1995	1998	(%)[2]	1995	1998	(%)[2]
United States	6,214	10,400	7.1	26	147	1.5
Mexico	452	1,258	0.8	-	5	0.1
Canada	568	522	0.5	38	-	0.2
Venezuela	542	211	0.4	3	5	0.1
Argentina	123	83	0.1	-	-	0.0
Colombia	58	10	0.0	18	23	0.3
Brazil	-	83	0.0	-	-	0.0
Costa Rica	-	-	0.0	-	123	0.8
FTAA	7,957	12,567	8.8	85	303	3.1
EU	64,436	52,453	58.1	6,292	5,995	88.0
"Like Minded"	44,716	11,479	31.1	619	440	7.6
Others	2,427	934	2.0	116	62	1.3
World	**119,536**	**77,433**	**100.0**	**7,112**	**6,800**	**100.0**

Notes: 1. Notifications of Total AMS reduction commitments in Amber Box.
        2. Average 1995-1998.

Source: WTO.

3.2. Comparing WTO, OECD and Official Governments Data on Domestic Support

The discipline on domestic support commitments proved to be the least binding for many countries as current total AMS has been kept below commitment levels. Although expenditures on agricultural policies with the greatest potential to affect production and trade have decreased since 1995, the actual impact of this reduction has been limited mainly because the agreed reductions only apply to the AMS and exclude blue and green box measures as well as the amber box subsidies affecting less than 5% of the value of production (*de minimis* level).[32] In fact, when measured by other

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[32] There are several reasons why the AMS is a poor indicator of production and trade distortions, among them the following: (a) Total AMS production commitments are sector-wide, not product-specific (as is the PSE). This gives countries the opportunity to reduce support on some products leaving other products' support unchanged or even higher. Countries' notifications show that some of them have increased support to certain specific products; (b) The MPS component of the AMS is based on the domestic administered support price and a fixed base-period world reference price (1986-1988). The domestic administered support price is a poor proxy for measuring the domestic market price because, in many important cases, it is not representative of actual internal supported prices, while the fixed external reference price of support does not represent the actual border price. This calls into question the measure of price support as defined by the URAA (the PSE uses current international reference prices); (c) The exclusion of price support in cases where no administered price exists provides wide flexibility to governments in choosing policy instruments; and (d) The AMS only includes support provided through domestic measures and it does not capture distortions arising from trade measures that are excluded from the AMS provisions (e.g. tariffs and export subsidies). For more details, see Diakosavvas [2001] and Blandford [2001].

methodologies, the evolution of the level of domestic support contrasts with the picture presented until now. Figures 3.2 and 3.3 compare the evolution of domestic subsidies in the EU and the US according to three different sources -WTO notifications in amber and blue box, OECD and government official data-. Contrary to the downward trend shown by the AMS indicator, both PSE and official government figures increased between 1995 and 2001, both in the EU and US. Two versions of the PSE indicator are presented. In the second one, the MPS component has been removed to facilitate comparisons with government payments (see Box 3.1).

Figures 3.2 and 3.3 also indicate the level of domestic support *vis-à-vis* the amber box reduction commitments assumed by the two countries. In both cases the gap between commitments and current expenditures has been narrowing over this period. Furthermore, according to Hart and Babcock [2002], US subsidies would have exceeded the allowed WTO limits (US$ 19.9 billion in 1999 and US$ 19.1 billion in 2000),[33] mainly because low world prices in the late 1990s did trigger high marketing loan and marketing loss assistance expenditures. This scenario would have occurred if the US could not have extensively used the "*de minimis*" provisions**.** Whether or not the US amber box expenditures continue exceeding commitments after the approval of the 2002 Farm Bill depends on factors that cannot easily be predicted.[34] In any case, as a result of the additional US$ 73.5 billion encompassed in the 2002 Farm Bill the overall level of domestic support will remain significant.

3.2.1. *Share of Domestic Support in the Value of Agricultural Output*

Under the URAA, the EU's established commitments are more than three times higher than those of the US. The EU is still spending more than twice the amount of US subsidies. A similar trend can also be observed if we compare, in global terms, the share of domestic support in the value of the two countries' production (Figures 3.4 and 3.5).[35] However, if we consider the expenditures made by governments and the PSE indicator without MPS, we find that the gap between the EU and the US outlays has shrunk dramatically due to a surge in US payments during the last three years. In fact, in response to the deterioration of world prices Congress adopted four large emergency packages between 1998 and 2001, and dramatically increased the level of US farm support.

In July 2002 the US presented an ambitious package of reform to the WTO, The package had the following objectives: the reduction of trade barriers for agricultural products, greater equity in world agriculture, and expanding growth opportunities for international trade in agricultural products. Regarding domestic support, the US proposed to bring down trade distorting subsidies (amber and blue box measures) to substantially lower levels than those currently allowed by fixing the limit on expenditures at 5 percent of a country's total value of agricultural production over a 5-year period. As can be seen in Figure 3.5, the proposal of the US is an attempt to return

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[33] In order to see the real level of trade distorting domestic support, current AMS and "*de minimis*" levels are included in the amber box.

[34] For more details on WTO commitment and its implication for the 2002 Farm Bill, see Becker [2002] and Hart and Babcock [2002], ABARE [2001], Korves and Skorburg [2000].

[35] In Figures 3.4 and 3.5, PSE as a percentage of the agricultural output is calculated as follows: PSE *divided by* total value of production at farm gates. It is not calculated as the OECD %PSE, which is obtained using the following formula: PSE/(Q.PP + PP) *100; where Q.PP is the value of production at producers prices and PP is PSE *minus* MPS.

to its 1995-1997 levels of domestic support. Even though many have questioned the real US intentions regarding agricultural liberalization, after the 2002 Farm Bill was passed, the current proposition actually serves various US interests. First, the 5-percent rule would harmonize the level of support that is permitted among WTO members. Second, a strict commitment at the multilateral level would be a way to pin down US domestic policies and avoid future escalations in domestic support as occurred in the late 1990s. Finally, it would force the EU to significantly curb its use of subsidies and as a result deeply reform the CAP.

The US proposal faces strong domestic and international resistance. Domestically, resistance comes from sectors that could lose with trade liberalization, such as dairy, sugar and orange juice. At the international level, the EU and the like-minded group both object, and argue that this proposition is much more demanding for the Europeans than for the US. Figure 3.4 shows the extent to which the EU would have to cut its domestic measures of support if the US proposal were adopted. Compared to the reduction the US should make, the difference is striking (a reduction of 72% for the EU versus 49% for the US, based on 2001 data).

3.2.2. Domestic Support Granted per Hectare and per Farmer

If we use other criteria, the imbalance in cost that the two countries would have to bear is not as clear. Figures 3.6 and 3.7 show the amount of domestic subsidies per hectare in the two countries. It is worth noting that the quantity of support per hectare increased between 1995 and 2001, while the surface of land used for agricultural purposes decreased. Although the difference in the level of domestic support per hectare granted on both sides of the Atlantic is impressive, we need to keep in mind that domestic subsidies in the US are highly concentrated within a small basket of products. In fact, the US heavily supports the grain and cotton sector while it does not subsidy the production of beef, poultry and pork meats. As a consequence, if pastures were removed from the land area used for agriculture purposes, the amount of domestic support per hectare in the US would be much higher. Furthermore, if we compare the level of domestic support granted per farmer in the EU and the US, as shown in Figures 3.8 and 3.9, we see that American producers are receiving more support than the Europeans -a situation that presents a different picture regarding the efforts that need to be made if the 5-percent rule were enforced-. The main reason for these results is that there are three times less farmers in the US than in the EU, and therefore subsidies are highly concentrated, especially in the mid-western states.

FIGURE 3.1
WTO NOTIFICATIONS OF DOMESTIC SUPPORT AND EXPORT SUBSIDIES IN THE WORLD
(US$ billions)

A. European Union

B. United States

C. Like-Minded Countries

D. Rest of the World

Legend

▦ Green box
▮ Blue box
▨ Amber box
▮ S&D box
▨ Export subsidies
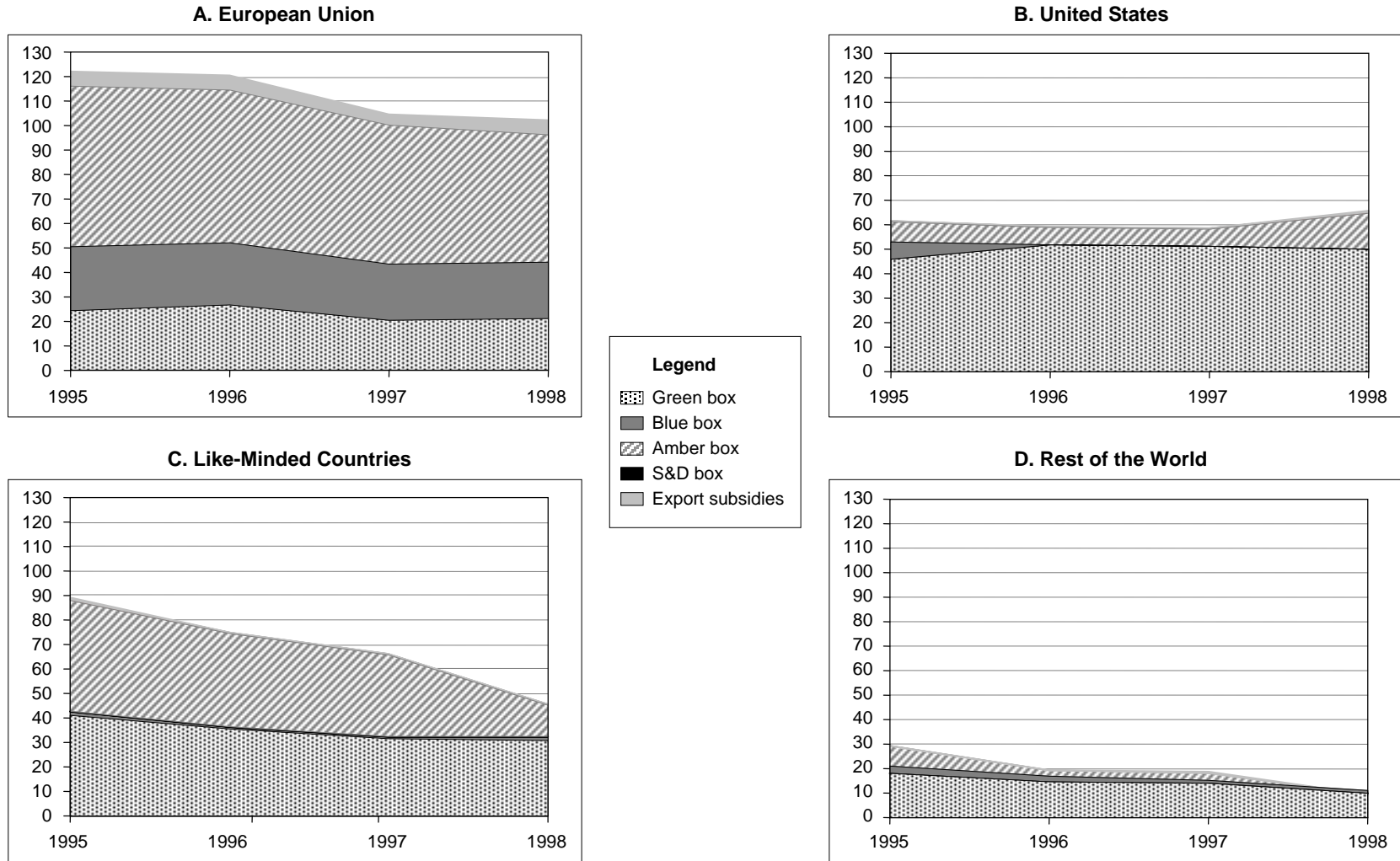
Notes: Amber box includes "*de minimis*" level.
        Rest of the World: Amber box for 1998 is incomplete for most countries.
Source: WTO notifications.

FIGURE 3.2. EUROPEAN UNION:
COMPARING DOMESTIC SUPPORT MEASURES (Euro)
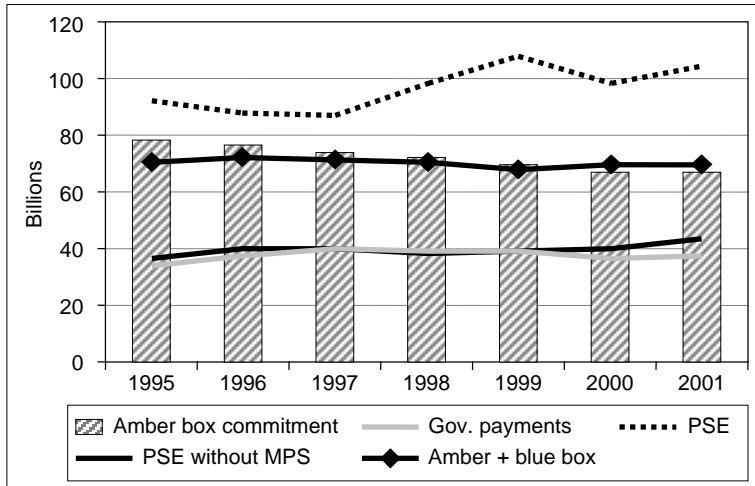
Notes: Amber box includes "*de minimis*". Forecasts for 2000-2001.
Sources: WTO, OECD, European Commission, FAPRI.

FIGURE 3.3. UNITED STATES:
COMPARING DOMESTIC SUPPORT MEASURES (US$)
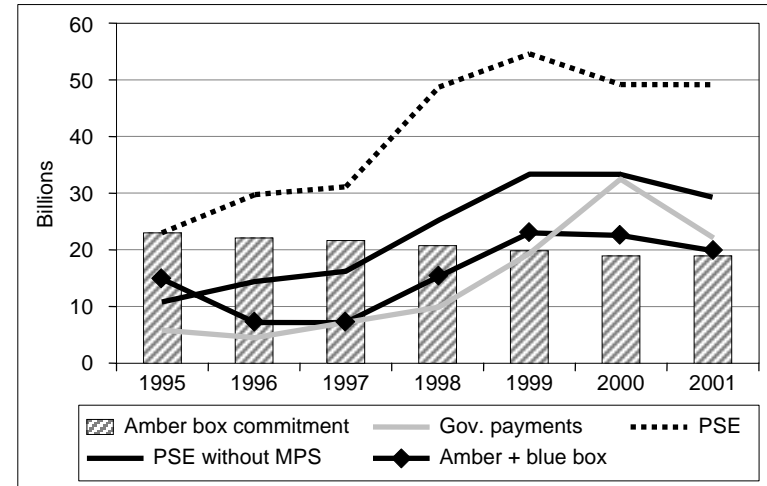
Notes: Amber box includes "*de minimis*". Forecasts for 1999-2001.
Sources: WTO, OECD, USDA-FSA, FAPRI.

FIGURE 3.4. EUROPEAN UNION: DOMESTIC SUPPORT
AS A % OF THE AGRICULTURAL OUTPUT
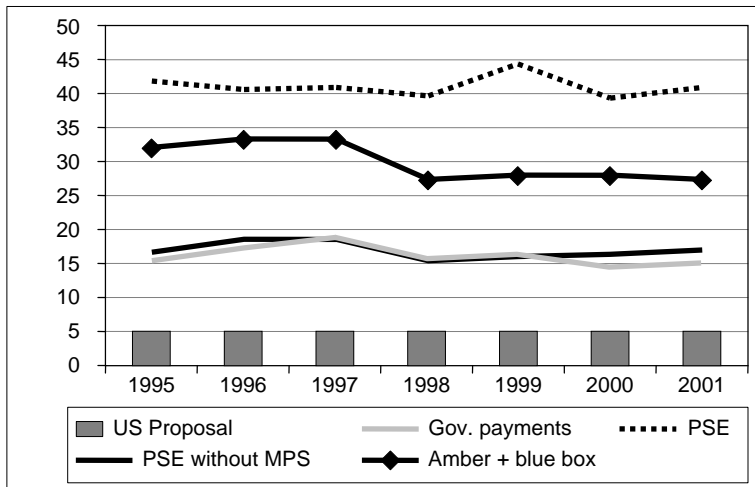
Notes: Amber box includes "*de minimis*". Forecasts for 2000-2001.
Sources: WTO, OECD, European Commission, FAPRI.

FIGURE 3.5. UNITED STATES: DOMESTIC SUPPORT AS
A % OF THE AGRICULTURAL OUTPUT
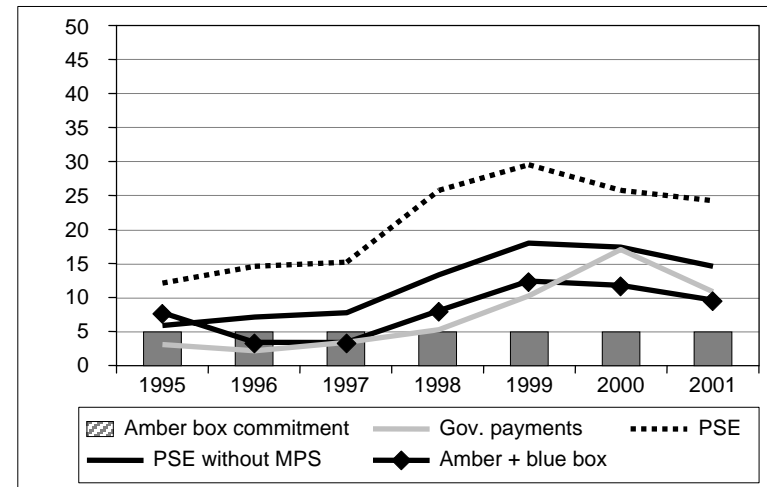
Notes: Amber box includes "*de minimis*". Forecasts for 1999-2001.
Sources: WTO, OECD, USDA-FSA, FAPRI.

FIGURE 3.6. EUROPEAN UNION:
DOMESTIC SUPPORT PER HECTARE (Euros)
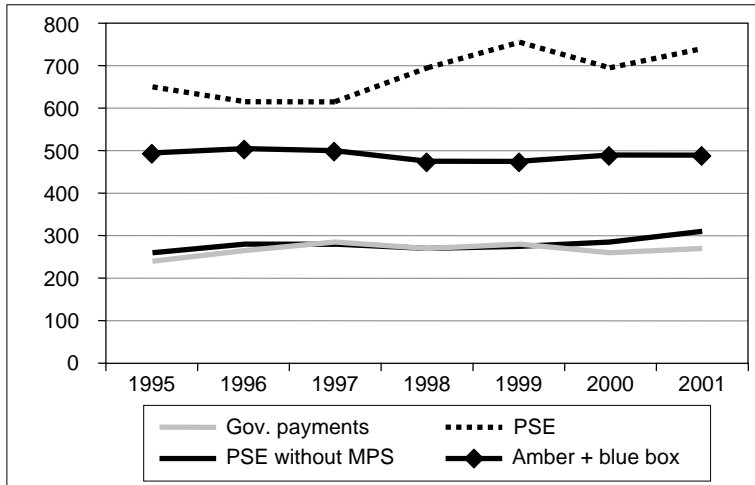
Notes: Amber box includes "*de minimis*". Forecasts for 2000-2001.
Sources: WTO, OECD, European Commission, FAPRI, FAO.

FIGURE 3.7. UNITED STATES:
DOMESTIC SUPPORT PER HECTARE (US$)
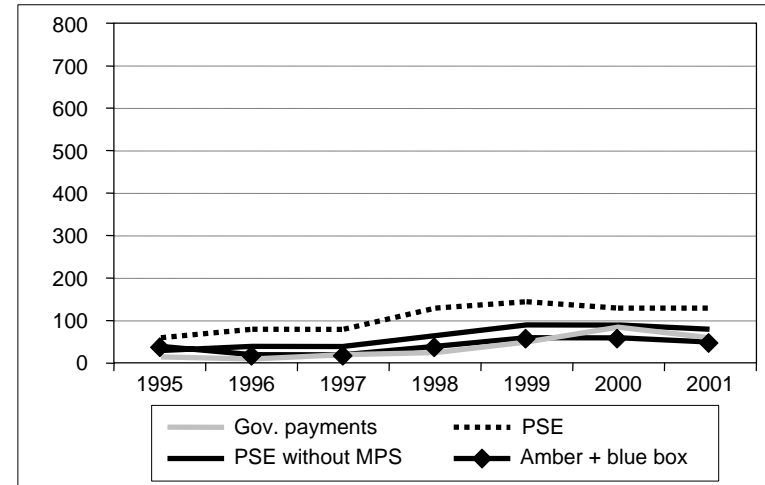
Notes: Amber box includes "*de minimis*". Forecasts for 1999-2001.
Sources: WTO, OECD, USDA-FSA, FAPRI.

FIGURE 3.8. EUROPEAN UNION:
DOMESTIC SUPPORT PER FARMER (Euros)
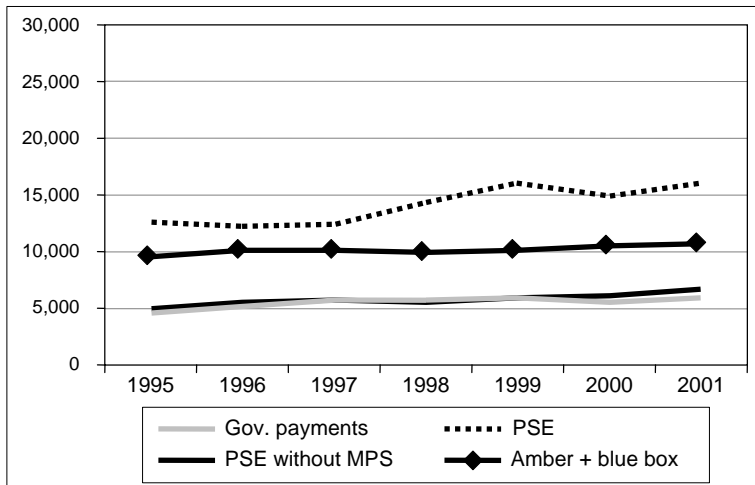
Notes: Amber box includes "*de minimis*". Forecasts for 2000-2001.
Sources: WTO, OECD, European Commission, FAPRI.

FIGURE 3.9. UNITED STATES:
DOMESTIC SUPPORT PER FARMER (US$)
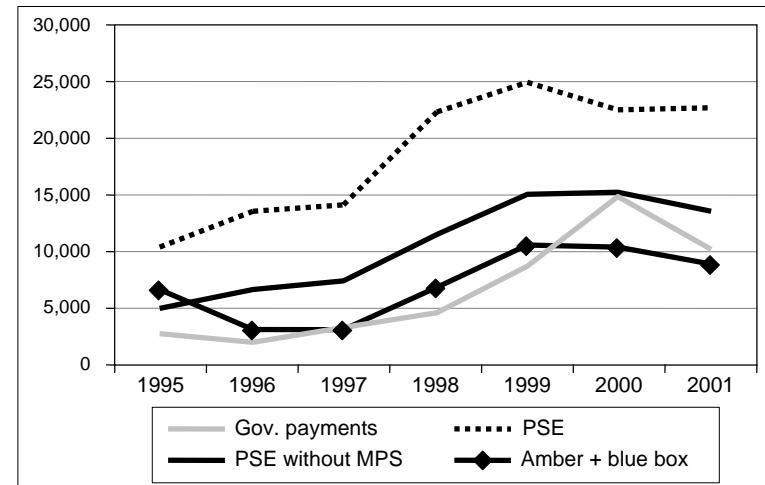
Notes: Amber box includes "*de minimis*". Forecasts for 1999-2001.
Sources: WTO, OECD, USDA-FSA, FAPRI.

3.2.3. Distribution of Domestic Support by Products

Figures 3.10 to 3.12 present the distribution of domestic support by products in the EU, US and like-minded countries. Generally speaking, the graphs based on PSE without MPS data and government payments should be close since both methodologies shows the real government outlays intended for producers. Some payments, such as compensatory and loan deficiency payments are direct payments to producers, while others are indirect payments, such as export programs and promotion export measures. With respect to the graphs displaying amber and blue box data on one side and PSE data on the other side, differences in the obtained results can be attributed to the fact that the former excludes green box programs while the latter measures the overall level of domestic support. In addition, the two methodologies use different definitions to calculate MPS (for more details, see Box 3.1). As a matter of fact, the gap between PSE and amber *plus* blue box reflects the weaknesses of the AMS indicator that have enabled some countries to use any possible loopholes to actually maintain or increase their agricultural protection.

- European Union -

In the case of the EU, Figure 3.10 shows that data reported for government payments and PSE without MPS are consistent, while strong differences are displayed in amber *plus* blue box and PSE. The level of support for dairy and poultry and pork is larger in PSE than in amber *plus* blue box whereas the opposite occurs with cereals. These differences are due to the divergence in methodology when measuring support for prices. In addition, PSE not only measures government subsidies but also trade barriers, such as tariffs and TRQs that increase substantially domestic prices at the farm gate level compared to world prices. As a result, if cuts in amber *plus* blue box are made in dairy, the reduction on the overall level of support for this sector would be less than expected because a large share of the internal market prices for this sector is managed through border measures. Therefore, for products that benefit from border protection, a real reduction in the level of domestic support could only occur if market access for these goods is enhanced at the same time as subsidies are cut. This relation between trade policy and domestic support explains why reduction commitments are easier to reach for some products than others.[36] The share of MPS in the overall support for agriculture is the part paid by the consumers. In the EU, this component reached 60%[37] by the year 2000, revealing that consumers, rather than governments, bear the largest cost of the agricultural protection.

- United States -

As Figure 3.11 shows, dissimilarities between government official outlays and PSE without MPS in the US are greater than in the EU. For instance, the absence of government payments for the meat sectors (beef, poultry and pork) contrasts with the data provided by the PSE without MPS indicator. The point is that in PSE, support for these sectors is concentrated in payments based on

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[36]   For more details on the relationship between domestic support and trade policies, see De Gorter [1999].

[37]   According to the OECD definition of MPS.

input use (interest concessions, fuel tax reductions and subsidies for grazing and irrigation) and to a lesser extent in payments based on overall farming income that are not necessarily product specific.[38] Therefore these payments may be included in the category "non-product specific" of the government payments data. When comparing amber *plus* blue box and PSE, impressive differences arise not only with respect to products but also in the overall level of support. According to amber *plus* blue box projections, agricultural support did not reach US$ 20 billion in 2001 while the OECD reported a PSE amounting almost US$ 50 billion. PSE level for meats (beef and poultry and pork), dairy and cereals are significantly higher than the support reported in amber *plus* blue box probably due to the fact that these products benefit from border protections that are included in the PSE measure but are absent from the amber *plus* blue box calculations. In addition, the "*de minimis* and non-product specific" category deserves special attention. Since 1997 the US has been using this category intensively, and it is exempted from reduction commitments. According to Hart and Babcock [2002], as a result of the forecasted recuperation in world prices the US could increase even its spending even more with "*de minimis*". In fact, higher international prices would raise production values, and as a consequence the "*de minimis*" exemption limits. Contrary to the EU, the US government largely finances the costs of supporting agriculture (68% of PSE was paid by the government in 2000).[39] However, for certain commodities the costs borne by consumers are disproportionate. For instance, in 2000 consumers paid 85% and 80%, respectively, of the support granted to the dairy and sugar industry, two of the largest subsidized sectors in the US.

- Like-Minded Countries -[40]

As illustrated in Figure 3.12, the cost of supporting agriculture in like-minded countries is almost exclusively borne by consumers (88%).[41] Dissimilarities between amber *plus* blue box level of support and PSE are even more impressive in like-minded countries, than in the EU or the US.[42] Furthermore, trends reversed in 1998 when Japan changed its program supporting the rice sector. Japan had traditionally supported this sector through the management of an administered price that maintains domestic prices 5 or 6 times higher than world prices. In 1997, Japan's AMS for rice amounted to US$ 19 billion, of which US$ 18 billion was MPS. In 1998, Japan notified the WTO that the government had stopped intervening in the price formation of rice, reducing its AMS in this sector to zero. However, according to the OECD, the internal prices for rice in Japan in 1998 were more than 5 times import parity. In fact, prices for rice were not affected by the change in government policy since the rice industry in Japan is heavily protected by border measures.

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[38]   Payments based on input use include explicit and implicit payments affecting specific variable input costs; the cost of on-farm technical, sanitary and phytosanitary services; or affecting specific fixed input costs, including investment costs. Payments based on overall farming income do not depend on the production of specific commodities or on the use of specific fixed or variable inputs (OECD [2001]).

[39]   Calculated according to the OECD methodology: PSE *minus* MPS.

[40]   Like-minded countries are the Czech Republic, Hungary, Iceland, Japan, Korea, Norway, Poland and Switzerland.

[41]   According to the OECD definition of MPS.

[42]   Government payments are not included due to the difficulty of obtaining official data from the eight countries included in the "like-minded" group in this paper.

This example illustrates one of the various weaknesses in the measurement of the price support element of the AMS that enables some countries to reduce their AMS substantially, even though their actual level of market distorting price support remains very high. It should be noticed that the simultaneous use of several protectionist instruments, such as high tariffs combined with official administration of prices as it was the case in Japan, can lead to a double-counting of the level of protection a product benefits from. Nonetheless, countries should not be allowed to determine their AMS commitments based on a level of support, which is double-counted for determined products. In fact once a country has eliminated one of the measures of support it used to give to product A -the official administered price of rice in Japan for instance- then this country is free to spend the equivalent amount (US$ 19 billion in the case of Japan) to support other products or measures that were not or less subsidized before, while the actual level of support received by the producers of product A remains unchanged. The support granted by the US to the dairy sector is another illustrative case. In 1998, the US notified a US$ 4.3 billion product-specific AMS for dairy using the difference between the CCC support price and the base price times production. But in 1998 actual spending on the dairy program was only about US$ 140 million because the base price was much lower than 1998 prices. So, the notified AMS really overstates protection. The actual milk prices in the US are supported through a combination of restrictions on imports through tariff quotas, export subsidies and regional pricing and movement restriction arrangements that are independent of the administered price that is used for AMS purposes. If the administered support price were abolished, it would not alter internal supported prices for milk, but it could provide a potential for the US to claim that it had no price support, and also virtually no AMS in milk. Such a change could be used to increase the available level of amber box support for other product and measures by about 20%, without altering the actual levels of support for milk. However, it is interesting to note that the 2002 Act's dairy market-loss payment program now looks like costing about three times what it was scored as costing when the Farm Bill was passed in May 2002 because milk prices have declined a lot. This could easily mean adding US$ 2 billion to the product-specific AMS in 2003, in addition to the US$ 4.3 billion, which will continue because the CCC support price continues at the same rate as before.

FIGURE 3.10
EUROPEAN UNION: DISTRIBUTION OF DOMESTIC SUPPORT BY PRODUCT
(Euros)

A. PSE without MPS

Legend: Other, Sugar, Oilseeds, Cereals, Dairy, Poultry/Pork, Beef

Source: OECD.

B. Government payments

Legend: NPS, Other, Sugar, Oilseeds, Cereals, Dairy, Poultry/Pork, Beef
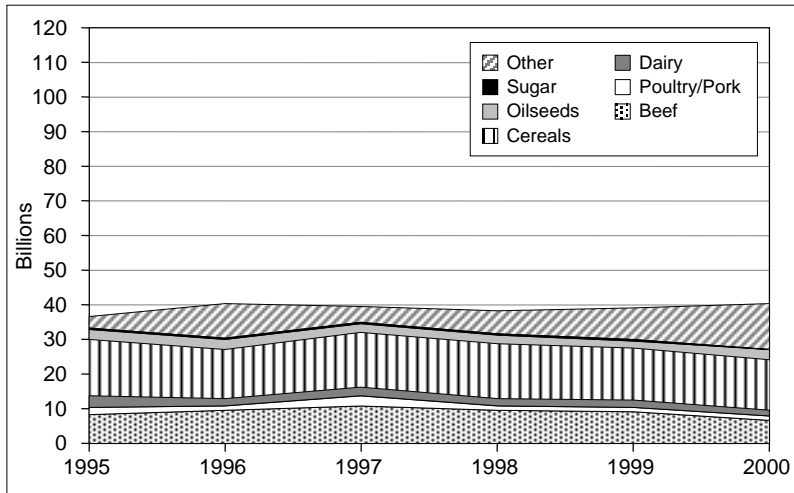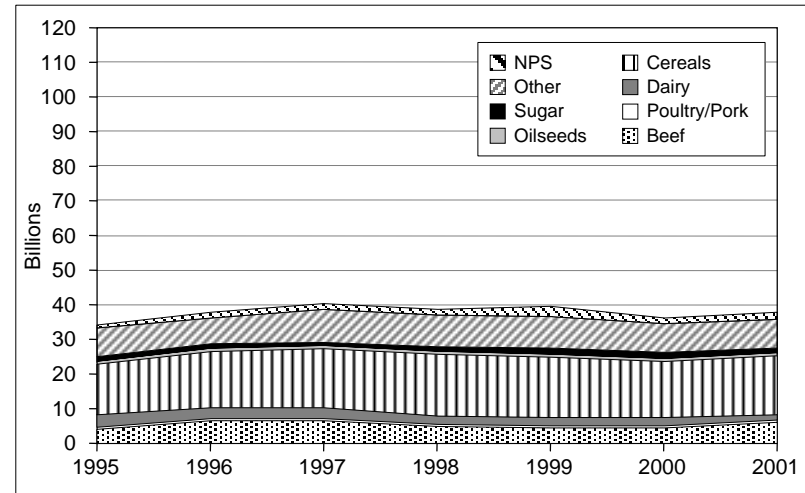
Source: European Commission.

C. Amber _plus_ Blue boxes

Legend: DeMin/NPS, Other, Sugar, Oilseeds, Cereals, Dairy, Poultry/Pork, Beef

Source: WTO notifications.

D. PSE

Legend: Other, Sugar, Oilseeds, Cereals, Dairy, Poultry/Pork, Beef
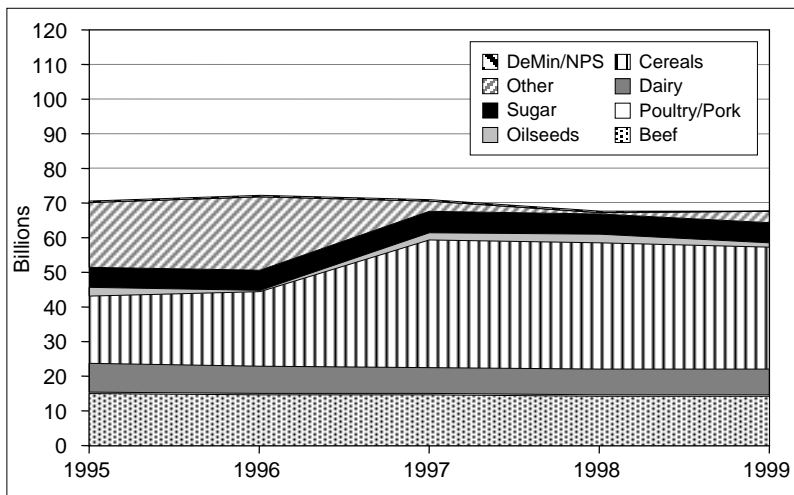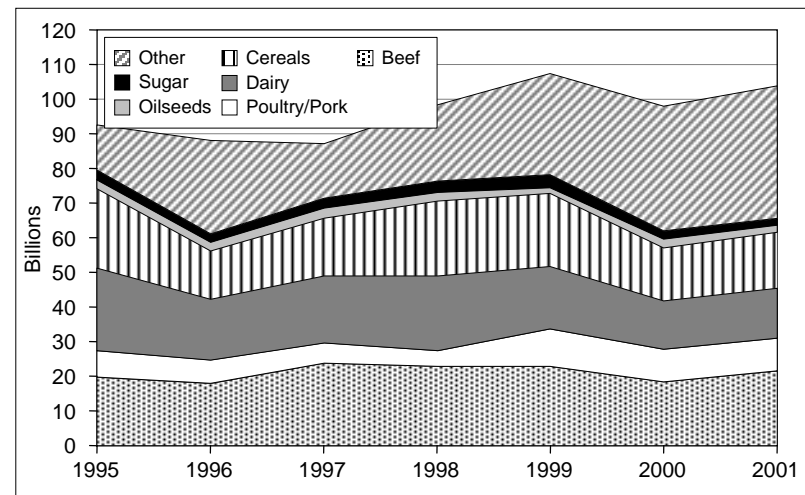
Source: OECD.

FIGURE 3.11
UNITED STATES: DISTRIBUTION OF DOMESTIC SUPPORT BY PRODUCT
(US$)

A. PSE without MPS

Legend: Other, Sugar, Oilseeds, Cereals, Dairy, Poultry/Pork, Beef

Source: OECD.

B. Government payments

Legend: NPS, Other, Sugar, Oilseeds, Cereals, Dairy
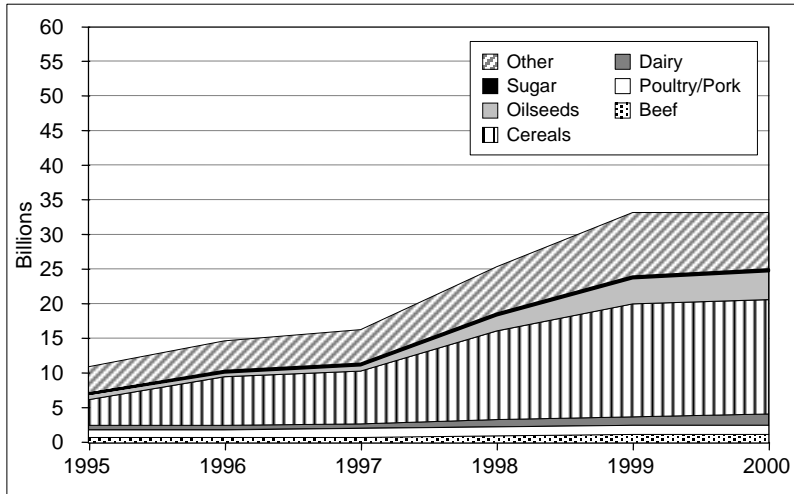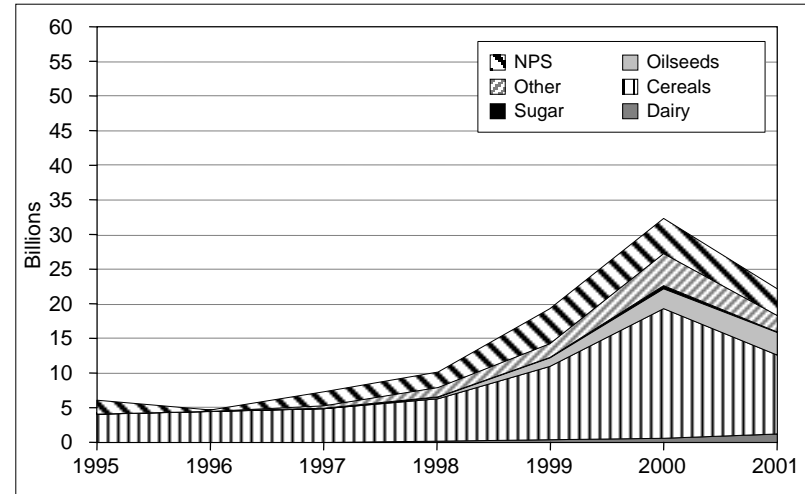
Source: USDA-FSA.

C. Amber *plus* Blue boxes

Legend: DeMin/NPS, Other, Sugar, Oilseeds, Cereals, Dairy
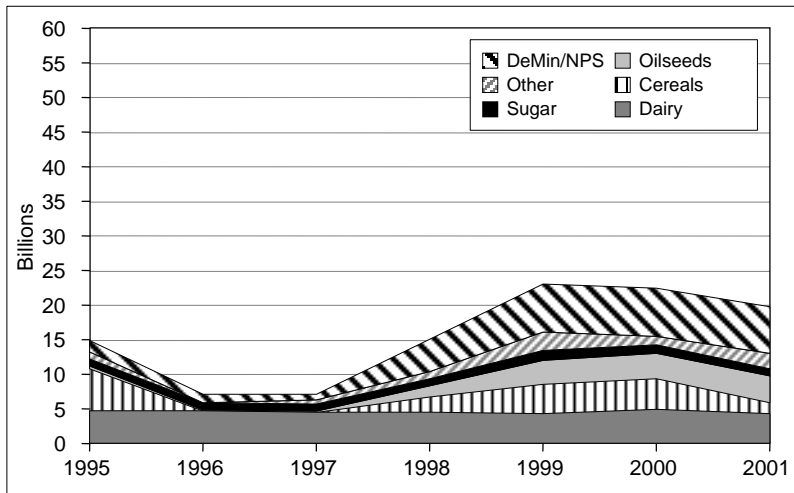
Sources: WTO notifications, FAPRI. Forecasts for 1999-2001.

D. PSE

Legend: Other, Sugar, Oilseeds, Cereals, Dairy, Poultry/Pork, Beef
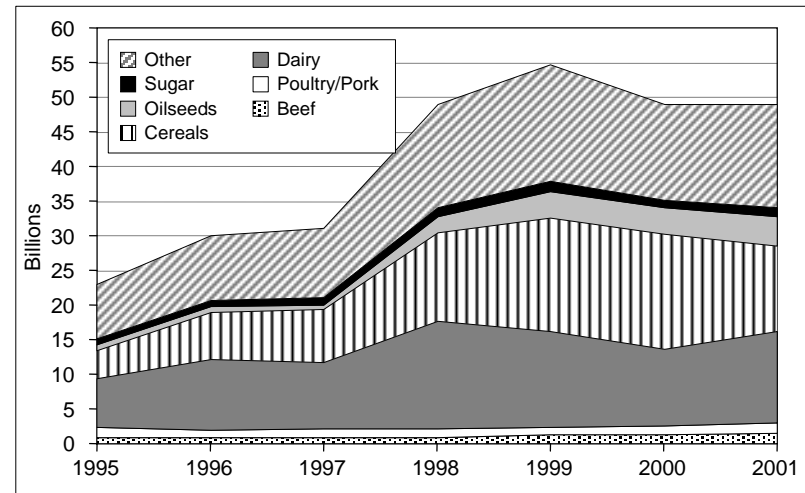
Source: OECD.

FIGURE 3.12
LIKE-MINDED COUNTRIES: DISTRIBUTION OF DOMESTIC SUPPORT BY PRODUCT
(US$)

A. PSE without MPS

Legend: Other, Sugar, Oilseeds, Cereals, Dairy, Poultry/Pork, Beef
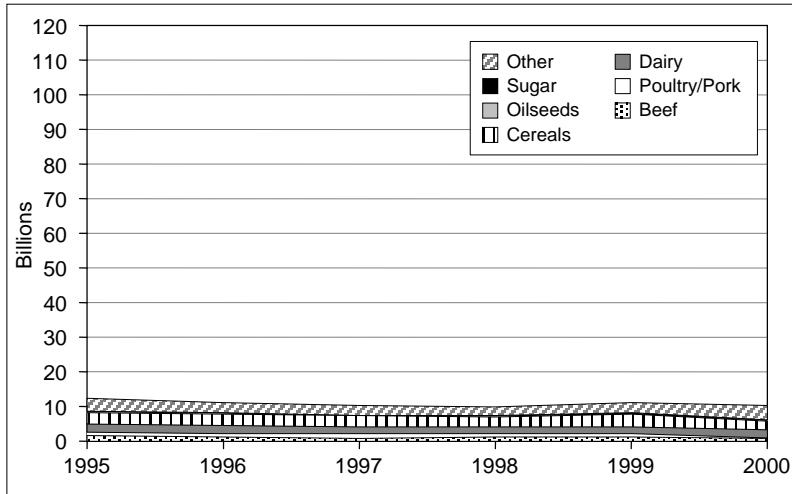
Source: OECD.

B. Amber *plus* Blue boxes

Legend: DeMin/NPS, Other, Sugar, Oilseeds, Cereals, Dairy, Poultry/Pork, Beef

Source: WTO notifications.

C. PSE

Legend: Other, Sugar, Oilseeds, Cereals, Dairy, Poultry/Pork, Beef
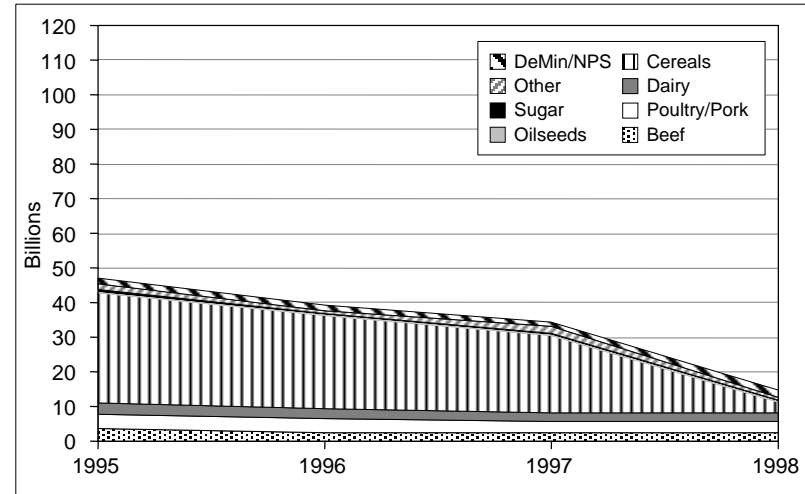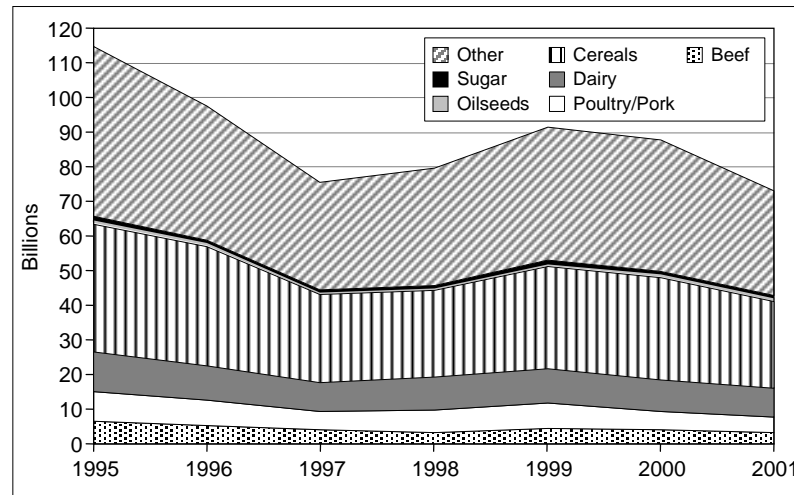
Source: OECD.

Note: Like-minded countries are the Czeck Republic, Hungary, Iceland, Japan, Korea, Norway, Poland and Switzerland.

IV. IDENTIFICATION OF SENSITIVE AGRICULTURAL PRODUCTS

In the previous sections II and III, an attempt was made to provide a realistic view on the level of tariff protection and subsidies that exist in the WH for sensitive agricultural products. However, as it has been previously noted, a full picture of sensitive products can only emerge once the three different mechanisms that potentially distort trade are combined (tariff barriers, non tariff barriers, and subsidies). In this final section, an effort is made to aggregate MFN Equivalent Tariffs, TRQs, TBT and SPS measures, Domestic Support, and Export Subsidies, into a single index of agricultural protection.

The first step was to group agricultural products into 32 sensitive categories. These categories were devised so as to present agricultural products groups in the WH that have significant trade flows, and/or face high dispersion on trade barriers.

The second step consisted in the creation of six different tables that provide a summary of the different potential trade distorting instruments by group of products and country. Tariff barriers measures are accounted for through MFN Tariffs and number of TRQs. To generate the tariff table, the simple average of the HS-8 digit MFN *ad-valorem* rates for each of the different group of products was calculated. As in the computations done in section II, all specific and mixed tariffs were expressed in terms of an *ad-valorem* equivalent. The Tariff Rate Quota table is straightforward as it indicates the number, if any, of TRQs that exist for each one of the 32 groups of products.

NTB measures are accounted for through the SPS and TBT tables. These tables provide the number of measures per product that each country has notified the WTO of between 1995 and 2001. It is important to observe that these notifications only indicate a change in a regulation that one country informed the WTO of. Therefore, notifications indicate the number of additional notified NTB restrictions that exist in each group of products, but not the sanitary and technical barriers themselves. Furthermore, no discrimination has been made between notifications that could be totally justifiable and those that could be more trade restrictive than others. However, studies do indicate that the number of notifications provide a conservative indicator of SPS and TBT issues among countries.[43]

Tables were also constructed to measure domestic support and export subsidies, using official notifications by the WTO members. Both tables were built upon the previous analysis presented in section III, and do provide the dollar denominated amount spent on subsidies for each group of products by country.[44] One problem that arose during the construction of these tables was the fact that some subsidies could not be associated with one specific product and were therefore not taken into consideration when calculating the final protection index. Table 4.1 provides an overview of all the restrictions imposed by each WH country.

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[43] For an assessment of NTB measures on agricultural trade in the WH see Barros, *et al.* [2002] and Vega [2002]. The SPS table was constructed using the data made available by Barros, *et al.* [2002], while the TBT table utilized data provided by Vega [2002].

[44] Domestic Support values do encompass the WTO amber box and blue box notifications.

TABLE 4.1
OVERVIEW OF AGRICULTURAL TRADE RESTRICTIONS
BY COUNTRY IN THE WESTERN HEMISPHERE

	Country	Imposed Tariff (%)	TRQ (nb)	SPS (nb)	TBT (nb)	Domestic Support (US$ mn)	Export Subsidies (US$ mn)
Mercosur	Argentina	14.6	-	163	2	81	-
	Brazil	14.4	4	69	54	396	-
	Paraguay	14.1	-	-	-	-	-
	Uruguay	14.4	-	18	-	6	-
NAFTA	Mexico	38.8	68	406	11	415	5
	Canada	27.7	123	309	25	670	-
	United States	22.6	376	989	120	15,134	147
Andean	Bolivia	10.0	-	-	-	-	-
	Colombia	16.1	66	79	7	10	23
	Ecuador	15.4	21	-	-	-	-
	Peru	18.3	-	145	-	-	-
	Venezuela	16.0	59	-	-	211	5
CACM	Costa Rica	17.0	73	56	4	1	123
	Guatemala	15.7	31	31	-	-	-
	Honduras	15.1	-	15	-	-	-
	Nicaragua	13.0	17	-	3	-	-
	El Salvador	12.5	37	84	67	-	-
Others	Chile	9.0	-	137	2	-	-
	Dominican Republic	18.1	-	1	-	-	-
	Panama	24.2	57	122	54	-	-
Caribbean Community	Antigua and Barbuda	23.7	-	-	-	-	-
	Trinidad and Tobago	23.7	-	1	-	-	-
	St. Lucia	23.7	-	-	-	-	-
	St. Kitts and Nevis	23.7	-	-	-	-	-
	Jamaica	23.7	-	16	21	-	-
	Grenada	23.7	-	-	-	-	-
	Dominica	23.7	-	-	-	-	-
	Barbados	23.7	37	4	1	-	-
	Bahamas	23.7	-	-	-	-	-
	St. Vincent	23.7	-	-	-	-	-
	FTAA	**17.7**	**969**	**2,645**	**371**	**16,923**	**303**
EU	European Union	n/a	256	n/a	n/a	77,254	5,996

Notes: - Domestic Support includes "amber box", "blue box" and *"de minimis"* WTO notifications.

  - "Imposed Tariffs" correspond to the weighted average MFN *ad-valorem* equivalent tariff for each country as calculated in section 2.3.2. A combined tariff was calculated for the Caribbean Community countries.

Sources: 2001 Hemispheric Database of the Americas, WTO notifications, AMAD, Barros, *et al.* [2002], and Vega [2002]. INT-IDB calculations.

The next step was to combine the above mentioned six tables into a final table that provides the concluding index of agricultural protection for each group of products in the WH. One of the challenges faced when producing such an index was the fact that each restriction mechanism has different dimensions. To produce measures that can be combined, the 32-product groups are ordered and divided into four groups, each containing eight product groups, for each one of the restriction mechanisms. For MFN tariff, for instance, the first group contains the eight product groups that face the highest tariff rates, and is therefore assigned an index of 4. The second group of eight products is assigned an index of 3, the third group an index of 2, and the fourth group, which contains the eight products with the smallest tariff rates, is assigned an index of 1. This procedure is repeated for all the six trade-restricting mechanisms. By assigning a weight to the different mechanisms and adding the values for each product group a final index is created. The weights used to calculate the index are as follows: 50% for traditional market access restricting mechanisms (30% for MFN Tariffs and 20% for number of TRQs); 25% for related issues in market access (20% for SPS and 5% for TBT notifications in the WTO); and 25% for subsidies (20% for domestic support and 5% for export subsidies notifications). The authors assigned these weights to give a higher magnitude to the measures related to market access.[45] The maximum value of the index for one specific group of products is 4 and the minimum value is 1. In other words, an index close to 4 corresponds to a high level of trade restrictions while an index close to 1 represents a low level.

It should be noticed that this final index has no elegant theoretical background; it is much more of a qualitative measure than a quantitative one. The main purpose is to provide negotiators with an assessment of the most sensitive products for future agricultural negotiations.

Table 4.2 shows the index values by product for all WH countries. The table also provides a general overview of the different restrictions faced by each group of sensitive agricultural products. Dark grey represents high trade restrictions while white represents low trade restrictions. It should also be noted that several different weights were used when calculating the index. Nevertheless, no major change in the order of the sensitive products was observed when different weights were used in other simulations. The most protected product group, as per the protection index, is dairy. It faces high trade access restrictions through all the different mechanisms. It is followed by meat (poultry and pork), sugar and food preparations, which face high trade restrictions through at least three of the six mechanisms.

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[45]   The best way to identify sensitive products and measure trade effects of removing tariff protection and subsidies is through the use of computable general equilibrium models (CGE). See Monteagudo and Watanuki [2002].

TABLE 4.2
OVERVIEW OF TRADE RESTRICTIONS FOR 32 AGRICULTURAL SENSITIVE GROUPS
OF PRODUCTS IN THE WESTERN HEMISPHERE

	Product	Imposed Tariff (%)	TRQ (nb)	SPS (nb)	TBT (nb)	Domestic Support (US$ mn)	Export Subsidies (US$ mn)	Index
1	Dairy	30.8	279	142	51	4,911.7	145.3	4.00
2	Meat: Pork	21.3	40	90	21	231.0	-	3.40
3	Meat: Poultry	35.5	57	122	19	0.5	1.4	3.35
4	Sugar	30.8	29	14	12	1,144.9	2.7	3.35
5	Food prep	18.3	42	245	65	-	0.1	3.25
6	Grains	15.4	139	85	40	2,972.5	5.0	3.20
7	Fruits	20.2	7	163	39	5.1	15.0	3.10
8	Tobacco	30.6	26	3	13	74.4	0.9	2.90
9	Vegetables	17.8	20	110	7	79.2	0.2	2.90
10	Meat (other)	17.9	17	155	22	3.7	-	2.90
11	Beverages	24.1	5	21	25	0.7	-	2.85
12	Pot Tom Onion	18.1	9	65	19	9.6	0.1	2.80
13	Eggs	22.4	16	96	1	-	-	2.75
14	Fats & Oils	14.6	33	176	1	0.3	1.6	2.70
15	Peanuts	19.8	19	9	-	340.7	-	2.65
16	Meat: Bovine	14.6	34	190	17	58.7	-	2.55
17	Coffee	20.6	11	14	-	33.8	1.2	2.50
18	Oilseeds	13.7	44	60	-	1,409.4	0.0	2.45
19	Sweeteners	15.0	37	9	3	0.3	1.6	2.35
20	Nuts	19.8	-	23	6	1.5	-	2.35
21	Juices	24.5	5	28	2	-	-	2.35
22	Cocoa	16.4	58	8	1	0.0	1.6	2.30
23	Tea Spices	15.2	7	24	3	-	0.1	2.10
24	Flowers Foil	19.0	-	13	-	-	2.2	1.95
25	Live ani plants	15.2	4	187	2	-	-	1.95
26	Ethyl Alcohol	24.2	-	2	-	-	-	1.90
27	Fibers	6.0	12	11	-	991.2	-	1.85
28	Feed	10.6	13	79	1	0.1	-	1.85
29	NES	6.4	1	389	-	-	0.1	1.70
30	Hides skins	6.8	-	105	1	-	-	1.45
31	Essent oils	8.4	-	5	-	0.1	-	1.20
32	Starches	11.3	5	2	-	-	0.6	1.10
33	No prod spec	-	-	-	-	4,654.0	123.0	-

Notes: - TBT and SPS data is for the period 1995-2002 (number of notifications), TRQ and Tariffs data is for 2000, domestic support and export subsidies data is for 1998.

- Domestic Support includes "amber box", "blue box" and *"de minimis"* WTO notifications.

- Imposed Tariffs represents the simple average of MFN *ad-valorem* equivalent tariffs for each group of products.

Sources: 2001 Hemispheric Database of the Americas, WTO notifications, AMAD, Barros, *et al.* [2002], and Vega [2002]. INT-IDB calculations.

V. CONCLUSIONS AND POLICY RECOMMENDATIONS

Considering the complexity and heterogeneousness of the agricultural sector in the Americas and its strategic importance both in regional and multilateral negotiations, these are our main conclusions and policy recommendations:

1. *Simultaneous barriers to agricultural trade*. Countries use several different trade distorting instruments in agriculture. Tariffs are the most commonly used, but other protection mechanisms such as TBT and sanitary restrictions, domestic support and export subsidies may also distort trade and are difficult to evaluate. Even tariffs barriers are difficult to measure since specific, mixed and TRQs are widely used by some WH countries. On one hand, the highest overall level of high agricultural tariffs has been observed on very small Caribbean islands. This represents a high tax on local poor consumers. On the other hand, developed countries are characterized by the application of very high tariffs to a very small group of politically sensitive products, while the rest of their tariffs are kept at very low levels. These sensitive products are further protected through specific and mixed tariffs, TRQs and other non-tariff barriers such as SPS and TBT.

2. *Export concentration*. In the majority of the WH countries, agricultural exports are highly concentrated in a small basket of specific products. Indeed for 10 countries coffee, bananas and sugar represent more than 50% of their agricultural exports. As a result, potential deadlocks in the negotiations will probably concern a very reduced group of products such as dairy, meats, sugar, tobacco, grains and fruits.

3. *Key issues in regional and multilateral agricultural trade negotiations*. Agriculture is an area that encompasses different systemic and non-systemic issues. Topics such as subsidies are systemic issues since any reduction of their use by one country will benefit all countries that this country trades with, and could have potential spillovers on world prices and market-shares. Subsidies are much better addressed through multilateral negotiations, such as the Doha Development Agenda of the WTO. On the other hand, market access issues, such as tariffs, TRQs and some non-tariff barriers, are non-systemic issues since they can be negotiated on a country-by-country basis without benefiting other trading partners. Market access is much better addressed in a bilateral or regional framework as negotiations between a reduced number of countries allow for deeper trade liberalization, normally starting with applied tariffs. So if WH countries continue to invest political and human capital in the FTAA process, the launch of the WTO Development Agenda will be beneficial for hemispheric agricultural integration. The new round will allow for the separation of the two most sensitive issues - market access and subsidies - with market access being primarily discussed at a regional level and subsidies at the multilateral level. However, it is legitimate for competitive countries in agriculture to try to secure that other systemic issues (such as environment disciplines or intellectual property rights) would be addressed through multilateral negotiations. In this case, some FTAA issues could be Doha plus while others not.

4. *RTR and REST as useful tools to balance tariff concessions*. The best solution for trade liberalization in the WH would be to implement zero tariffs for all products without exceptions.

The use of exceptions lists would certainly remove most of the "real" protected products from a RIA, and therefore undermine potential gains that could be achieved through such an agreement. However, if countries do insist on exceptions lists and/or a long tariff phase-out period, negotiators could use the RTR and REST indexes as a valid and useful tool to balance concessions and achieve progress in bilateral and regional agreements. Furthermore, they can also be used to detect potentially difficult sectors for future negotiations.

5. *Market Access in the WH: main gains and trade-offs*. The Central American countries, which face, on average, higher protection than they impose, would have the highest relative net gains in terms of overall market access, after a simultaneous lowering of agricultural tariff barriers in North America and industrial tariffs in South America. As regards the Mercosur countries, however, the agricultural sector liberalization will encompass trade-offs. While these countries would definitely gain from agricultural liberalization, they would also need to become net liberalizers of their industrial sector. The opposite is true for NAFTA countries. NAFTA countries will need to make trade-offs in terms of offering a broad agricultural access in order to secure access for industrial products.

6. *Subsidies: URAA loopholes and the need to avoid exceptions*. The URAA provides too many ways to avoid domestic and export subsidies reductions. The blue box encompassing payments only partially decoupled from the production that still produce distorting effects, the presence of trade-distorting programs into the green box, the absence of disciplines on export credit guarantees and the abuse of food aid programs are examples of the current loopholes. In addition, some countries take advantage of the *"de minimis"* exemption and non-product specific subsidies to increase their level of domestic support without exceeding their WTO commitments. In our opinion, *"de minimis"* exemptions should be eliminated, and reductions commitments should be also established on a product-by-product basis. The S&D box is another exception that could be phased out if the majority of developing countries continue to be unable to use it. These countries are not applying trade-distorting subsidies, and there is no reason to keep or create boxes that will not really be used. If countries are really keen to eliminate all trade and production distorting subsidies, in the long run they should avoid any kind of exceptions.

7. *Full decoupling of payments*. Negotiators should target the full decoupling of the government payments to producers, as the best way to prevent distortion of production and trade. In other words, payments should be fully decoupled from the volume of production, planted area or animal unit.

8. *Market access should be enhanced at the same time that subsidies are cut*. Reductions in subsidies are very much related to market access enhancement and vice-versa. In fact, subsidies through MPS and border measures (tariffs, TRQs, non-tariff barriers, etc.) contribute simultaneously to the fact that producer prices are set at higher levels when compared to world prices. The way MPS is calculated (depending on whether government administered prices are used or not) is particularly important because it has serious consequences in terms of which subsidies should be phased out for each product to really liberalize trade. For instance, Japan claimed to have eliminated amber box support for rice after it abolished the government-

administered price for this product. However actual prices paid to producers remained unchanged for this sector, as they are still supported through border measures. This example illustrates that a real reduction in the level of domestic support could only happen if market access is enhanced at the same time that subsidies are cut. Comprehensive results could only be achieved if market access and subsidies are addressed at the same time. In the case that they are addressed in regional and multilateral parallel negotiations, policymakers should try to build a "global single undertaking" provision between these processes.

TABLE A.1
AGRICULTURAL SECTOR TRADE AND MFN TARIFF STRUCTURE OF
THE WESTERN HEMISPHERE COUNTRIES AT HS 8 DIGIT LEVEL (2000)

		Country	Trade Balance ('000)	Nb of Tariff Lines		Frequency Distribution of Tariff Rates					Main Statistics				TRQs
				Ad Val	Non Ad Val [1]	0%	0-15%	15-30%	30-50%	>50%	Mean	Median	St Dev	Max	
1	Mercosur	Argentina	9,494,815	940	-	79	564	296	1	-	12.7	13.0	5.9	32.0	-
2		Brazil	8,050,652	940	-	79	565	296	-	-	12.6	13.0	5.8	27.0	4
3		Paraguay	302,221	945	-	79	576	286	4	-	12.3	13.0	5.6	30.0	-
4		Uruguay	579,329	908	-	77	552	279	-	-	12.4	13.0	5.6	23.0	-
5	NAFTA	Mexico	(2,101,401)	1,016	53	30	496	427	62	54	23.3	15.0	37.8	260.0	68
6		Canada	4,142,472	979	362	538	656	46	3	98	22.4	3.0	63.1	538.0	123
7		United States	14,237,485	989	747	372	1,083	161	59	61	11.4	3.7	32.0	350.0	376
8	Andean	Bolivia	169,664	873	-	15	858	-	-	-	9.8	10.0	1.3	10.0	0
9		Colombia	1,441,657	881	-	-	280	601	-	-	14.5	15.0	5.5	20.0	66
10		Ecuador	1,117,100	865	-	20	268	577	-	-	14.3	15.0	5.7	20.0	21
11		Peru	(258,173)	900	-	-	530	314	56	-	17.1	12.0	6.5	30.0	0
12		Venezuela	(1,309,192)	865	-	-	278	591	-	-	14.6	15.0	5.4	20.0	59
13	CACM	Costa Rica	1,241,539	1,138	-	238	796	-	64	40	13.8	14.0	20.0	162.0	73
14		Guatemala	919,306	811	60	208	215	388	-	-	9.2	10.0	6.5	20.0	31
15		Honduras	98,404	869	-	-	425	426	13	5	11.5	15.0	8.4	55.0	0
16		Nicaragua	141,281	869	-	197	638	18	7	9	7.3	10.0	7.4	76.7	17
17		El Salvador	(90,269)	937	25	217	217	429	49	-	11.2	15.0	8.9	40.0	37
18	Others	Chile	1,567,390	747	-	-	747	-	-	-	9.0	9.0	-	9.0	0
19		Dominican Republic	(327,892)	778	-	-	229	277	272	-	21.2	25.0	10.6	35.0	0
20		Panama	(67,856)	1,334	-	67	455	723	48	41	15.0	15.0	20.8	300.0	57
21	Caribbean Community	Antigua and Barbuda	(73,457)	999	19	218	246	208	327	-	17.3	20.0	14.7	45.0	0
22		Trinidad and Tobago	(49,375)	1,000	24	389	80	245	284	2	16.6	15.0	16.7	75.0	0
23		St. Lucia	(43,929)	1,024	-	285	238	173	328	-	16.5	10.0	16.0	45.0	0
24		St. Kitts and Nevis	(27,211)	998	22	257	257	120	364	-	17.5	10.0	16.3	40.0	0
25		Jamaica	(133,611)	1,021	-	410	61	224	321	5	17.2	15.0	17.0	75.0	0
26		Grenada	(19,639)	1,015	1	120	351	219	324	-	18.2	15.0	15.1	40.0	0
27		Dominica	(8,666)	579	439	159	55	78	287	-	22.7	25.0	17.9	45.0	0
28		Barbados	(94,877)	886	27	-	349	194	246	97	36.6	20.0	51.6	243.0	37
29		Bahamas	(615,499)	676	-	152	788	-	-	3	25.4	30.0	17.6	260.0	0
30		St. Vincent	(4,874)	1,007	13	117	392	228	270	-	17.0	10.0	15.0	40.0	0
		Sum or Average	38,277,394	926	60	144	442	261	113	14	16.0	14.1	15.4	98.9	969
31	EU	EU-15	(4,625,098)	1,227	852	845	505	513	136	80	18.3	11.5	24.5	251.6	256

Note: 1. Non *ad-valorem* = sum of all specific and mixed rates.
Sources: 2001 Hemispheric Database of the Americas and AMAD. IDB-INT calculations.

TABLE A.2
INDUSTRIAL SECTOR TRADE AND MFN TARIFF STRUCTURE OF
THE WESTERN HEMISPHERE COUNTRIES AT HS 8 DIGIT LEVEL (2000)

		Country	Trade Balance ('000)	Nb of Tariff Lines		Frequency Distribution of Tariff Rates					Main Statistics			
				Ad Val	Non Ad Val [1]	0%	0-15%	15-30%	30-50%	>50%	Mean	Median	St Dev	Max
1	Mercosur	Argentina	(8,591,613)	8,431	-	391	4,631	3,368	41	-	13.4	15.0	6.8	33.0
2		Brazil	(13,958,529)	8,431	-	63	3,841	4,489	38	-	14.3	17.0	6.9	35.0
3		Paraguay	(1,490,719)	8,450	-	397	5,216	2,837	-	-	11.5	11.0	6.7	28.0
4		Uruguay	(1,748,646)	7,945	-	338	4,627	2,980	-	-	12.1	13.0	7.0	23.0
5	NAFTA	Mexico	(1,672,518)	10,272	19	194	5,268	4,345	484	-	15.6	13.0	8.1	35.0
6		Canada	14,088,476	6,777	47	3,291	2,855	677	1	-	4.4	2.5	5.8	41.3
7		United States	(478,163,301)	7,894	546	2,766	5,227	384	58	5	4.5	3.0	5.8	58.4
8	Andean	Bolivia	(573,441)	5,815	-	390	5,425	-	-	-	9.1	10.0	2.7	10.0
9		Colombia	192,215	5,740	-	120	4,357	1,253	10	-	11.3	10.0	6.2	35.0
10		Ecuador	283,231	4,509	-	109	3,373	1,020	-	7	10.9	10.0	7.0	99.0
11		Peru	(329,516)	5,694	-	-	4,995	699	-	-	13.0	12.0	2.6	20.0
12		Venezuela	17,373,749	5,742	-	38	4,435	1,257	12	-	11.6	10.0	6.0	35.0
13	CACM	Costa Rica	(1,787,135)	5,119	-	2,671	2,443	-	5	-	4.8	-	5.7	49.0
14		Guatemala	(3,104,732)	5,079	17	2,593	1,788	714	-	1	5.3	-	7.5	25.0
15		Honduras	(1,961,542)	5,044	-	-	3,926	1,111	7	-	6.9	1.0	7.5	35.0
16		Nicaragua	(1,230,168)	5,018	-	2,636	2,382	-	-	-	3.4	-	3.9	15.0
17		El Salvador	(2,374,375)	5,157	-	2,627	1,830	700	-	-	6.7	-	8.4	30.0
18	Others	Chile	(456,412)	5,105	-	-	5,105	-	-	-	9.0	9.0	-	9.0
19		Dominican Republic	(4,826,041)	5,163	-	-	2,838	1,935	390	-	17.3	15.0	10.1	35.0
20		Panama	(2,538,561)	7,213	-	325	6,860	24	2	2	8.2	10.0	5.8	87.0
21	Caribbean Community	Antigua and Barbuda	(230,467)	5,277	-	631	3,082	1,509	45	10	10.9	5.0	10.6	70.0
22		Trinidad and Tobago	(626,901)	5,268	2	2,401	1,555	1,213	101	-	7.6	2.0	9.9	45.0
23		St. Lucia	(228,631)	5,275	-	2,159	1,729	1,190	172	25	9.0	5.0	11.4	95.0
24		St. Kitts and Nevis	(120,848)	5,279	-	1,186	2,490	1,477	116	10	10.9	5.0	11.6	70.0
25		Jamaica	(1,307,825)	5,216	-	3,360	602	1,157	97	-	6.7	-	10.0	40.0
26		Grenada	(123,467)	5,082	-	221	3,575	1,141	145	-	10.0	5.0	8.4	40.0
27		Dominica	(70,919)	5,275	-	226	3,769	1,128	152	-	10.8	5.0	9.7	45.0
28		Barbados	(715,563)	5,043	-	-	3,701	1,161	142	39	11.0	5.0	11.7	145.0
29		Bahamas	(3,306,719)	4,896	-	247	210	715	3,617	107	32.0	35.0	11.4	100.0
30		St. Vincent	(131,971)	5,257	-	406	3,577	1,153	121	-	9.6	5.0	8.3	40.0
		Sum or Average	(499,732,889)	6,016	21	993	3,524	1,321	192	7	10.4	7.8	7.4	47.6
31	EU	EU-15	(66,693,698)	10,659	41	2,314	8,176	210	-	-	4.7	3.7	4.4	26.0

Note: 1. Non *ad-valorem* = sum of all specific and mixed rates.
Sources: 2001 Hemispheric Database of the Americas and AMAD. IDB-INT calculations.

TABLE B.1A
AGRICULTURAL MFN TARIFFS WEIGHTED BY EXPORT AT HS 6 DIGIT LEVEL (2000)

Imposed/Faced Tariffs		ARG	BRA	PAR	URU	CAN	MEX	USA	CHI	DOM	PAN	CR	GTM	HND	NIC	SLV	BOL	COL	ECU	PER	VEN	Caricom	EU
Mercosur	Argentina		14.5	11.6	16.0	14.2	15.8	14.1	15.4	17.1	15.1	13.9	15.0	13.8	14.9	15.7	12.0	14.7	13.7	14.0	16.4	18.9	17.8
Mercosur	Brazil	13.0		11.4	16.0	14.1	15.7	14.0	15.4	16.5	14.9	13.9	14.5	13.8	14.5	15.5	12.0	14.4	13.8	14.0	16.5	18.2	17.6
Mercosur	Paraguay	12.7	14.1		15.2	13.7	15.5	13.7	14.0	18.7	15.2	13.9	15.7	13.9	15.1	15.9	12.1	15.0	13.7	14.2	16.2	19.8	16.4
Mercosur	Uruguay	12.7	14.1	11.6		13.7	15.4	13.8	15.2	16.6	14.4	13.7	14.4	13.8	14.1	14.5	11.7	14.4	13.7	13.9	16.4	16.0	16.9
NAFTA	Canada	27.9	31.4	4.8	51.1		18.0	36.9	32.3	30.9	19.1	19.4	14.0	3.4	25.5	39.4	19.8	14.8	7.3	13.2	29.9	40.2	67.6
NAFTA	Mexico	45.6	49.8	25.2	38.7	35.1		50.8	32.0	55.3	32.6	28.2	37.9	25.3	37.9	44.3	21.8	38.5	30.1	26.5	30.3	51.7	44.5
NAFTA	United States	17.5	35.4	9.3	25.9	12.8	12.2		8.6	30.6	11.3	11.5	17.6	7.7	25.8	12.1	8.4	9.9	6.3	9.5	33.2	19.6	30.1
	Chile	9.0	9.0	9.0	9.0	9.0	9.0	9.0		9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Dominican Republic	14.3	15.2	9.0	22.8	19.7	24.3	18.0	27.6		22.3	22.6	19.1	17.7	18.0	19.6	10.9	20.9	25.0	21.6	22.9	24.7	23.1
	Panama	13.1	35.9	14.6	45.9	18.6	18.4	24.1	14.1	44.0		18.2	32.3	17.1	30.0	25.5	12.3	25.3	16.3	18.9	20.7	42.7	25.8
CACM	Costa Rica	10.2	19.3	5.1	24.8	13.7	15.4	17.2	14.6	21.6	17.9		18.3	14.9	21.6	17.5	8.6	17.0	14.1	14.5	14.2	22.2	21.5
CACM	Guatemala	10.6	12.9	4.9	40.4	12.9	39.4	14.8	17.0	19.5	15.8	14.9		14.7	15.3	16.2	7.7	15.0	15.5	14.1	30.6	26.7	18.0
CACM	Honduras	9.2	15.1	6.4	22.6	11.6	16.3	15.1	16.3	20.2	17.9	17.7	19.4		17.2	19.1	7.6	18.5	17.3	16.6	18.4	21.9	16.1
CACM	Nicaragua	8.7	17.8	4.5	16.8	7.2	10.4	13.5	9.4	18.6	12.2	10.4	15.0	10.2		13.6	6.4	12.7	10.3	10.4	9.9	18.3	10.7
CACM	El Salvador	8.3	12.6	4.9	20.3	12.4	16.9	12.4	14.6	19.5	16.8	15.0	17.4	15.1	17.1		7.2	16.4	14.7	14.4	15.1	22.3	17.3
Andean	Bolivia	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	9.7	10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Andean	Colombia	16.6	16.3	15.3	18.6	16.3	16.1	16.1	16.3	16.9	15.6	14.7	13.8	12.5	14.3	14.1	16.1		14.4	14.0	17.4	17.7	17.6
Andean	Ecuador	15.9	16.1	14.0	18.5	15.4	16.0	15.4	16.0	16.9	15.2	14.6	13.8	12.5	14.0	14.0	15.9	13.0		14.0	17.3	17.7	17.1
Andean	Peru	17.4	17.8	14.4	24.1	20.1	18.0	17.8	21.1	17.2	20.6	21.2	18.9	20.2	19.9	19.0	13.9	18.4	21.6		17.2	17.9	18.5
Andean	Venezuela	16.6	16.3	15.2	18.6	16.3	16.1	16.0	16.3	16.9	15.6	14.8	13.9	12.5	14.3	14.1	16.1	13.1	15.0	14.1		17.8	17.5
	CARICOM	17.4	23.7	13.8	23.3	19.8	37.7	22.6	30.3	31.9	34.8	36.0	30.9	34.4	28.5	30.7	20.6	33.2	34.7	29.0	30.9		25.6
	European Union	19.7	20.4	16.3	75.3	29.4	19.9	28.4	16.6	35.3	76.1	54.2	28.1	21.9	32.8	14.9	6.9	30.7	83.8	11.0	28.1	41.4	
	Average	**15.5**	**19.9**	**11.0**	**26.4**	**16.0**	**17.9**	**18.7**	**17.8**	**23.0**	**20.1**	**18.5**	**18.5**	**15.0**	**19.5**	**18.8**	**12.2**	**17.8**	**19.1**	**15.1**	**20.0**	**23.6**	**21.8**

MFN

Sources: 2001 Hemispheric Database of the Americas and AMAD. IDB-INT calculations.

TABLE B.1B
AGRICULTURAL PREFERENTIAL TARIFFS WEIGHTED BY EXPORT AT HS 6 DIGIT LEVEL (2000)

Imposed/Faced Tariffs		ARG	BRA	PAR	URU	CAN	MEX	USA	CHI	DOM	PAN	CR	GTM	HND	NIC	SLV	BOL	COL	ECU	PER	VEN	Caricom	EU
		Mercosur				NAFTA						CACM					Andean					Caricom	EU
Mercosur	Argentina		1.9	0.2	0.1	14.2	15.8	14.1	15.4	17.1	15.1	13.9	15.0	13.8	14.9	15.7	12.0	14.7	13.7	14.0	16.4	18.9	17.8
	Brazil	0.0		0.0	0.0	14.1	15.7	14.0	15.4	16.5	14.9	13.9	14.5	13.8	14.5	15.5	12.0	14.4	13.8	14.0	16.5	18.2	17.6
	Paraguay	0.0	0.0		0.0	13.7	15.5	13.7	8.1	18.7	15.2	13.9	15.7	13.9	15.1	15.9	3.2	15.0	13.7	14.2	16.2	19.8	16.4
	Uruguay	0.0	0.7	0.0		13.7	15.4	13.8	15.2	16.6	14.4	13.7	14.4	13.8	14.1	14.5	11.7	14.4	13.7	13.9	16.4	16.0	16.9
NAFTA	Canada	27.9	31.4	4.8	51.1		9.2	25.6	17.6	30.9	19.1	19.4	14.0	3.4	25.5	39.4	19.8	14.8	7.3	13.2	29.9	23.8	67.6
	Mexico	45.6	49.8	25.2	38.7	7.3		26.5	30.0	55.3	32.6	20.6	37.9	25.3	24.2	44.3	17.5	19.4	30.1	26.5	19.2	18.3	44.5
	United States	17.3	35.2	9.1	24.6	7.3	7.6		8.3	26.8	7.3	7.4	15.3	5.2	24.9	11.3	4.7	5.7	1.7	3.4	32.0	13.0	30.1
	Chile	9.0	9.0	9.0	9.0	9.0	0.4	9.0		9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	0.4	1.3	1.6	9.0	9.0
	Dominican Republic	14.3	15.2	9.0	22.8	19.7	24.3	18.0	27.6		22.3	22.6	19.1	17.7	18.0	19.6	10.9	20.9	25.0	21.6	22.9	24.7	23.1
	Panama	13.1	35.9	14.6	45.9	18.6	18.4	24.1	14.1	44.0		18.2	32.3	17.1	30.0	25.5	12.3	25.3	16.3	18.9	20.7	42.7	25.8
CACM	Costa Rica	10.2	19.3	5.1	24.8	13.7	7.0	17.2	14.6	21.6	12.3		11.3	9.2	10.2	11.3	8.6	17.0	14.1	14.5	14.2	22.2	21.5
	Guatemala	10.6	12.9	4.9	40.4	12.9	12.9	14.8	17.0	11.2	15.8	2.4		9.3	6.4	8.0	7.7	15.0	15.5	14.1	30.6	26.7	18.0
	Honduras	9.2	15.1	6.4	22.6	11.6	13.8	15.1	16.3	20.2	17.9	17.7	19.4		17.2	19.1	7.6	18.5	17.3	16.6	18.4	21.9	16.1
	Nicaragua	8.7	17.8	4.5	16.8	7.2	8.1	13.5	9.4	18.6	10.0	2.7	10.5	6.7		9.4	6.4	12.7	10.3	10.4	9.9	18.3	10.7
	El Salvador	8.3	12.6	4.9	20.3	12.4	16.9	12.4	14.6	19.5	16.8	15.0	17.4	15.1	17.1		7.2	16.4	14.7	14.4	15.1	22.3	17.3
Andean	Bolivia	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	9.7	10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
	Colombia	16.6	14.9	15.3	18.6	16.3	16.1	16.1	16.0	16.9	15.6	14.5	13.8	12.5	14.3	13.5	16.1		14.4	13.5	17.4	17.7	17.6
	Ecuador	15.9	16.1	14.0	18.5	15.4	16.0	15.4	16.0	16.9	15.2	14.6	13.8	12.5	14.0	14.0	15.9	13.0		14.0	17.3	17.7	17.1
	Peru	15.0	17.2	14.4	24.1	20.1	18.0	17.8	21.1	17.2	20.6	21.2	18.9	20.2	19.9	19.0	13.9	18.4	21.6		17.2	17.9	18.5
	Venezuela	13.1	13.6	10.2	18.0	16.3	16.1	16.0	2.5	16.9	15.6	14.8	13.9	12.5	14.3	14.1	2.6	5.7	11.1	1.8		17.8	17.5
	CARICOM	17.4	23.7	13.8	23.3	19.8	37.7	22.6	30.3	31.9	34.8	36.0	30.9	34.4	28.5	30.7	20.6	33.2	34.7	29.0	30.9		25.6
	European Union	19.7	20.3	16.3	75.3	29.4	19.9	28.4	16.6	27.9	76.1	52.1	26.6	19.6	32.0	13.9	4.7	27.9	81.9	5.7	21.1	32.2	
	Average	**13.4**	**17.7**	**9.1**	**24.0**	**14.4**	**15.0**	**17.0**	**16.0**	**22.1**	**19.5**	**16.8**	**17.8**	**14.0**	**17.8**	**17.8**	**10.7**	**16.2**	**18.2**	**13.6**	**18.8**	**20.4**	**21.8**

(Row group label at left margin: Preferential)

Sources: 2001 Hemispheric Database of the Americas and AMAD. IDB-INT calculations.

TABLE B.2A
INDUSTRIAL MFN TARIFFS WEIGHTED BY EXPORT AT HS 6 DIGIT LEVEL (2000)

	Imposed/Faced Tariffs	Mercosur				NAFTA						CACM					Andean					Caricom	EU
		ARG	BRA	PAR	URU	CAN	MEX	USA	CHI	DOM	PAN	CR	GTM	HND	NIC	SLV	BOL	COL	ECU	PER	VEN	Caricom	EU
Mercosur	Argentina		14.6	14.8	17.0	15.4	18.3	14.2	9.7	11.1	13.8	13.8	14.8	15.9	12.3	18.2	7.0	8.2	5.7	9.8	4.0	8.6	16.2
	Brazil	14.4		14.9	17.3	17.6	21.3	17.3	9.8	11.7	14.0	21.8	15.6	16.0	12.4	18.1	7.9	11.0	9.6	10.0	8.2	9.7	18.2
	Paraguay	9.4	11.3		14.2	10.8	13.8	11.3	9.2	9.9	13.2	13.6	13.7	15.4	11.7	16.6	6.3	7.2	5.0	9.3	3.0	7.8	12.3
	Uruguay	10.5	12.0	14.1		11.7	14.7	11.5	8.9	10.8	13.6	11.7	14.1	15.3	11.9	17.2	5.5	7.5	5.3	9.3	3.8	8.1	12.9
NAFTA	Canada	3.6	3.7	6.0	6.2		4.8	3.3	1.1	6.7	3.3	3.7	5.0	4.7	3.3	7.8	1.8	3.5	2.0	3.4	2.4	4.2	4.3
	Mexico	16.6	17.1	20.0	19.4	16.7		14.9	14.6	16.5	25.8	12.6	18.9	21.4	23.3	21.5	13.1	15.7	16.7	14.6	14.5	12.9	17.2
	United States	3.5	3.5	5.7	5.8	2.9	4.2		1.7	3.3	2.4	2.9	3.3	2.0	1.8	5.4	1.9	3.1	2.8	3.8	2.4	2.2	3.3
	Chile	9.0	9.0	9.0	9.0	9.0	9.0	9.0		9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Dominican Republic	15.2	14.9	22.6	21.6	15.7	17.4	12.9	11.0		26.4	12.6	17.9	21.1	24.8	22.2	11.4	12.9	12.7	14.0	11.0	11.0	15.4
	Panama	9.7	9.6	11.9	11.2	9.3	9.3	8.4	10.0	21.7		7.6	8.7	12.7	13.1	12.9	7.3	7.2	6.6	9.8	11.3	5.5	9.4
CACM	Costa Rica	5.4	4.8	8.2	8.1	5.7	6.4	3.5	3.0	6.7	9.7		8.2	10.3	8.8	10.2	3.5	5.2	4.8	4.9	4.7	3.4	4.9
	Guatemala	5.7	5.9	11.2	10.3	7.3	7.9	4.1	3.1	5.6	10.3	6.0		11.5	9.5	12.7	5.3	5.9	4.5	5.8	3.2	4.8	6.0
	Honduras	9.9	6.6	9.9	10.7	10.6	10.9	5.0	4.0	9.3	11.6	6.4	11.9		9.9	13.1	6.4	11.9	14.6	6.6	14.9	7.7	7.5
	Nicaragua	3.7	3.1	5.5	5.4	4.2	4.1	2.3	2.1	4.5	7.8	2.9	5.0	7.3		6.4	3.8	3.4	3.2	3.9	2.9	3.4	3.2
	El Salvador	5.7	5.6	10.6	10.5	7.6	8.5	3.9	3.1	5.6	10.3	6.3	9.6	11.5	9.4		4.1	5.9	5.2	5.9	3.7	4.3	6.4
Andean	Bolivia	9.6	8.8	9.9	9.8	9.5	9.6	9.0	9.9	10.0	10.0	9.9	9.8	9.8	9.9	9.9		9.8	10.0	10.0	10.0	9.8	8.8
	Colombia	13.2	12.0	13.4	15.6	14.3	15.1	10.3	8.8	10.4	17.5	10.2	14.0	16.1	16.7	15.8	7.7		12.9	11.1	11.3	9.8	12.4
	Ecuador	15.0	7.9	13.2	12.6	6.5	5.5	5.7	8.7	35.2	26.4	8.7	12.2	15.3	19.9	20.0	8.0	14.7		14.4	32.9	8.5	7.9
	Peru	12.1	12.5	13.1	12.9	12.1	12.6	12.3	12.1	12.2	12.4	12.9	12.8	12.6	12.2	13.7	12.3	12.6	12.1		12.0	12.4	12.5
	Venezuela	13.3	12.0	12.6	16.1	14.2	15.3	10.6	8.4	10.3	17.6	10.2	13.9	16.1	16.7	15.8	8.4	12.1	12.9	11.1		9.7	12.6
	CARICOM	15.2	13.5	13.3	16.9	16.2	16.9	11.7	10.8	18.4	30.9	11.9	14.9	19.8	27.5	18.8	8.3	11.6	13.3	10.1	14.6		13.9
	European Union	4.8	4.2	4.9	6.7	4.5	5.0	3.1	2.6	2.7	11.0	3.1	3.7	3.2	10.4	5.5	1.5	3.0	4.4	2.5	1.8	4.0	
	Average	**9.8**	**9.2**	**11.7**	**12.3**	**10.6**	**11.0**	**8.8**	**7.3**	**11.0**	**14.1**	**9.4**	**11.3**	**12.7**	**13.1**	**13.8**	**6.7**	**8.6**	**8.3**	**8.5**	**8.7**	**7.5**	**10.2**

(MFN)

Sources: 2001 Hemispheric Database of the Americas and AMAD. IDB-INT calculations.

TABLE B.2B
INDUSTRIAL PREFERENTIAL TARIFFS WEIGHTED BY EXPORT AT HS 6 DIGIT LEVEL (2000)

Imposed/Faced Tariffs		ARG	BRA	PAR	URU	CAN	MEX	USA	CHI	DOM	PAN	CR	GTM	HND	NIC	SLV	BOL	COL	ECU	PER	VEN	Caricom	EU
		Mercosur				NAFTA						CACM					Andean					Caricom	EU
Mercosur	Argentina		1.6	0.0	2.7	15.4	18.3	14.2	9.7	11.1	13.8	13.8	14.8	15.9	12.3	18.2	7.0	8.2	5.7	9.8	4.0	8.6	16.2
	Brazil	0.0		0.0	0.0	17.6	21.3	17.3	9.8	11.7	14.0	21.8	15.6	16.0	12.4	18.1	7.9	11.0	9.6	10.0	8.2	9.7	18.2
	Paraguay	0.0	0.0		0.0	10.8	13.8	11.3	3.1	9.9	13.2	13.6	13.7	15.4	11.7	16.6	2.6	7.2	5.0	9.3	3.0	7.8	12.3
	Uruguay	1.9	1.4	0.0		11.7	14.7	11.5	8.9	10.8	13.6	11.7	14.1	15.3	11.9	17.2	5.5	7.5	5.3	9.3	3.8	8.1	12.9
NAFTA	Canada	3.6	3.7	6.0	6.2		0.7	0.0	0.0	6.7	3.3	3.7	5.0	4.7	3.3	7.8	1.8	3.5	2.0	3.4	2.4	0.9	4.3
	Mexico	16.6	17.1	20.0	19.4	2.7		2.8	14.6	16.5	25.8	10.1	18.9	21.4	12.8	21.5	12.7	7.3	16.7	14.6	4.5	7.6	17.2
	United States	1.4	1.2	1.3	2.2	0.0	0.2		0.9	1.0	0.8	0.6	0.7	0.6	0.2	1.9	0.0	0.0	0.0	0.0	2.2	0.8	3.3
	Chile	9.0	9.0	9.0	9.0	9.0	1.7	9.0		9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	5.7	1.0	5.7	9.0	9.0
	Dominican Republic	15.2	14.9	22.6	21.6	15.7	17.4	12.9	11.0		26.4	12.6	17.9	21.1	24.8	22.2	11.4	12.9	12.7	14.0	11.0	11.0	15.4
	Panama	9.7	9.6	11.9	11.2	9.3	9.3	8.4	10.0	21.7		7.6	8.7	12.7	13.1	12.9	7.3	7.2	6.6	9.8	11.3	5.5	9.4
CACM	Costa Rica	5.4	4.8	8.2	8.1	5.7	0.7	3.5	3.0	6.7	8.6		0.3	0.3	1.7	1.2	3.5	5.2	4.8	4.9	4.7	3.4	4.9
	Guatemala	5.7	5.9	11.2	10.3	7.3	6.7	4.1	3.1	3.6	10.3	0.1		0.0	0.4	0.8	5.3	5.9	4.5	5.8	3.2	4.8	6.0
	Honduras	9.9	6.6	9.9	10.7	10.6	9.2	5.0	4.0	9.3	11.6	6.4	11.9		9.9	13.1	6.4	11.9	14.6	6.6	14.9	7.7	7.5
	Nicaragua	3.7	3.1	5.5	5.4	4.2	3.6	2.3	2.1	4.5	6.9	0.1	0.0	0.0		0.8	3.8	3.4	3.2	3.9	2.9	3.4	3.2
	El Salvador	5.7	5.6	10.6	10.5	7.6	8.5	3.9	3.1	5.6	10.3	6.3	9.6	11.5	9.4		4.1	5.9	5.2	5.9	3.7	4.3	6.4
Andean	Bolivia	9.6	8.8	9.9	9.8	9.5	9.6	9.0	9.9	10.0	10.0	9.9	9.8	9.8	9.9	9.9		9.8	10.0	10.0	10.0	9.8	8.8
	Colombia	13.2	11.7	13.4	15.6	14.3	15.1	10.3	8.8	10.4	17.5	10.2	14.0	16.1	16.7	15.8	7.7		12.9	10.2	11.3	9.8	12.4
	Ecuador	15.0	7.9	13.2	12.6	6.5	5.5	5.7	8.7	35.2	26.4	8.7	12.2	15.3	19.9	20.0	8.0	14.7		14.4	32.9	8.5	7.9
	Peru	10.9	11.1	13.1	12.9	12.1	12.6	12.3	12.1	12.2	12.4	12.9	12.8	12.6	12.2	13.7	12.3	12.6	12.1		12.0	12.4	12.5
	Venezuela	9.9	10.7	12.2	15.6	14.2	15.3	10.6	1.9	10.3	17.6	10.2	13.9	16.1	16.7	15.8	2.6	2.0	0.9	2.5		9.7	12.6
	CARICOM	15.2	13.5	13.3	16.9	16.2	16.9	11.7	10.8	18.4	30.9	11.9	14.9	19.8	27.5	18.8	8.3	11.6	13.3	10.1	14.6		13.9
	European Union	4.8	4.2	4.9	6.7	4.5	1.8	3.1	2.6	0.6	11.0	2.5	3.2	1.9	2.2	5.1	1.5	2.7	1.4	1.9	1.8	2.4	
	Average	**7.9**	**7.3**	**9.3**	**9.9**	**9.8**	**9.7**	**8.0**	**6.6**	**10.7**	**14.0**	**8.7**	**10.5**	**11.2**	**11.3**	**12.4**	**6.1**	**7.6**	**7.2**	**7.5**	**8.0**	**6.9**	**10.2**

Sources: 2001 Hemispheric Database of the Americas and AMAD. IDB-INT calculations.

(Preferential)

TABLE B.3A
OVERALL MFN TARIFFS WEIGHTED BY EXPORT AT HS 6 DIGIT LEVEL (2000)

Imposed/Faced Tariffs		Mercosur				NAFTA			CHI	DOM	PAN	CACM					Andean					Caricom	EU
		ARG	BRA	PAR	URU	CAN	MEX	USA	CHI	DOM	PAN	CR	GTM	HND	NIC	SLV	BOL	COL	ECU	PER	VEN	Caricom	EU
Mercosur	Argentina		14.5	12.4	16.6	15.4	18.2	14.2	10.6	13.4	14.4	13.9	14.9	14.8	14.0	17.1	8.5	9.7	7.9	10.2	4.2	10.3	16.3
	Brazil	13.8		12.2	16.7	17.4	21.0	17.0	10.7	13.5	14.4	19.4	15.0	14.8	13.8	17.0	9.1	11.7	10.8	10.4	8.3	11.2	18.2
	Paraguay	10.8	11.9		14.7	11.0	13.9	11.5	9.9	13.2	14.1	13.7	14.8	14.6	14.0	16.3	8.0	9.0	7.4	9.7	3.2	9.8	12.6
	Uruguay	11.4	12.5	12.2		11.8	14.7	11.7	9.9	13.0	13.9	12.3	14.3	14.5	13.4	16.0	7.4	9.0	7.6	9.8	4.0	9.4	13.1
NAFTA	Canada	13.8	10.3	5.1	25.9		5.4	6.1	6.2	15.8	10.0	8.6	10.2	4.0	17.8	21.1	7.1	6.0	3.5	4.3	2.7	10.3	8.2
	Mexico	28.7	24.9	24.0	27.8	17.8		17.8	17.4	31.2	28.7	17.4	29.8	23.6	32.9	31.1	15.7	20.8	20.5	15.8	14.7	19.4	18.9
	United States	9.4	11.1	8.5	14.6	3.6	4.5		2.8	13.6	6.2	5.6	11.6	5.2	17.5	8.2	3.9	4.7	3.8	4.4	2.8	5.1	4.9
	Chile	9.0	9.0	9.0	9.0	9.0	9.0	9.0		9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Dominican Republic	14.8	15.0	12.2	22.1	16.0	17.7	13.3	13.6		24.7	15.7	18.6	19.2	20.4	21.1	11.2	14.7	16.1	14.8	11.1	13.3	15.9
	Panama	11.1	15.9	14.0	26.4	9.9	9.7	9.7	10.6	30.2		10.9	22.3	15.2	24.2	18.2	8.7	11.2	9.3	10.7	11.4	11.7	10.4
CACM	Costa Rica	7.4	8.3	5.8	15.4	6.2	6.8	4.6	4.9	12.3	13.1		14.0	12.8	17.1	13.3	5.0	7.8	7.4	5.8	4.8	6.5	6.0
	Guatemala	7.8	7.6	6.4	23.5	7.7	9.4	5.0	5.4	10.8	12.6	8.8		13.3	13.3	14.2	6.0	7.9	7.5	6.6	3.4	8.5	6.8
	Honduras	9.6	8.7	7.2	15.9	10.7	11.1	5.8	6.0	13.4	14.2	9.9	16.2		14.7	15.6	6.7	13.3	15.3	7.6	15.0	10.1	8.0
	Nicaragua	5.8	6.6	4.7	10.4	4.4	4.4	3.2	3.3	9.8	9.6	5.2	10.8	8.9		9.4	4.6	5.5	5.2	4.5	3.0	5.9	3.7
	El Salvador	6.8	7.3	6.2	14.8	7.9	8.9	4.6	5.0	10.9	13.0	9.0	14.1	13.5	14.4		5.0	8.2	7.8	6.7	3.8	7.3	7.1
Andean	Bolivia	9.7	9.1	10.0	9.9	9.5	9.6	9.0	9.9	10.0	9.9	10.0	9.9	9.9	10.0	9.9		9.8	10.0	10.0	10.0	9.9	8.9
	Colombia	14.6	13.0	14.8	16.9	14.4	15.1	10.8	10.0	12.8	16.7	11.6	13.9	14.1	15.1	15.1	10.2		13.3	11.4	11.4	11.1	12.7
	Ecuador	15.4	9.8	13.8	15.2	7.0	6.0	6.5	9.9	28.3	21.7	10.5	13.1	13.7	16.0	17.5	10.4	14.3		14.3	32.7	10.0	8.5
	Peru	14.3	13.8	14.1	17.8	12.6	12.9	12.7	13.5	14.1	15.8	15.5	16.3	16.8	17.2	15.9	12.8	13.9	14.8		12.1	13.3	12.9
	Venezuela	14.7	13.1	14.6	17.2	14.4	15.3	11.0	9.7	12.8	16.7	11.6	13.9	14.1	15.1	15.1	10.7	12.3	13.5	11.4		11.1	12.9
	CARICOM	16.1	15.9	13.7	19.7	16.4	17.9	12.6	13.9	23.5	32.5	19.4	24.1	27.9	28.1	23.8	11.9	16.4	19.2	11.9	14.7		14.7
	European Union	11.0	8.0	13.6	36.7	6.0	5.7	5.2	4.8	15.0	38.5	18.9	17.8	13.5	25.0	9.5	3.1	9.2	26.5	3.3	2.1	10.3	
	Average	12.2	11.7	11.2	18.4	10.9	11.3	9.6	9.0	15.6	16.7	12.2	15.5	14.0	17.3	15.9	8.3	10.7	11.3	9.2	8.8	10.2	10.9

(Row-group label along left margin: MFN)

Sources: 2001 Hemispheric Database of the Americas and AMAD. IDB-INT calculations.

TABLE B.3B
OVERALL PREFERENTIAL TARIFFS WEIGHTED BY EXPORT AT HS 6 DIGIT LEVEL (2000)

	Imposed/Faced Tariffs	Mercosur				NAFTA						CACM					Andean					Caricom	EU
		ARG	BRA	PAR	URU	CAN	MEX	USA	CHI	DOM	PAN	CR	GTM	HND	NIC	SLV	BOL	COL	ECU	PER	VEN	Caricom	EU
Preferential	**Mercosur**																						
	Argentina		1.7	0.2	1.5	15.4	18.2	14.2	10.6	13.4	14.4	13.9	14.9	14.8	14.0	17.1	8.5	9.7	7.9	10.2	4.2	10.3	16.3
	Brazil	0.0		0.0	0.0	17.4	21.0	17.0	10.7	13.5	14.4	19.4	15.0	14.8	13.8	17.0	9.1	11.7	10.8	10.4	8.3	11.2	1.1
	Paraguay	0.0	0.0		0.0	11.0	13.9	11.5	3.9	13.2	14.1	13.7	14.8	14.6	14.0	16.3	2.8	9.0	7.4	9.7	3.2	9.8	12.6
	Uruguay	1.1	1.3	0.0		11.8	14.7	11.7	9.9	13.0	13.9	12.3	14.3	14.5	13.4	16.0	7.4	9.0	7.6	9.8	4.0	9.4	13.1
	NAFTA																						
	Canada	13.8	10.3	5.1	25.9		1.1	2.1	2.9	15.8	10.0	8.6	10.2	4.0	17.8	21.1	7.1	6.0	3.5	4.3	2.7	4.8	8.2
	Mexico	28.7	24.9	24.0	27.8	3.0		4.8	17.1	31.2	28.7	13.4	29.8	23.6	20.2	31.1	14.1	10.0	20.5	15.8	4.7	9.4	18.9
	United States	8.1	9.3	7.3	12.0	0.5	0.5		2.1	10.8	3.6	2.7	9.1	3.1	16.4	5.8	1.4	1.3	0.5	0.3	2.5	2.8	4.9
	Chile	9.0	9.0	9.0	9.0	9.0	1.7	9.0		9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	4.2	1.0	5.6	9.0	9.0
	Dominican Republic	14.8	15.0	12.2	22.1	16.0	17.7	13.3	13.6		24.7	15.7	18.6	19.2	20.4	21.1	11.2	14.7	16.1	14.8	11.1	13.3	15.9
	Panama	11.1	15.9	14.0	26.4	9.9	9.7	9.7	10.6	30.2		10.9	22.3	15.2	24.2	18.2	8.7	11.2	9.3	10.7	11.4	11.7	10.4
	CACM																						
	Costa Rica	7.4	8.3	5.8	15.4	6.2	1.0	4.6	4.9	12.3	10.2		6.7	5.2	7.3	5.4	5.0	7.8	7.4	5.8	4.8	6.5	6.0
	Guatemala	7.8	7.6	6.4	23.5	7.7	7.0	5.0	5.4	6.5	12.6	0.8		5.2	4.3	3.8	6.0	7.9	7.5	6.6	3.4	8.5	6.8
	Honduras	9.6	8.7	7.2	15.9	10.7	9.4	5.8	6.0	13.4	14.2	9.9	16.2		14.7	15.6	6.7	13.3	15.3	7.6	15.0	10.1	8.0
	Nicaragua	5.8	6.6	4.7	10.4	4.4	3.8	3.2	3.3	9.8	8.2	0.9	6.1	3.7		4.4	4.6	5.5	5.2	4.5	3.0	5.9	3.7
	El Salvador	6.8	7.3	6.2	14.8	7.9	8.9	4.6	5.0	10.9	13.0	9.0	14.1	13.5	14.4		5.0	8.2	7.8	6.7	3.8	7.3	7.1
	Andean																						
	Bolivia	9.7	9.1	10.0	9.9	9.5	9.6	9.0	9.9	10.0	9.9	10.0	9.9	9.9	10.0	9.9		9.8	10.0	10.0	10.0	9.9	8.9
	Colombia	14.6	12.4	14.8	16.9	14.4	15.1	10.8	9.9	12.8	16.7	11.5	13.9	14.1	15.1	14.8	10.2		13.3	10.5	11.4	11.1	12.7
	Ecuador	15.4	9.8	13.8	15.2	7.0	6.0	6.5	9.9	28.3	21.7	10.5	13.1	13.7	16.0	17.5	10.4	14.3		14.3	32.7	10.0	8.5
	Peru	12.6	12.6	14.1	17.8	12.6	12.9	12.7	13.5	14.1	15.8	15.5	16.3	16.8	17.2	15.9	12.8	13.9	14.8		12.1	13.3	12.9
	Venezuela	11.2	11.4	10.6	16.7	14.4	15.3	11.0	2.0	12.8	16.7	11.6	13.9	14.1	15.1	15.1	2.6	2.9	3.8	2.4		11.1	12.9
	CARICOM	16.1	15.9	13.7	19.7	16.4	17.9	12.6	13.9	23.5	32.5	19.4	24.1	27.9	28.1	23.8	11.9	16.4	19.2	11.9	14.7		14.7
	European Union	11.0	8.0	13.6	36.7	6.0	2.6	5.2	4.8	10.9	38.5	17.9	16.7	11.7	21.7	8.8	2.5	8.3	23.8	2.3	2.0	7.5	
	Average	**10.2**	**9.8**	**9.2**	**16.1**	**10.1**	**9.9**	**8.8**	**8.1**	**15.0**	**16.3**	**11.3**	**14.7**	**12.8**	**15.6**	**14.7**	**7.5**	**9.5**	**10.3**	**8.1**	**8.1**	**9.2**	**10.1**

Sources: 2001 Hemispheric Database of the Americas and AMAD. IDB-INT calculations.

APPENDIX C
THE REGIONAL EXPORT SENSITIVE TARIFF INDEX (REST)

TABLE C.1A
THE MFN REST INDEX FOR WH COUNTRIES AT HS 6 DIGIT LEVEL (2000)

MFN	Imposed			Faced			Rest		
	All	Ind	Agr	All	Ind	Agr	All	Ind	Agr
Argentina	12.2	11.7	14.6	10.6	5.2	18.1	0.9	0.4	1.2
Brazil	16.1	16.2	14.4	11.7	5.4	32.0	0.7	0.3	2.2
Paraguay	9.9	9.3	14.1	8.9	6.4	9.6	0.9	0.7	0.7
Uruguay	11.7	11.3	14.4	16.0	9.7	24.2	1.4	0.9	1.7
Canada	8.2	3.3	27.7	13.8	13.7	14.7	1.7	4.2	0.5
Mexico	23.8	17.1	38.8	15.6	15.6	15.7	0.7	0.9	0.4
US	7.9	3.1	22.6	11.3	10.9	15.5	1.4	3.6	0.7
Chile	9.0	9.0	9.0	8.2	6.8	15.2	0.9	0.8	1.7
Dom Rep	13.4	13.0	18.1	14.9	5.7	30.0	1.1	0.4	1.7
Panama	11.7	9.1	24.2	12.0	10.2	14.6	1.0	1.1	0.6
Costa Rica	5.1	3.9	17.0	8.1	5.6	13.7	1.6	1.4	0.8
Guatemala	5.5	4.5	15.7	15.3	8.0	20.7	2.8	1.8	1.3
Honduras	6.0	5.2	15.1	7.2	4.3	9.5	1.2	0.8	0.6
Nicaragua	3.5	2.6	13.0	19.2	9.4	24.4	5.5	3.6	1.9
El Salvador	5.0	4.2	12.5	11.9	8.7	16.3	2.4	2.1	1.3
Bolivia	9.3	9.1	10.0	7.8	6.5	11.0	0.8	0.7	1.1
Colombia	11.3	10.8	16.1	7.3	5.5	13.6	0.7	0.5	0.8
Ecuador	8.6	8.3	15.4	6.3	5.1	9.4	0.7	0.6	0.6
Peru	13.0	12.3	18.3	6.8	6.3	11.6	0.5	0.5	0.6
Venezuela	11.4	10.9	16.0	4.4	4.1	29.9	0.4	0.4	1.9
CARICOM	14.0	12.8	23.7	7.2	4.3	21.4	0.5	0.3	0.9

Sources: 2001 Hemispheric Database of the Americas and AMAD. IDB-INT calculations.

TABLE C1.B
THE PREFERENTIAL REST INDEX FOR WH COUNTRIES AT HS 6 DIGIT LEVEL (2000)

Preferential	Imposed			Faced			F/I		
	All	Ind	Agr	All	Ind	Agr	All	Ind	Agr
Argentina	6.5	6.3	7.6	4.5	1.7	8.3	0.7	0.3	1.1
Brazil	11.5	11.6	10.3	7.7	3.0	22.6	0.7	0.3	2.2
Paraguay	1.1	1.0	1.8	2.0	0.7	2.5	1.8	0.6	1.4
Uruguay	4.4	4.6	4.8	4.9	3.3	6.9	1.1	0.7	1.5
Canada	2.1	0.0	25.5	0.9	0.4	7.5	0.4	13.3	0.3
Mexico	5.2	3.2	26.3	1.0	0.6	7.9	0.2	0.2	0.3
US	1.4	0.2	9.6	4.5	2.7	24.2	3.2	11.7	2.5
Chile	7.5	7.5	7.2	7.5	6.3	13.8	1.0	0.8	1.9
Dom Rep	13.4	13.0	18.1	12.8	4.1	27.2	1.0	0.3	1.5
Panama	11.7	9.1	24.2	10.5	9.3	12.3	0.9	1.0	0.5
Costa Rica	5.0	3.2	15.7	5.7	3.8	10.1	1.2	1.2	0.6
Guatemala	5.0	3.7	13.2	13.4	6.4	18.6	2.7	1.7	1.4
Honduras	6.7	5.6	15.4	5.5	3.1	7.5	0.8	0.5	0.5
Nicaragua	3.4	2.3	12.1	13.7	5.7	18.0	4.0	2.5	1.5
El Salvador	7.2	5.7	13.6	9.2	5.3	14.5	1.3	0.9	1.1
Bolivia	9.5	9.4	10.0	7.7	6.6	10.5	0.8	0.7	1.1
Colombia	11.3	10.9	16.1	4.7	3.5	8.9	0.4	0.3	0.6
Ecuador	10.0	9.7	15.2	6.2	5.3	8.6	0.6	0.5	0.6
Peru	13.0	12.2	18.2	4.2	3.9	7.4	0.3	0.3	0.4
Venezuela	10.6	10.1	14.9	4.8	4.5	26.4	0.5	0.4	1.8
CARICOM	14.0	12.8	23.7	5.1	3.1	15.0	0.4	0.2	0.6

Sources: 2001 Hemispheric Database of the Americas and AMAD. IDB-INT calculations.

General Methodology: the objective of the study was to compile all trade-related data available for agricultural products country by country, using the *2001 Hemispheric Database of the Americas.* A database was created containing both 6- and 8-digit (or more) Harmonized System tariff lines for 30 of the 34 FTAA member countries (excluding Belize, Suriname, Guyana and Haiti, due to lack of trade-related data). It includes product descriptions, MFN *ad valorem* tariffs, MFN specific and mixed tariffs, preferential rates, and *ad valorem* equivalents for such tariffs, imports value and volume, imports price, exports value, export volume, and an indication of whether the tariff is a TRQ. In addition, the data was also analyzed in an aggregate basis by being grouped in 32 groups of products upon the International Bilateral Agricultural Trade (IBAT) Database. Once all tariffs were expressed in terms of *ad valorem* equivalents (AVE), we were able to calculate the number of tariff lines and TRQs, mean, median, tariff dispersion, maximum and minimum tariffs, and frequency distributions.

Tariff conversions: the first step in developing tariff profiles was the conversion of all specific and mixed tariffs into AVE. Specific tariffs are tariffs that are set as a monetary amount per unit of import, i.e. a product can have a specific tariff, which charges US$ 1.50 per kilogram. Countries may also combine *ad valorem* and specific tariffs so that a product's tariff may be the sum of the *ad valorem* tariff plus the specific tariff, called mixed or compound tariffs. According to the WTO, AVE are usually calculated "either by comparing collected custom revenues to the value of imports or by comparing unit values of traded products with the applied non-*ad valorem* tariff". The methodology followed in this study to obtain *ad valorem* equivalents was to divide the product's specific rate by its import price. In this case the price was calculated by dividing the value of imports by the quantity of imports. Where no trade data was available, the price of the closest related product was used.

Tariff Rate Quotas: as a result of the "tariffication" effort of the URAA, many products that used to be protected with import quotas are now protected through TRQs. In this case, lower "within access commitment" rates are set for specified quantities, and higher "over access commitment" rates are set for quantities that exceed the quota. The in-quota tariff would be the tariff rate up to the quota limit, and the over-quota tariff is the higher duty rate.

Hirschmann-Herfindahl Index (HHI): The HHI is equal to the sum of the squared shares of all individual products exported, where i stands for a particular product and n is the total number of products. When a single export product (tariff line) produces all the revenues HHI equals 100; when export revenues are evenly distributed over a large number of products, HHI approaches zero.

$$HHI = \sum_{i}^{n} \left(\frac{x_i}{\sum_{i}^{n} x_i} \right)^2 * 100$$

"Relative Tariff Ratio" Index: the RTR index was originally developed by Sandrey [2000], and further developed by Wainio and Gibson [2002] and Gehlhar and Wainio [2002]. It assumes, in first instance, that only the bilateral partners exist in the world, placing great emphasis on tariffs from an importing country that are of the greatest importance to the exporting partner. So, the index is always calculated in a bilateral basis, using country (A)' *total exports* as weights in the calculation of a weighted average tariff of country (B), and vice-versa. For example, if the tariff line *"boneless frozen meat of bovine animal"* represents 23% of Uruguay's exports, it will weight 23% on Uruguay's "faced" tariffs from each FTAA country. The RTR is the ratio between country (A)'s *faced* tariffs in the numerator and *imposed* tariffs in the denominator, relative to country (B), or:

$$RTR_{AB} = \frac{\sum\limits_{i}^{n}\left(X_i^B \cdot Y_i^A\right)}{\sum\limits_{i}^{n}\left(X_i^A \cdot Y_i^B\right)}$$

where: A, B = Countries A e B

X_i = *ad valorem* equivalent (AVE) tariff rate for product i;

Y_i = share of exports of product i in total exports.

In general, a ratio close to one reflects the fact that both countries have similar protection, and thus face/impose comparable tariff barriers. However, this does not reflect the absolute levels of tariffs, but their relative ratios.

"Regional Export Sensitive Tariff" Index: the REST Index measures each country's *faced* tariffs from its partners weighted by its *total exports* in the numerator and each country's *imposed* tariffs weighted by the *total exports* of all its partners in the denominator, calculated one by one, considering a potential RIA. Each combination of tariffs and share of export ratios for one country is weighted by the relative importance of total exports to the region in the case of *faced* tariffs and total imports in the case of *imposed* tariffs. Preexisting RTAs need to be considered using preferential tariffs or assuming zero tariffs in the case of a future free trade area.

The notation of the REST index is:

$$REST_A = \frac{\sum\limits_{R \neq A}^{N}\left\{\left(X_R^A / X_T^A\right)\sum\limits_{i=1}^{n} x_i^R \cdot y_i^A\right\}}{\sum\limits_{R \neq A}^{N}\left\{\left(M_R^A / M_T^A\right)\sum\limits_{i=1}^{n} x_i^A \cdot y_i^R\right\}}$$

where: $A, B, C, \ldots, N$ = member countries of an RTA and R is any country;

x_i^A = maximum *ad-valorem* equivalent tariff rate at HS-96 level for tariff line i in country A;

y_i^A = share of exports of i in total exports, M_R^A = country A's total imports from country R;

M_T^A = country A's total imports from all RTA countries;

X_R^A = country A's total exports to country R;

X_T^A = country A's total exports to all RTA countries.

And

$$y_i^B = \frac{x_w^i}{\sum_{i=1}^{n} x_w^i}$$

were: x_w^i = country's total exports of tariff line i to the world

Green box: Measures of domestic support placed into the green box are not, or minimally, trade distorting. They are exempt from reduction commitments.

S&D box: This box includes developmental programs in developing countries. They are exempt from reduction commitments.

Blue box: It covers direct payments made under production-limiting programs. They are exempt from reduction commitments.

Amber box: Trade and production distorting measures not included in the boxes mentioned previously fall into the amber box. The level of support is measured through an indicator called "Aggregate Measurement of Support" (AMS). AMS is subject to reduction commitments. However, amber box subsidies affecting less than 5% of the value of production (10% for developing countries) are exempt of commitments, due to a mechanism called *"de minimis"* level.

Export subsidies: Existing subsidies are subject to reduction commitments both in terms of volume and value of exports. New subsidies are banned. The commitments do not include export credit guarantees and food aid disciplines.

Producer Support Estimate (PSE): PSE is the basic estimate of agricultural protection and support calculated by OECD since the mid 80s. It is an indicator of the annual monetary value of gross transfers from consumers and taxpayers to support agricultural producers, measured at the farm gate level, arising from policy measures. PSE has two components: market price support (MPS) and budgetary outlays.

AC	Andean Community
ACP	Africa, Caribbean and Pacific countries (71 members)
AMAD	Agricultural Market Access Database
AMS	Aggregate Measurement of Support
ASCM	Agreement on Subsidies and Countervailing Measures
AVE	*Ad-Valorem* Equivalent
CACM	Central American Common Market
CAP	Common Agricultural Policy
CARICOM	Caribbean Community
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FAPRI	Food and Agricultural Policy Research Institute
FTA	Free Trade Agreement
FTAA	Free Trade Area of the Americas
GATT	General Agreement on Tariffs and Trade
GMO	Genetically Modified Organisms
GSP	Generalized System of Preferences
HDA	Hemispheric Database of the Americas
HHI	Hirschmann-Herfindahl Index
HS	Harmonized System
IBAT	International Bilateral Agricultural Trade Database
IDB	Inter-American Development Bank
LAC	Latin America and the Caribbean
MERCOSUR	Common Market of the Southern Cone

MFN	Most-Favored-Nation status
MPS	Market Price Support
NAFTA	North American Free Trade Agreement
NTB	Non Tariff Barrier
NTC	Non Trade Concerns
NTM	Non Tariff Measure
OECD	Organization for Economic Co-operation and Development
PSE	Producer Support Estimate of OECD
PTA	Preferential Trade Agreement
REST	Regional Export Sensitive Tariff Index
RIA	Regional Integration Agreement
RTA	Regional Trade Agreement
RTR	Relative Tariff Ratio Index
SPS	Agreement on Sanitary and Phytosanitary Measures
TBT	Agreement on Technical Barriers to Trade
TRQ	Tariff Rate Quota
URAA	Uruguay Round Agreement on Agriculture
USDA	United States Department of Agriculture
WH	Western Hemisphere
WTO	World Trade Organization

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