

No. 2096

**DEVELOPING COUNTRY AGRICULTURE  
AND THE NEW TRADE AGENDA**

Bernard Hoekman and Kym Anderson

*INTERNATIONAL TRADE*



**Centre for Economic Policy Research**

# DEVELOPING COUNTRY AGRICULTURE AND THE NEW TRADE AGENDA

**Bernard Hoekman and Kym Anderson**

Discussion Paper No.2096  
March 1999

Centre for Economic Policy Research  
90–98 Goswell Rd, London EC1V 7RR, UK  
Tel: (44 20) 7878 2900, Fax: (44 20) 7878 2999  
Email: [cepr@cepr.org](mailto:cepr@cepr.org), Website: <http://www.cepr.org>

This Discussion Paper is issued under the auspices of the Centre's research programme in **International Trade**. Any opinions expressed here are those of the author(s) and not those of the Centre for Economic Policy Research. Research disseminated by CEPR may include views on policy, but the Centre itself takes no institutional policy positions.

The Centre for Economic Policy Research was established in 1983 as a private educational charity, to promote independent analysis and public discussion of open economies and the relations among them. It is pluralist and non-partisan, bringing economic research to bear on the analysis of medium- and long-run policy questions. Institutional (core) finance for the Centre has been provided through major grants from the Economic and Social Research Council, under which an ESRC Resource Centre operates within CEPR; the Esmée Fairbairn Charitable Trust; and the Bank of England. These organizations do not give prior review to the Centre's publications, nor do they necessarily endorse the views expressed therein.

These Discussion Papers often represent preliminary or incomplete work, circulated to encourage discussion and comment. Citation and use of such a paper should take account of its provisional character.

Copyright: Bernard Hoekman and Kym Anderson

March 1999

## ABSTRACT

### Developing Country Agriculture and the New Trade Agenda\*

A new round of WTO negotiations on agriculture, services and perhaps some other issues is expected to be launched in late 1999. To what extent should those negotiations include so-called "new trade agenda" items aimed at ensuring that domestic regulatory policies do not discriminate against foreign suppliers? We argue in this paper that while market access negotiations should be given priority, as the potential welfare gains from liberalizing access to agricultural (and services) markets is still huge, the new issues should be included too. This is because they would increase the role of market disciplines in the allocation of resources in the agricultural sector itself, and would ensure non-agricultural groups with interests in the new issues take part in the round to counter-balance forces favoring agricultural protection. We also argue, however, that rule-making efforts to accommodate the new issues should be de-linked from the agricultural market access negotiations, because the issues affect all sectors of activity.

JEL Classification: F13, K33, Q17, Q18

Keywords: WTO, trade negotiations, economic development, agricultural policy

Bernard Hoekman  
World Bank  
1818 H Street NW  
Washington DC 20433  
USA  
Tel: (1 202) 473 1185  
Fax: (1 202) 676 9810  
Email: bhoekman@worldbank.org

Kym Anderson  
Centre for International Economic  
Studies  
University of Adelaide  
Adelaide SA 5005  
AUSTRALIA  
Tel: (61 8) 8303 4712  
Fax: (61 8) 8223 1460  
Email: kanderson@economics.  
adelaide.edu.au

\*Presented at the American Economic Association Annual Meeting, New York, 3–5 January 1999. The views expressed are those of the authors alone and not necessarily those of their current or former employers. Thanks are due to Anna Strutt of the University of Adelaide (on leave from University of Waikato) for doing the painstaking work required to produce the estimates in Table 1,

and to Crawford Falconer, Merlinda Ingco, Will Martin, Dan Sumner and Alberto Valdes for helpful comments, suggestions and discussions.

Submitted 22 February 1999

## **NON-TECHNICAL SUMMARY**

The conclusion of an agreement on agriculture in the Uruguay Round laid the foundations for reversing the growth in agricultural protection in Organization for Economic Cooperation and Development (OECD) countries and thereby reducing the international price-depressing effects of those policies. A new round of World Trade Organization (WTO) negotiations on agriculture, services and perhaps some other issues is expected to be launched in late 1999. A key question for policy-makers in developing countries is to determine their negotiating strategy. Agricultural protection and intervention in high-income countries remains very high relative to the barriers that are imposed on trade in manufactures. Conversely, farmers and rural communities that depend on agricultural production in developing countries often remain subject to much higher effective taxation and production disincentives than manufacturers. Given that farmers comprise the vast majority of the world's poor, it is important that the most be made of the opportunity offered by the WTO's built-in negotiating agenda to pursue multilaterally agreed reforms that will benefit this group as much as possible.

In addition to determining how best to proceed in further liberalization of agriculture and service markets, WTO members are confronted with the question whether and to what extent the coming negotiations should extend beyond agriculture and services. There are two major areas here that are likely to be considered. The first are barriers against trade in manufactures. The second are so-called 'new trade agenda' items where the goal is to ensure that domestic regulatory policies relating to product standards, environmental regulations, competition laws, or the investment regime do not unnecessarily impede the ability of foreign suppliers to contest a market. As traditional trade barriers have declined in importance, attention is focusing increasingly on the trade-impeding effects of such domestic regulatory regimes, as they can effectively distort competition, even if applied on a non-discriminatory basis.

We argue in this paper that negotiations on market access in developing as well as OECD countries should be given priority over the 'new trade agenda' and that the market access negotiations should extend beyond agriculture and services and include manufacturing. The welfare gains to poor-country farmers from further liberalizing agricultural markets in rich countries are still huge. To fully benefit from such liberalization, however, it is important that protection rates for manufacturing and service sectors in the developing countries themselves are reduced significantly. If this is not done, the anti-agriculture bias that exists in many developing countries will continue to exist.

The agenda for negotiations on agricultural trade liberalization is conceptually straightforward and centres on further reduction of intervention. The simplest approach would be to continue on the path established during the Uruguay Round and seek significant cuts in bound tariffs and export subsidies and substantial increases in tariff rate quotas. This can be achieved through agreement to apply across-the-board formulas to agricultural tariff bindings and export subsidies, as was done to reduce tariffs on manufactures in the Kennedy and Tokyo rounds. Getting there will require substantial efforts to mobilize interest groups and civil society to push for significant cuts in agricultural protection in high-income countries. Expanding the negotiating agenda to include new issues can help to achieve this.

Although a broadly defined market access agenda deserves priority, from an agricultural sector viewpoint the issues that are on the new trade agenda are also important and should not be excluded from the next WTO round. These 'new' policy issues virtually all have relevance to the agricultural liberalization agenda, but the Uruguay Round negotiations on agriculture focused only on some of them, notably production subsidies and product standards. The policy areas involved can have a major effect in increasing the role of market disciplines in the allocation of resources in the agricultural sector itself. Much of the new trade agenda revolves around *domestic* policies, where the burden of taking action rests on the shoulders of national governments. Multilateral disciplines have the potential benefit of assisting governments to adopt domestic policies and regulatory regimes that are supportive of economic growth and development. Moreover, accepting to discuss these various policy areas would ensure that non-agricultural groups with interests in the new issues take part in the round to counter-balance forces favouring agricultural protection.

The 'new trade agenda' issues are cross-sectoral, not agriculture-specific. If efforts are pursued to negotiate disciplines in these areas – something we believe is in the interest of developing countries as it may assist in the adoption of better domestic policies and generate negotiating leverage – a 'horizontal' approach is to be preferred. We therefore suggest that rule-making efforts be de-linked from the agricultural market access negotiations. Virtually all of the new trade issues that may be put on the table are quite general in that they affect all sectors of activity. Rules should apply across the board with those for agriculture being consistent with (ideally the same as) those currently or prospectively applying to non-farm products/sectors.

## **DEVELOPING COUNTRY AGRICULTURE AND THE NEW TRADE AGENDA**

**Bernard Hoekman** (World Bank) and **Kym Anderson** (University of Adelaide)

In the mid 1980s the World Bank organized a large study of the Political Economy of Agricultural Pricing Policy in eighteen developing countries with the aim of measuring the extent of distortions to agricultural incentives and the reasons behind them. The project's first paper was published a little over a decade ago (Krueger, Schiff and Valdes 1988), just as the Uruguay Round was getting under way, and the synthesis volumes came out about four years later (Krueger 1992; Schiff and Valdes 1992; Tyers and Anderson 1992). This research effort was crucial in publicizing several facts: that policies in developing countries tend to discourage farm production; that agriculture in those countries is discouraged less by agricultural policies than by non-agricultural policies (manufacturing protectionism, overvalued exchange rates); that within their farm sector, exporters tend to be discouraged more than those competing with imports; and that when policy failures are acknowledged, governments often add further layers of policy complexity rather than dismantle existing policies.

A longer-term perspective over a wide range of countries reveals a history not only of poor agrarian economies taxing agriculture relative to other tradable sectors but, as nations industrialize, of their policy regimes gradually changing from negatively to positively assisting farmers relative to other producers (Lindert 1991, Anderson 1995). The post-1950 period saw substantial growth in agricultural protection and insulation in the advanced industrial economies and its spread to newly industrializing economies (Johnson 1973; Anderson and Hayami 1986). That tendency accelerated in the 1980s to the point where some protectionist countries went beyond self-sufficiency to generate surpluses that could be disposed of only with the help of export subsidies. This led to serious budgetary pressures and increasing opposition to the cost of agricultural support policies. It also led traditional agricultural-exporting countries to insist that multilateral trade negotiations focus on reducing agricultural protection. Since the Krueger-Schiff-Valdes study, unilateral trade liberalization in Africa, Asia, and Latin America has reduced domestic distortions. Reform efforts in high income countries—e.g., attempts to shift

from production to income support—and the conclusion of an agreement on agriculture in the Uruguay Round have laid the foundations for reducing international price-depressing assistance to industrial-country farmers.

WTO negotiations on a variety of issues, including agriculture, are to re-commence at the turn of the century. A question confronting WTO members is to what extent those negotiations should include so-called “new trade agenda” items: those aimed at ensuring that domestic regulatory policies relating to product standards, environmental regulations, competition laws, or the investment regime do not discriminate against foreign suppliers. We argue in this paper that, from an agricultural sector viewpoint, these issues should not be excluded from the next WTO round. This is because they would increase the role of market disciplines in the allocation of resources in the agricultural sector itself, and would ensure non-agricultural groups with interests in the new issues take part in the round to counter-balance forces favoring agricultural protection. Certainly market access negotiations should be given priority, as the potential welfare gains from liberalizing access to agricultural (and services) markets is still huge (Anderson, Hoekman and Strutt 1999). However, in so far as new trade agenda items are to be addressed in the next round, we suggest those rule-making efforts be de-linked from the agricultural market access negotiations. Virtually all of the new trade issues that may be put on the table are quite general in that they affect all sectors of activity. Rules should therefore apply across the board with those for agriculture being consistent with (ideally the same as) those currently or prospectively applying to non-farm products/sectors.<sup>1</sup>

The paper starts with a brief overview of what was achieved in the Uruguay Round to reduce agricultural policy distortions (Section 1). This is followed by a discussion of the importance of the new trade agenda in this sector (Section 2) and the potential benefits of negotiating rules on new trade issues as compared to further market access liberalization (Section 3). We then discuss possible negotiation modalities for both the market access and the multilateral rule-setting agenda (Section 4) and summarize our conclusions (Section 5).

---

<sup>1</sup> For a contrasting view, see Josling (1998b). He suggests incorporating all the new issues as they apply to agriculture under the three headings used in the Uruguay Round Agreement on Agriculture, viz. import market access, export subsidies, and domestic support. While such an approach may be necessary if the next round is confined to just agriculture and services, or may be more expedient, it simply prolongs the day when agriculture is fully integrated with other sectors in the WTO. While that separation remains, WTO rules are less clear and exceptional (i.e., less liberalizing) treatment is encouraged.

## 1. The Uruguay Round and agriculture: what was achieved?

The Uruguay Round's Agreement on Agriculture has three main components: reductions in farm export subsidies, increases in import market access, and cuts in domestic producer subsidies. By the year 2000 farm export subsidies must be at least one fifth lower than they were in the late 1980s to comply with the agreement.<sup>2</sup> All nontariff import barriers are required to have been converted to bound tariffs. The *unweighted* average tariff binding must be cut by 36 per cent (24 per cent for developing countries), although in practice it could be less than one sixth as a *weighted* average, since each tariff item need be reduced by only 15 per cent of the claimed 1986-88 tariff equivalents (10 per cent for developing countries). The initial tariff bindings are in many cases far higher than the actual tariff equivalents in 1986-88. The EU, for example, has set them on average at about 60 per cent above the actual tariff equivalents of the CAP in recent years, while the United States has set theirs about 45 per cent above recent rates (Ingco 1995).

Many developing countries chose to bind their tariffs on agricultural imports at more than 50 per cent and some as high as 150 per cent—far above the tariff equivalents of restrictions actually in place in the 1980s/early 1990s (Ingco 1996). This 'dirty' tariffification implies that actual tariffs may provide no less protection by the turn of the century than did the non-tariff import barriers of the late 1980s/early 1990s. In the case of the EU the final bindings for the year 2000 are almost two-thirds above the actual tariff equivalent for 1989-93, and for the United States they are more than three-quarters higher (Ingco 1995). Binding tariffs at such high levels allows countries to set the actual tariff below the ceiling but to vary it so as to stabilize the domestic market, analogous to the earlier EU system of variable import levies and export subsidies. A result is that there will be much less reduction in fluctuations in international food markets than tariffification was expected to deliver (Goldin and Mennsbrugge 1996).

Some countries agreed to provide a minimum market access opportunity, such that the share of imports in domestic consumption for products subject to import restrictions rises to at least 5 per cent by the year 2000 under a tariff quota (8 per cent in the case of rice in Japan in lieu of tariffification; less in the case of developing countries). This access is subject to special

---

<sup>2</sup> The budgetary expenditure on export subsidies is to be lowered by 36 per cent from the base period, but for some commodities it may be only the agreed 21 per cent cut in the *volume* of subsidized exports that bites because

safeguard provisions, and there is scope to minimize the impact of those imports on the domestic market: Japan's required rice imports could be of low feed quality and/or could be re-exported as food aid, for example. Furthermore, the market access rules formally introduce scope for discriminating in the allocation of tariff-rate import quotas between countries. The administration of such quotas tends to legitimize a role for state trading agencies. When such agencies have selling rights on the domestic market in addition to a monopoly on imports of farm products, they can charge excessive mark-ups and thereby distort domestic prices easily and relatively covertly—just as such agencies can hide export subsidies if they are given that monopoly. Elements of quantitative management of both export and import trade in farm products are therefore now legitimized under the WTO, including scope for discriminatory distortions to trade volumes as well as prices.

The third main component of the agriculture agreement is that the aggregate level of domestic support (AMS) for industrial-country farmers is to be reduced to four-fifths of its 1986-88 level by the turn of the century. A “peace clause” was also negotiated regarding the use of countervailing duties: countries agreed to refrain from new actions for a six year period. Many forms of support need not be included in the calculation of the AMS, most importantly direct payments under production-limiting programs, which are classified as “blue box” exemptions. Other measures that allegedly do not affect production and can be justified by environmental or public good rationales are classified as “green box” exemptions.

Recent estimates of producer subsidy equivalents (PSEs) show that the rate of assistance to farmers in advanced industrial countries has fallen on average by more than one-third over the past decade; and the proportion of producer support paid for by consumers in those countries through higher prices has fallen slightly from 65 to 60 per cent (OECD 1998a, p. 19). However, about two-thirds of those changes are due to a one-sixth rise in international prices, and less than one-tenth is due to a decline in domestic prices (OECD 1998b, pp. 36-38). Thus it can be anticipated that a return to low international prices as in 1998 will cause the OECD's PSE estimates to rise commensurately, other things equal.

The data base for the Global Trade Analysis Project (GTAP) at Purdue University incorporates estimates of the effect of such measures as export taxes and subsidies, ‘voluntary’

---

international food prices in recent years have been higher than in the base period, so exportable surpluses have been

export restraints, and the tariff equivalent of quantitative restrictions on imports and exports for 1992, and of how distortions will change with Uruguay Round implementation.<sup>3</sup> By using production for each sector across geographic regions valued at distortion-free prices as weights, it is possible to infer the nominal rates of assistance to each sector resulting from these trade policy distortions before and after the Round (Table 1). The data suggest agricultural protection will fall by about one-fifth or more in advanced and newly industrialized economies but still will be extremely high compared with that for manufacturing. Moreover, agriculture in low- and middle-income economies will remain effectively taxed relative to other sectors because manufacturing assistance will come down by a similar amount. The extent of this “taxation” is understated because the GTAP data base does not have comprehensive coverage of non-tariff protection to manufacturing, and all restrictions on agricultural exports. Nor is adequate account taken of the fact that services industries tend to be highly protected in many developing countries, reducing the incentive to invest in agriculture and industry. Most countries made only limited commitments under the General Agreement on Trade in Services (GATS) to liberalize access to their service markets (Hoekman 1996); the result may well be that industries, including agriculture, that rely relatively heavily on service inputs may be subjected to a decrease in effective protection following implementation of the Uruguay Round.

In short, implementing the reforms agreed to in the Uruguay Round will involve only very modest benefits from liberalization by 2000 for developing country agriculture. In the absence of continued efforts to reduce market access barriers in *both* agriculture in high-income countries and services in developing countries, disincentives to invest and expand agricultural output in developing countries will remain high. Having said that, the Uruguay Round has at least begun to bring agriculture back into the mainstream of the WTO and has led to the development of rules governing farm trade. Since the WTO came into force, the share of agricultural dispute settlement cases has dropped to about 30 per cent, compared with some 40 per cent during the 1950-90 period (Hudec 1998, p. 38).<sup>4</sup> Given the greater incentive to bring

---

able to be disposed of with lower subsidy outlays.

<sup>3</sup> See <http://www.agecon.purdue.edu/gtap> for details of the GTAP Version 3 data base. The data includes estimates of post-Uruguay Round tariffs and the export tax equivalents for MFA quotas, based on extensive work at the World Bank (see Hertel et al. 1996). It is assumed here that agricultural export subsidies in advanced industrial economies will be reduced by 25 percent under the Uruguay Round.

<sup>4</sup> For a list of WTO dispute cases involving agricultural products through 1998, see OECD (1998b, pp. 145-48).

cases because of the strengthening of the dispute settlement process, this suggests that the Uruguay Round agreement has led to less confrontation in farm trade – although not enough time may yet have elapsed to be able to evaluate the extent to which WTO members will comply with the outcome of dispute settlement procedures.

## **2. Agriculture and the New Trade Agenda**

As traditional trade barriers decline, attention focuses increasingly on the trade-impeding effects of domestic regulatory regimes. This so-called new trade agenda revolves around policies such as setting and enforcement of product standards, state-trading, subsidy regimes, export controls, competition law and procurement practices. Such policies can effectively distort competition, even if applied on a nondiscriminatory basis. These “new” policy issues virtually all have relevance to the agricultural liberalization agenda, but the Uruguay Round negotiations on agriculture focused only on some of them, notably production subsidies and product standards.

There are two major inter-related questions that arise with respect to domestic policies. The first is whether rule-making efforts should be pursued on a sector-specific basis. The second is to determine to what extent priority in multilateral negotiations should be given to traditional market access talks as distinct from rule making in new areas.

The new trade agenda is highly relevant to agriculture. Indeed, “new trade” issues have figured prominently in past multilateral discussions on agriculture. In the Uruguay Round progress was made in designing rules for the application of sanitary and phytosanitary standards (SPS), and disciplining the ability of governments to grant agricultural production and export subsidies. However, disciplines are either weak, country-specific or nonexistent in many areas, including competition-related policy and regulation (the nexus of state-trading, export taxes and cartels, and intellectual property broadly defined to include indications of origin, breeder’s rights and seed varieties), liberalization of ancillary services and input markets (distribution, marketing, use of new production technologies), and the extra-territorial application of production process standards.<sup>5</sup>

Attempts to discipline and regulate the use of subsidies under GATT auspices have been pursued for decades. Although the Uruguay Round Agreement on Agriculture can be termed a

---

<sup>5</sup> For a review of the WTO rules see Hoekman and Kostecki (1995); for a negotiating history, see Croome (1998).

success relative to past efforts, the disciplines imposed on subsidies are weak. Indeed wide scope remains for governments to engage in subsidization. Somewhat greater progress was made in the area of food standards. The SPS Agreement seeks to ensure that any SPS measures are imposed only to the extent necessary to ensure adequate food safety and animal and plant health on the basis of scientific information, and are the least trade-restrictive measures available to achieve the risk reduction desired. Although there is substantial “wobble room” in the wording of disciplines, consultations between WTO members are leading to conflict resolution in numerous cases. The dispute settlement evidence to date shows that exporting countries can succeed in obtaining rulings against the most egregious cases of protectionist abuse of standards (Roberts 1998). A problem that confronts developing countries in this area is that it may be difficult to satisfy partner countries that domestic institutions can be trusted to enforce the required standards. Alternatively, such institutions may not be able to perform testing and certification functions without imposing significant burdens on trade.

Much of the new trade agenda concerns *domestic* policies, where the burden of taking action rests on the shoulders of national governments. This suggests that policymakers should ask what multilateral negotiations on the various potential issues can do to help move domestic policies and regulatory regimes to be more supportive of economic growth and development. For example, in some countries entry and arbitrage barriers—competition policy-related issues—may be significant; or state-trading entities (STEs) may have the exclusive right to import and/or export to control domestic supply and distribution of agricultural commodities (Ingco and Ng 1998). India is an extreme case where there are restrictions on mobility and trade in agricultural goods, with private traders being prohibited to build up stocks in key staples or to engage in arbitrage activity across districts. In part such restrictions are enforced because of the existence of monopsony state buying agencies (e.g., in cotton). India is representative, however, in that it effectively provides negative protection to agriculture through high levels of protection for industrial products (Pursell and Gulati 1995). Although India initiated a trade reform program that led to a decline in import weighted average tariffs from 87 per cent in 1991 to 27 per cent in 1996, the agricultural supply response was quite limited because of structural bottlenecks, which in turn are largely the result of a variety of policies that restrict competition in the provision of

---

key inputs such as credit and of infrastructure services such as transport, storage, and communications (Gulati 1998). This illustrates both the importance of going beyond liberalization of trade in manufactures to include elimination of entry and operating restrictions in services, and focusing on the efficacy and efficiency of regulatory policies that affect resource allocation across sectors.

There is now substantial evidence that policies that reduce competition in service industries are very costly to developing countries. Producer services, in particular, play a crucial role in the development and growth process. It is well known that losses of agricultural output due to lack of financial intermediation, poor transportation and storage facilities and substandard communication networks can be significant. For example, an empirical investigation of the determinants of agricultural output in India found that expansion of commercial bank networks and availability of services had a very substantial positive effect on private agricultural investment (Binswanger et al. 1993). A study of the effects of flag discrimination and cargo preference policies maintained by Chile until the late 1970s documented that the result was high costs for shippers and inadequate supply of efficient/specialized ships required to transport new products such as fresh fruit and fish to markets. Allowing entry by shifting to the use of taxes on the use of foreign shipping lines and price preferences for domestic suppliers led to substantial diversification of Chilean exporters away from domestic shipping lines, and a decline in average shipping costs. Most Chilean shipping lines shifted to flags of convenience, and were able to adapt to the changed environment (Bennethan et al. 1989).

Given that the positive payoff to developing country agriculture from domestic regulatory reform can be substantial, governments should determine whether multilateral negotiations can be helpful in the pursuit of such reforms. In many cases they can facilitate reform, but in other cases they represent a threat to developing country farm exports. The motivation for high-income countries to put new trade agenda issues on the WTO negotiating table is a perception that national policies pursued by other countries impose negative externalities on the high-income countries. Of particular importance for developing countries in this connection are efforts by high-income countries to enforce national standards and laws extraterritorially. Examples that have already arisen in the GATT/WTO context include attempts by governments to impose stricter standards with respect to the inadvertent catching of dolphin and turtles when fishing for

tuna and shrimp, respectively. Current WTO rules only allow such “production process” standards to be applied to imports if it can be shown that the processes targeted have repercussions for the physical characteristics (quality) of the product concerned. An example would be a requirement that shrimp be washed in water of a certain level of purity, a food safety norm that has been imposed by the EU on imports. But in many cases the process standards cannot be justified under this criterion, and this has given rise to disputes. The potential damage to the global trading system from allowing more general national process standards to be applied to imports is very substantial, as it can eliminate the ability of countries to exploit their comparative advantage.

### 3. Determining Priorities

At the end of the Uruguay Round it was agreed agricultural negotiations would be reopened by the end of 1999 to continue the process of farm policy reform. Attention in these next talks clearly must centre on outlawing farm export subsidies, further reducing domestic producer subsidies, and getting the level and dispersion of bound tariffs on agricultural imports of high-income countries down substantially, in the process constraining their ability to use *de facto* variable levies. But just as important for developing country agriculture is the need to reduce protection of manufacturing and services industries in their own economies. Both sets of market access reforms (farm policies of high-income countries and non-farm policies of developing countries) offer great potential for boosting economic welfare in developing countries (Anderson, Hoekman and Strutt 1999), especially that of farm households.

There is much uncertainty regarding the potential benefits of pursuing rule-making for new trade agenda issues. The experience to date illustrates that it is difficult to distinguish between policies that can be justified on public interest (national welfare) grounds and those where the intervention is motivated by protectionist intentions. It also reveals that governments are disinclined to consider the external effects of actions that they deem justified on national public interest grounds. Assessing whether the benefits of a proposal are greater than the costs is often not straightforward because it is difficult to quantify the impact of alternative regulatory policy options.<sup>6</sup> But in many cases basic economic theory can be used to rank order the likely

---

<sup>6</sup> It is no accident that CGE model-based numerical simulation exercises tend to be limited to tariffs and certain non-

impact of alternative proposals. A useful rule of thumb is whether a proposal will increase the contestability of markets without impeding the realization of public interest objectives (such as public health).

The focus of GATT/WTO negotiations has always been on increasing the contestability of markets by reducing/eliminating discrimination against foreign products and producers. One way to apply this rule of thumb to the new trade agenda is to seek to extend the reach of the nondiscrimination principle to the issues such as subsidies, competition legislation, foreign investment regimes, and government procurement practices. In all these areas governments are currently free to pursue discriminatory policies, and often do.<sup>7</sup> For example, foreign firms may not have legal standing to petition for an antitrust investigation by domestic competition authorities against anticompetitive practices by local firms. They may be prohibited from obtaining subsidies even if they have set up an affiliate in a country, and often are subject to restrictions in engaging in foreign direct investment (FDI), which excludes them from benefiting from subsidy regimes or from bidding for government contracts in instances where domestic content or local presence requirements are imposed.

Liberalizing FDI and extending the national treatment principle to foreign suppliers of goods and services would have a significant impact in terms of “leveling the playing field”. An open investment regime in general, complemented by a commitment to apply national treatment to the supply of service sectors in the GATS context would go a long way in making markets more contestable. Investment liberalization is already on the agenda of the GATS for service sectors, as nations can make specific commitments on market access and national treatment for foreign providers who seek to establish a “commercial presence”, i.e., engage in FDI. This approach could be extended to investment more generally. Conceptually, the rationale for excluding FDI in manufacturing and agriculture is weak, although a strong case can be made that liberalization of services, including sectors such as distribution and transport, is of particular importance.<sup>8</sup> As mentioned, commitments made by WTO members on services are quite limited, with developing countries in particular fully opening up only a small set of service activities to

---

tariff barriers.

<sup>7</sup> Signatories of the Agreement on Government Procurement may not discriminate against each other, however.

<sup>8</sup> Hoekman and Saggi (1999) argue that multilateral negotiating efforts that center on further market access liberalization on a nondiscriminatory basis, including services, are likely to be more fruitful from an economic welfare and growth perspective than efforts to establish general rules on FDI policies.

foreign competition. Liberalization of trade and investment in services could also help to diffuse pressures for “action” in the antitrust area (e.g., with respect to distribution-related disputes).

#### **4. Negotiating Modalities and Options**

The agenda for negotiations on agricultural tariffs, tariff rate quotas, minimum market access commitments, and export subsidies has been laid out by a number of analysts (Josling 1998a,b; Anderson 1998b, 1999). As mentioned above, the issues here are straightforward and center on further reduction of intervention. The simplest approach would be to continue on the path established during the Uruguay Round and seek significant cuts in bound tariffs and export subsidies, and substantial increases in tariff rate quotas. This can be achieved through agreement to apply across-the-board formulas to agricultural tariff bindings and export subsidies, as was done to reduce tariffs on manufactures in the Kennedy and Tokyo rounds.<sup>9</sup> Getting there is another matter, of course, and substantial efforts are likely to be required to mobilize interest groups and civil society to push for significant cuts in agricultural protection in high-income countries. Expanding the negotiating agenda to include new issues can help to achieve this.

The “new trade agenda” issues are cross-sectoral, not agriculture-specific. If efforts are pursued to negotiate disciplines in these areas—something we believe is in the interest of developing countries as it may assist in the adoption of better domestic policies and generate negotiating leverage—a “horizontal” approach is to be preferred. It is often recognized that the principle of national treatment is inherently limited in increasing competition on markets, as it does nothing to open access to markets where government policies prevent entry or impose operating restrictions on a discriminatory basis. Experience has illustrated that going beyond national treatment is difficult, however, as it implies intrusive negotiations on the substantive provisions of regulatory regimes.

Conceptually matters are relatively clear-cut: what is required is a determination whether domestic policies that have detrimental effects on foreign suppliers can be justified on public interest grounds. More specifically, it can be asked whether a less trade-distorting policy can be identified to achieve a particular objective. If so, the presumption would be that the measure can

---

<sup>9</sup> In the Kennedy round a linear tariff cutting formula was used; in the Tokyo round a harmonization formula was employed that aimed to reduce the dispersion in average tariffs as well as their level. The latter is to be preferred on economic grounds. See Hoekman and Kostecki (1995) for a discussion of the earlier rounds of GATT negotiations.

be contested. Of course, making this basic economic principle operational in the international context is not straightforward, not least because in practice measures may be pursued because a nation has the power to influence the terms of trade in its favor, and because there will always be differences in opinion as to whether alternative instruments are feasible or not. The result has been that multilateral efforts tend to centre on direct regulation of specific government policies.

### *Domestic subsidies*

In the next round an early decision needs to be taken as to whether to strengthen or abandon the attempt to constrain domestic policies under the WTO. The Cairns Group may well decide to pursue further strengthening of the rules on subsidies to farmers. Attention is likely to centre on elimination of the 'blue box'<sup>10</sup> and reducing the 'green box' items by reducing the loopholes provided for continuing output-increasing subsidies. Many of the green box measures give at least some encouragement to production. An example is crop insurance, which by reducing risk must encourage output somewhat. One way of tightening disciplines on domestic supports would be to replace the AMS with measures that apply to subsets of farm commodities, as was originally intended in the Uruguay Round (Anderson 1998b).

Snape (1987) has argued that with respect to subsidies governments should be left free to pursue whatever domestic policies they wish; this argument can be extended to regulatory policy more generally. A rationale for this point of view is that in practice it is impossible to determine when subsidies are economically "legitimate" in the sense of offsetting market failures or being the least-cost instrument to pursue certain non-economic objectives, and that governments and interest groups will always be able to identify instruments that are not subject to multilateral disciplines to pursue their aims. The result of pursuing multilateral disciplines is then a never-ending process with uncertain benefits.

This approach is unlikely to be adopted by policymakers. However, if negotiations are to be initiated, a strong case can be made that development of specific rules on agriculture is not necessary. Instead, agreements on subsidies (and countervailing duties) should apply to all sectors of economic activity equally. The WTO Subsidies Agreement is to be reviewed in 1999.

---

<sup>10</sup> The 'blue box' contains US and EU direct payments to farmers who restrict their output or at least some inputs. These were not counted in the Aggregate Measure of Support (AMS) and were granted exemption from challenge (countervailing duties) as a way of moving the Uruguay Round talks forward.

Currently, that agreement takes a similar approach as the Agriculture Agreement and defines a set of general “green” or non-actionable subsidies. These include support of R&D, aid for disadvantaged regions, and assistance to firms to adapt plants to new environmental measures. Disciplines in the area of services are yet to be developed and are likely to figure on the agenda of the prospective negotiations on services. Given a general desire by WTO members to define rules of the game on subsidy practices, efforts should be made to merge the agricultural disciplines with those applying to other merchandise and to be developed for services so that a common set of rules and principles come to apply to this area of domestic policy.

*Competition policies, including state trading*

Similar arguments apply to other new trade agenda items such as competition policy or product standards. For example, many countries have government-sanctioned single-desk selling agencies/export monopolies for agricultural commodities, and the activities of such entities have become a concern to the international community. State trading was considered a relatively minor aspect of policy among the original signatories of the GATT, and is not subject to serious constraints under GATT law. Partly this reflects the fact that it was most prevalent in agriculture—a sector that remained largely outside the purview of multilateral discipline until the Uruguay Round. With the re-introduction of agriculture in the WTO, the adoption of multilateral disciplines for services (GATS) and the prospective accession to the WTO of many economies in transition, state trading has become a higher profile issue that is part of the much bigger complex of policy questions to do with the conditions of competition in markets. Two distinct approaches currently are pursued in the WTO regarding state trading (Hoekman and Low 1998). The first is to subject the behavior of such entities to multilateral disciplines such as nondiscrimination and transparency, enforced through WTO dispute settlement (Art. XVII of GATT). The second is to negotiate on national treatment and market access on a case-by-case basis (Arts. XVI and XVII of GATS). As it stands, Article XVII is worded quite broadly and potentially covers a wide range of activities, but its disciplines are weak: STEs are to abide by MFN and not to impose price mark-ups on domestic sales that exceed the relevant tariff bindings.

In seeking to impose greater discipline on STE-type activities within the multilateral trading system, the choice is between building upon existing approaches and/or adopting new

ones. The following options can be identified (Hoekman and Low 1998): (i) maintain the principle of “STE freedom” but expand behavioral rules for STEs, complemented by domestic enforcement mechanisms; (ii) adopt the GATS’ specific commitments approach to STEs to cover their trade and distribution activities; (iii) seek agreement that certain types of STEs and supporting policies should be prohibited; (iv) apply national competition law to the activities of STEs; (v) strengthen the ability of market participants to contest the exclusive rights granted to STEs, both through the adoption of criteria to ensure that STEs are efficient (e.g., via regular competitive bidding for exercising the exclusive rights) and through judicial enforcement of whatever rules of the game are agreed concerning the behavior of STEs; and finally (vi) seek to introduce a “necessity” clause similar to that found in Article XX of GATT, that is, require that the granting of exclusive rights is *necessary* to achieve the government’s objective and that the measure used is the least trade distorting method available. There are therefore numerous options. The main point to be emphasized is that vigorous pursuit of a market access liberalization agenda will discipline the ability of STEs to exert their market power. If tariffs are low and have been bound, STEs will be constrained to impose mark-ups that are no higher than the bound tariff.

The issue of STEs is a subset of the more general problem of dealing with the possible anti-competitive effects of entities with dominant positions or exclusive rights and privileges. In the recent WTO agreement on basic telecommunications a set of pro-competitive regulatory principles were adopted by countries that require the establishment of independent regulatory authorities to monitor the behavior of dominant telecom suppliers and ensure interconnection on the basis of cost. Efforts to extend the reach of such principles more broadly to both STEs and other firms with exclusive rights should be pursued, with common rules applying to all such entities whatever the sector of activity in which they are engaged.

*Technical standards, including SPS measures*

Many countries use very blunt quarantine instruments such as import bans that excessively restrict imports well beyond what is necessary for protecting the health of their plants and animals (and citizens in the case of food safety concerns). For example, there are outright bans on imports of many products, including from agricultural-exporting countries seeking to

preserve a disease-free image. The levels of protection involved are in some cases equivalent to tariffs of more than 100 per cent.<sup>11</sup> Without some form of notification requirement on WTO members that forces them to disclose the degree to which trade is restricted by such measures, reform in this area is likely to be confined to the very small proportion of those cases that are brought before the WTO's dispute settlement body. The expense of such legal proceedings and the time involved in concluding each case ensures the pace of reform by that means alone would be glacial.

The demand for higher quality, safer food rises with per capita incomes. However, perceptions about the safety of different foods and food production and processing methods, and conformity assessment procedures, differ greatly—even among countries with similar income levels. The WTO Dispute Settlement case between the US and EU on beef hormones showed that standards differences are difficult to resolve even with the best scientific advice. Other examples are irradiated food, cheese made from unpasturised milk, and genetically modified organisms (Mahe and Ortalo-Magne 1998, Henson 1998). Increasingly over time such issues will arise under the Uruguay Round's SPS and Technical Barriers to Trade agreements. But they will also arise in other, non-agriculture-related contexts. As with state-trading, subsidies, and competition and industrial policies more generally, here again there is a strong case for developing common disciplines for all types of products, whether agricultural or not. There is nothing special about food as compared to, say, regulation of dangerous chemicals, heavy metals, etc., all of which may enter into the production and disposal of manufactured goods.

#### *Environmental standards*

Attempts to “export” environmental or social standards have become particularly controversial in recent years. Agriculture's contribution to the natural environment is mostly negative. Some claim that it is adding to biodiversity and the landscape by preserving, for example, hedgerows in Europe, but that could be done simply by paying some landowners not to destroy their hedgerows. Others in rich countries claim that farmers need to be compensated for adopting less-environmentally damaging farming practices. This pay-the-polluter idea is the

---

<sup>11</sup> See James and Anderson (1998) and Roberts and DeRemer (1997). The latter report more than 300 technical barriers to imports in 63 countries that are believed to threaten or constrain some US\$5 billion of US farm exports.

opposite of the OECD-sponsored polluter-pays principle, whereby farmers would be taxed according to the extent of the damage their practices cause.

Of major importance to developing country exporters of farm products is the erection of trade barriers against foreign products because of the way they are produced. Mexico won its case at the GATT against the US ban on imports of tuna that were deemed to be caught in nets unfriendly to dolphin, and the shrimp/turtle case had a similar outcome, but both cases have made the GATT/WTO very unpopular with environmental groups. Developing countries will need to continue to argue against import restrictions being allowed on products produced by methods not liked by importing countries – otherwise there would be no end of restrictions being imposed on such grounds (Anderson 1998a). The recent Appellate Body decision in the shrimp case appears to provide greater leeway for countries to use trade policy to enforce national norms and environmental standards; this is something that needs to be monitored closely by developing countries. As with all the other issues discussed in this section, there is no need or rationale for agriculture-specific approaches. The issues are generic; rule-making (and opposition to certain types of rules) should also be general in nature.

## **5. Concluding Remarks**

The next stage of agricultural reform will be conducted in an environment in which globalization forces (including ever-faster international transfers of information, ideas, capital, skills and new technologies) will be having ever-stronger impacts on markets but simultaneously may trigger sporadic policy backlashes. Examples of the former forces affecting agriculture include the new genetically engineered crop seeds that are part of the biotechnology revolution in the seed/pesticide industry, and the on-going scientific and marketing innovations in the wine industry. Both industries are also experiencing surges in economies of scale which, together with the liberalization of the world's financial markets over the past 15 or so years, is encouraging rapid expansion of foreign direct investment by large multinational corporations. The WTO is a contributor to that expansion (e.g., in providing more secure property rights for seeds and geographical indications for products such as wine). The privately optimal international location of production may well change in non-trivial ways as a result, bringing forth new forces for adjustment. The current East Asian financial crisis reminds us that in stressful circumstances

governments may be tempted either to embrace the forces of change and facilitate efficient and rapid adjustment to the new market-driven circumstances, or to try to resist change by turning their back on reform and intervening in those markets.

Traditional market access liberalization should continue to be the priority issue for developing countries. From an agricultural perspective, attention should focus first and foremost on reducing protection granted to manufacturing and services industries in developing countries themselves, as that is a significant anti-agricultural bias in the policy stance of many low- and medium-income economies, making it more difficult for them to benefit from the agricultural trade reform of OECD countries. While in principle this can be done unilaterally, the multilateral negotiating process offers an opportunity to pursue reforms which powerful domestic interest groups have been able to block by obtaining a *quid pro quo* from trading partners. The WTO can also be a useful instrument through which to lock in reforms.

As far as the multilateral agricultural agenda is concerned, the focus should be on further reducing agricultural protection in industrialized countries so as to give developing country farmers better access to export markets. Tariff bindings should be reduced substantially to equal the applied average rates for manufactures. This market access agenda can and should be pursued independently of the “new trade agenda” that has become the center of attention in high-income countries. Vigorous agricultural trade liberalization by high-income countries, complemented by efforts to increase competition in markets for services and manufactures of developing countries, will among other things also have the effect of increasing the transparency of other policies and thereby reduce the risk of adverse policy reversals.

Given that attempts to reduce, let alone eliminate, traditional measures of protection will confront significant resistance in many OECD countries, and that developing countries have only limited potential to greatly increase exports of services, the mercantilist logic of trade negotiations requires that the agenda of the next set of multilateral negotiations include new trade agenda items. High-income countries are demandeurs on issues such as investment and competition policies, creating the potential for beneficial issue linkages and tradeoffs. These regulatory issues are not sector-specific. Any new disciplines and agreements should therefore apply across-the-board.

Care should be taken not to oversell the benefits of international agreements on new trade issues. From an economic development perspective the main gains will come from market access liberalization: reducing agricultural protection (tariffs) in industrialized countries to the levels applied to manufactures, and reducing the anti-agriculture bias in developing countries induced by protectionist policies in manufacturing and services. Limited analytical and negotiating resources in developing countries has made a number of countries hesitant about a comprehensive new trade round, to say the least, and this is one reason why negotiation on these issues should be expected to take a substantial amount of time. But accepting to discuss the new trade issues could help move the developing country market access agenda forward, while at the same time helping governments adopt regulatory policies that support the development and growth of a competitive export sector.

## References

- Anderson, K. (1995), "Lobbying Incentives and the Pattern of Protection in Rich and Poor Countries," *Economic Development and Cultural Change* 43(2): 401-23, January.
- Anderson, K. (1998a), 'Environmental and Labour Standards: What Role for the WTO?', Ch. 8 in *The WTO as an International Organization*, edited by A.O. Krueger, Chicago and London: University of Chicago Press.
- Anderson, K. (1998b), 'Domestic Agricultural Policy Objectives and Trade Liberalization: Synergies and Trade-offs', COM/AGR/CA/TD/WS(98)101, in Proceedings of the OECD Workshop on Emerging Trade Issues in Agriculture (Paris, 25-26 October 1998), published on the OECD's website at [www.oecd.org/agr/trade/](http://www.oecd.org/agr/trade/).
- Anderson, K. (1999), 'Agriculture, WTO, and the Next Round of Multilateral Trade Negotiations', to be published on the World Bank/World Trade Organization joint Trade and Development Centre website at [www.itd.org](http://www.itd.org) (forthcoming).
- Anderson, K. and Y. Hayami (1986), *The Political Economy of Agricultural Protection*, Boston, London and Sydney: Allen and Unwin.
- Anderson, K., B. Hoekman and A. Strutt (1999), 'Agriculture and the WTO: Next Steps', paper to be presented at a CEPR/NBER workshop on New Issues in the World Trading System, London, 19-20 February.
- Anderson, K. and R. Tyers (1993), 'More on Welfare Gains to Developing Countries from Liberalizing World Food Markets', *Journal of Agricultural Economics* 44(2): 189-204, May.
- Bennethan, E., L. Escobar and G. Panagakos (1989), "Deregulation of Shipping: What Is to Be Learned from Chile?," World Bank Discussion Paper 67, Washington DC.
- Binswanger, H., S. Khandker and M. Rosenzweig (1993), "Infrastructure and Financial Institutions Affect Agricultural Output and Investment in India," *Journal of Development Economics* 41:337-66.
- Croome, J. (1998), *Reshaping the World Trading System*, Deventer: Kluwer.
- Goldin, I. and D. van der Mensbrugge (1996), 'The Uruguay Round: An Assessment of Economy-wide and Agricultural Reforms', W. Martin and L.A. Winters (eds.), *The Uruguay Round and the Developing Countries*, Cambridge: Cambridge University Press.

- Gulati, A. (1998), "Indian Agriculture in an Open Economy: Will it Prosper?," in I.J. Ahluwalia and I. Little (eds.), *India's Economic Reforms and Development: Essays for Manmohan Singh*, London: Oxford University Press.
- Henson, S. (1998), 'Regulating the Trade Effects of National Food Safety Standards', COM/AGR/CA/TD/TC/WS(98)123, in Proceedings of the OECD Workshop on Emerging Trade Issues in Agriculture, Paris, 25-26 October, <http://www.oecd.org/agr/trade/>.
- Hertel, T.W., W. Martin, K. Yanagishima and B. Dimaranan (1996), 'Liberalizing Manufactures Trade in a Changing World Economy', Ch. 7 in *The Uruguay Round and the Developing Countries*, edited by W. Martin and L.A. Winters, Cambridge and New York: Cambridge University Press.
- Hoekman, B. (1996), "Assessing the General Agreement on Trade in Services," in W. Martin and L. Alan Winters (eds.), *The Uruguay Round and the Developing Countries*, Cambridge: Cambridge University Press.
- Hoekman, B. and M. Kostecki (1995), *The Political Economy of the World Trading System: From GATT to WTO*, Oxford: Oxford University Press.
- Hoekman B. and P. Low (1998), "State Trading and Access to Markets: Alternative Approaches to Rule Making for Entities with Exclusive Rights," in P. Mavroidis and T. Cottier (eds.), *State Trading in the Twenty-first Century*, Ann Arbor: University of Michigan Press.
- Hoekman, B. and K. Saggi (1999), "Multilateral Disciplines for Investment-Related Policies?," mimeo, the World Bank, Washington, D.C.
- Hudec, R.E. (1998), 'Does the Agreement on Agriculture Work? Agricultural Disputes After the Uruguay Round', IATRC Working Paper #98-2, Department of Applied Economics, University of Minnesota, April.
- Ingo, M.D. (1995), 'Agricultural Trade Liberalization in the Uruguay Round: One Step Forward, One Step Back?' supplementary paper prepared for a World Bank Conference on *The Uruguay Round and the Developing Countries*, Washington, D.C., 26-27 January.
- Ingo, M.D. (1996), 'The Uruguay Round and the Least-Developed Low-Income Food-Deficit Countries', paper presented to the Inter-Agency Meeting of the World Food Situation and Net Food-Importing Countries, the World Bank, Washington, D.C., 18-19 December.

- Ingo, M.D. and F. Ng (1998), "Distortionary Effects of State Trading in Agriculture: Issues for the Next Round of Multilateral Trade Negotiations," Policy Research Working Paper 1915, World Bank, Washington, D.C..
- James, S. and K. Anderson (1998), 'On the Need for More Economic Assessment of Quarantine Policies', *Australian Journal of Agricultural and Resource Economics* 41(4): 525-44, December.
- Johnson, D. G. (1973), *World Agriculture in Disarray*, New York: St. Martin's Press.
- Josling, T. (1998a), *Agricultural Trade Policy: Completing the Reform*, Policy Analyses in International Economics No. 53. Washington, D.C.: Institute for International Economics.
- Josling, T. (1998b), 'The Uruguay Round Agreement on Agriculture: A Forward Looking Assessment', COM/AGR/CA/TD/WS(98)100, in Proceedings of the OECD Workshop on Emerging Trade Issues in Agriculture, Paris, 25-26 October, <http://www.oecd.org/agr/trade/>.
- Krueger, A.O. (1992), *The Political Economy of Agricultural Pricing Policy: Vol. 5, A Synthesis of the Political Economy in Developing Countries*, Baltimore: Johns Hopkins University Press.
- Krueger, A.O., M. Schiff and A. Valdes (1988), 'Agricultural Incentives in Developing Countries: Measuring the Effect of Sectoral and Economy-wide Policies', *World Bank Economic Review* 2(3): 255-72, September.
- Lindert, P.H. (1991), 'Historical Patterns of Agricultural Policy', in *Agriculture and the State: Growth, Employment and Poverty*, edited by C.P. Timmer, Ithaca: Cornell University Press.
- Mahe, L.P. and F. Ortalo-Magne (1998), 'International Co-operation in the Regulation of Food Quality and Safety Attributes', COM/AGR/CA/TD/TC/WS(98)102, in Proceedings of the OECD Workshop on Emerging Trade Issues in Agriculture, Paris, 25-26 October, published on the internet at <http://www.oecd.org/agr/trade/>.
- OECD (1998a), *Agricultural Policies in OECD Countries: Monitoring and Evaluation 1998*, Paris: OECD.
- OECD (1998b), *Agricultural Policies in OECD Countries: Measurement of Support and Background Information 1998*, Paris: OECD.

- Pursell, G. and A. Gulati (1995), "Liberalizing Indian Agriculture--An Agenda for Reform," in Robert Cassen and Vijay Joshi (eds.), *India: Future of Economic Reform*, London: Oxford University Press.
- Roberts, D. (1998), 'Implementation of the WTO Agreement on the Application of Sanitary and Phytosanitary Measures: The First Two Years', Working Paper #98-4, Department of Applied Economics, University of Minnesota, May.
- Roberts, D. and K. DeRemer (1997), 'Overview of Foreign Technical Barriers to U.S. Agricultural Exports', ERS Staff Paper No. 9705, Washington, D.C.: U.S. Department of Agriculture, March.
- Schiff, M. and A. Valdes (1992), *The Political Economy of Agricultural Pricing Policy: Vol. 4, A Synthesis of the Economics in Developing Countries*, Baltimore: Johns Hopkins University Press.
- Snape, R.H. (1987), 'The Importance of Frontier Barriers', Ch. 15 in *Protection and Competition in International Trade: Essays in Honour of W. M. Corden*, edited by H. Kierzkowski, Oxford: Basil Blackwell.
- Tyers, R. and K. Anderson (1992), *Disarray in World Food Markets: A Quantitative Assessment*, Cambridge and New York: Cambridge University Press.

**Table 1: Nominal rates of assistance to agriculture and other industries via trade policies,<sup>a</sup> 1992 and post-Uruguay Round implementation (per cent)**

	<i>Advanced industrial economies</i>	<i>Newly industrialized economies<sup>b</sup></i>	<i>Low- and middle-income economies</i>
<b>1992:</b>			
Agriculture and processed food	39	43	7
Other primary and manufacturing industries	3	8	12
<b>Post-Uruguay Round:</b>			
Agriculture and processed food	33	33	6
Other primary and manufacturing industries	2	6	11

<sup>a</sup> The nominal rates of assistance to each sector is calculated from the detailed industry estimates by using production for each sector in each region of the data base valued at distortion-free prices as weights.

<sup>b</sup> Hong Kong, Korea, Singapore and Taiwan.

**Source:** Unpublished compilation from the GTAP Version 3 data base prepared by Anna Strutt. See <http://www.agecon.purdue.edu/gtap> for details of the GTAP data base.