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The Problem: Rich Countries Supporting Rich Farmers

Oxfam International's "Make Trade Fair" campaign lambastes rich countries for spending "$1 billion a day on agricultural subsidies."[1] Other critics use the metaphor of cows in rich countries living in luxury, supported by subsidies that exceed the incomes of more than a billion people living in extreme poverty on $1 a day (Sharma n.d.). Pascal Lamy, now head of the WTO, rejected this criticism when he was the EU commissioner for trade, arguing that the true figure for total subsidies is a third of what advocacy groups claim. Who is right?

The first step in crafting a meaningful agreement to reduce agricultural support is to understand the mechanisms rich countries use to support their farmers, what these mechanisms cost, and who pays. This chapter begins with a summary of the main policy tools available to support farmers in wealthy countries. It then summarizes how the WTO organizes and addresses the various forms of agricultural support. The last two sections examine the pattern of support across countries and commodities as measured by the Organization for Economic Cooperation and Development (OECD).

Mechanisms for Supporting Farmers

Policymakers from different countries offer different justifications at different times for supporting agriculture, from food security, to supporting

1. See "The Issues: Rigged Rules" at the Make Trade Fair Campaign Web site, www.maketradefair.com (accessed April 24, 2006).

family farms, to preserving cultural or environmental amenities in rural areas. In practice, whatever the initial motivation, most policies evolve into programs that raise farm incomes and do so in ways that encourage increased production. Most governments also face a budget constraint that, along with structural characteristics of the agricultural sector, influence the specific policy mix chosen.

There are two basic approaches to supporting farmers:

- propping up market prices by controlling supplies through import restrictions (tariffs, quotas, or variable import levies or price bands), domestic supply controls (production quotas, public stockholding, land set-asides), or export subsidies; and
- propping up farm incomes through various types of subsidy payments, which can be, to varying degrees, linked to production, prices, or input use, or "decoupled" from production decisions.

The key to distinguishing between these two approaches is the price received by farmers when they sell in the domestic market. If that price is above world prices because of government policies, it is referred to here as market price support (MPS). If the domestic price is roughly the world price (adjusted for transportation and other distribution costs), with farmers receiving payments for any difference between that price and government targets, it is referred to as a subsidy.

The most common approach in much of the world is MPS, mainly through trade restrictions. Most of the costs of MPS are borne by consumers, while taxpayers foot the bill in the case of subsidies. But taxpayers also pay some of the costs of MPS when governments end up holding surplus stocks or must use export subsidies to help dispose of them on world markets. In some cases, domestic subsidies and price supports can be combined, as when farmers are paid to forgo production on a portion of their land. The policymakers of rich countries are gradually moving toward decoupled income support payments, but most support today still promotes production and distorts trade.

The degree of distortion depends on the gap between world prices and the domestic prices that policymakers want to achieve. Depending on domestic conditions and the desired level of support, MPS is sometimes provided primarily through import restrictions, as in Japan and South Korea. In other cases, such as for many commodities in the European Union, domestic supply controls and export subsidies are also required to prevent or to dispose of surpluses resulting from above-market prices.

In the United States, policymakers no longer make extensive use of supply controls for the major "program commodities," mostly grains, oilseeds, and cotton, because supporting prices above world levels discourages exports. Instead, farmers receive a variety of direct payments based

on the difference between world prices and legislated price floors or targets, and sell at world prices (see chapter 3). In the more import-sensitive dairy and sugar sectors, MPS by means of import restrictions and domestic supply controls remains the instruments of choice.[2]

The result of these policies at home is that domestic producers gain at the expense of taxpayers, consumers, and producers in nonfavored sectors. Internationally, the opposite is true: Foreign producers and exporters lose as a result of lost sales and lower world prices, but consumers may gain (subject to their own country's trade policies).

Decoupled subsidies avoid these distortions because they are based on past levels of production or payment and have no link to current prices or production. This income support is paid for by taxpayers, rather than consumers and foreign producers, and, in theory, should not influence production decisions. In practice, large decoupled subsidies can reduce risk, discourage exit, and keep production at levels higher than would be expected in an undistorted market.[3]

Moreover, few subsidies are completely decoupled, and most commodities are supported with a combination of more and less distorting policies. For example, US Department of Agriculture (USDA) data show that upland cotton growers in the United States received, on average, a little more than $7 billion in income in crop years 2003 and 2004. Of that, roughly a third, $2.3 billion, was in government payments, but only a bit more than a quarter of that, $680 million, was decoupled from current production or prices.[4] It seems likely that under such a system, decoupled income payments marginally increase the incentive to produce. The extent to which US and EU agricultural subsidies are effectively decoupled is discussed in more detail in chapter 3.

In choosing between price supports and various subsidies, governments typically base their decisions on a particular commodity's relationship to international markets and on policymakers' willingness to bear the costs nationally. With decoupled subsidies, whatever level of support is desired must be paid for entirely through tax collections and transfers. In this case, if policymakers want to reduce the cost of subsidies, they can do so only by reducing the level of support that farmers receive.

Alternatively, if policymakers want to reduce the budget costs associated with production-linked subsidies, they have two options: They can,

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2. Domestic production quotas for peanuts and tobacco have recently been eliminated and quota holders have been compensated with lump sum payments (distributed over a number of years), but import restrictions remain in place.

3. See Baffes and de Gorter (2005) for a discussion of issues related to decoupling, including recent experience in various countries.

4. Data on commodity payments and producer income by source are available under CCC Budget Essentials on the budget page of the USDA's Farm Services Agency, www.fsa.usda.gov (accessed April 25, 2006).

again, lower the level of support or combine supply controls and subsidies, which shifts some of the cost from taxpayers to consumers. In an autarkic economy, this can be achieved through direct production controls or acreage reductions that reduce supplies and raise commodity prices. With trade, sectors that are globally uncompetitive will also need protection from imports, which will transfer some of the cost of the policy to foreign exporters. But commodities with export potential can lose international competitiveness if supply controls raise domestic prices above world levels. Policymakers in this case can offset higher domestic prices with export subsidies, but this again raises budget costs, in addition to imposing costs on international competitors.

MPS usually requires import restrictions to be effective, and consumers pay the bulk of the costs. The specific methods policymakers employ are typically more costly and distorting when governments have official price targets that require them to intervene in markets to store or dispose of surpluses that threaten to breach the price floor, including through the use of export subsidies. The requirement to maintain a given price level typically leads policymakers to choose import restrictions that offer as much insulation from global markets as possible. For example, ad valorem tariffs, which are set as a percentage of the value of the imported product, provide some price support, but the level fluctuates with world prices, making it difficult to maintain domestic price targets. Specific tariffs, by contrast, are calculated as so many dollars, yen, or euros per unit of a product, and they provide relatively more protection when prices are low. For example, a specific tariff of 10 cents per pound of sugar is equivalent to an ad valorem tariff of 100 percent when the import price is 10 cents per pound, but only 50 percent when the price is 20 cents per pound. Not surprisingly, specific and compound tariffs (which combine specific and ad valorem tariffs) are far more commonly imposed on agricultural goods than on manufactured goods.

Import quotas provide an even greater level of certainty and domestic price stability by preventing import surges when world prices dip, which also makes quotas more costly than tariffs. Tariff-rate quotas (TRQs) are a hybrid tool, with lower tariffs up to a quantitative ceiling and higher tariffs over that amount. They are potentially more flexible than simple quotas because imports theoretically can enter at the higher tariff level when import prices fall. But if the tariff on imports in excess of the quota amount is prohibitively high, as it is in many cases involving agricultural products, then the TRQ functions like an import quota.

A second problem is that governments usually distribute the in-quota import quantity among potential exporters by administrative means, with the right to export allocated to various countries on the basis of historical ties or recent trade levels. This prevents imports from adjusting to changing competitive conditions in supplying countries and distorts production and trade patterns in exporting countries as well. For example, some Caribbean sugar exporters no longer fill their quotas in the US market, where the

domestic price has averaged roughly twice the world level over the past two decades, because the EU sugar price is usually three times the world level and these countries do not produce enough sugar to fill both quotas.

To sum up, the costs of agricultural policies are paid principally by the consumers and taxpayers whose governments choose to support farmers, and those governments' citizens will be the primary beneficiaries of any policy reform. But governments also shift some of the costs to foreign suppliers through the use of trade measures, and these costs can be severe for developing countries with large numbers of poor farmers who suffer from depressed prices, even though consumers in such countries may benefit from lower food prices. Developing-country exporters lose access in markets protected by trade barriers, but they also suffer from production-related support and export subsidies that increase volatility and lower average world prices in other export markets.

The WTO Framework for Negotiating on Agriculture

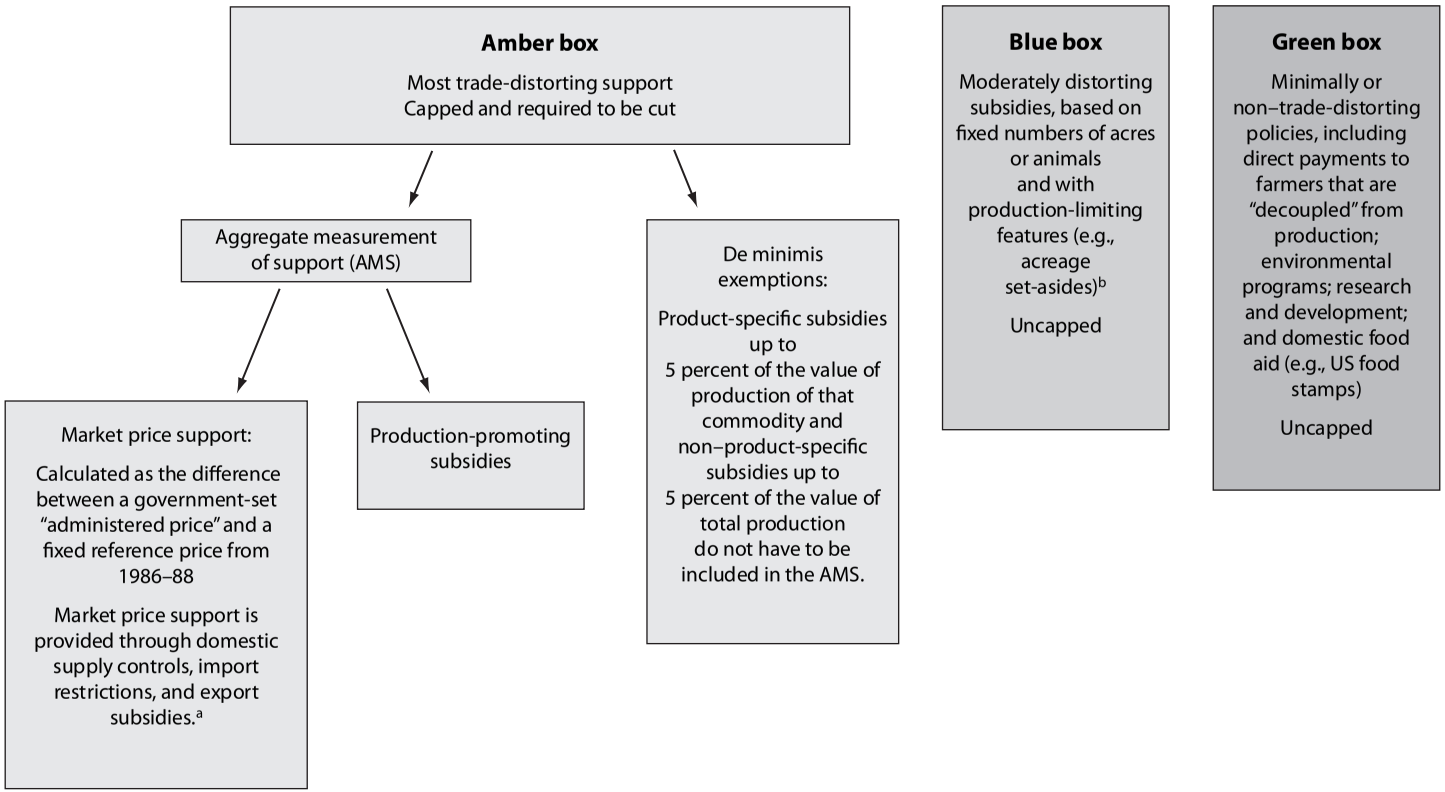
During the Uruguay Round (1986–93), negotiators developed a broad framework for addressing agricultural distortions for the first time since the postwar trade system was created in 1948. In addition to trade barriers, negotiators recognized that production-linked subsidies distorted trade and needed to be addressed as well. The objective was not to force countries to eliminate all support for farmers or rural areas but to reduce the negative effects on the rest of the world.

The Uruguay Round negotiators initially planned to use a scheme based on a traffic signal metaphor, with red for prohibited (export) subsidies, amber for restricted domestic programs that should be reduced, and green for decoupled subsidies that would be permitted. But this organizing principle had to be dropped when the European Community refused to eliminate export subsidies, insisting that they be addressed separately. At this point, the negotiations coalesced around three "pillars" of agricultural support: market access, export subsidies, and domestic support.

Under the last pillar, domestic support, negotiators kept the amber and green boxes and, in a further departure from the traffic light metaphor, agreed to create a "blue box" to accommodate farm payments that, while recognized as trade distorting, were considered less so than amber box subsidies because they were tied to production limits. Figure 2.1 summarizes the domestic support approach the negotiators adopted.

Under the revised system of boxes, developed-country members agreed to reduce export subsidies by 36 percent in value and the volume of subsidized exports by 21 percent over six years. (The rates of reduction were set at 24 and 14 percent, respectively, for developing countries.) The most trade-distorting domestic subsidies were placed in the amber box, but

Figure 2.1 Uruguay Round agreement for reducing domestic support



a. Import restrictions on commodities without an administered price are not included in the AMS.
b. The United States proposes to change this definition to allow payments linked to prices but with a fixed base and no requirement to produce.

payments that would otherwise have been counted in this category were exempted as long as they did not exceed de minimis levels set at 5 percent of the value of production of specific commodities or 5 percent of the value of total agricultural production for non–product-specific subsidies (10 percent in each case for developing countries). The aggregate measurement of support (AMS) in the amber box included trade-distorting support above these limits and was made subject to 20 percent cuts over six years (13 percent for developing countries).

In addition to subsidies, the AMS includes a measure of MPS for commodities that have an "administered price." The MPS measure is calculated as the difference between the administered price and a measure of average world prices in 1986–88, multiplied by the volume of production of the commodity in question. Commodities whose prices are supported purely through import protection, without a guaranteed price floor or target, are covered only in the market access talks. The inclusion of some MPS in the amber box is unfortunate because it makes domestic subsidy measures less transparent and potentially more difficult to control. Japan, for example, eliminated the administered price for rice in the late 1990s but kept strict import controls. This allowed Japan to reduce its reported AMS by 80 percent, by eliminating the MPS portion while maintaining high levels of protection for rice.

Another blow to creating meaningful international discipline on domestic support was the choice of 1986–88 as the period on which the required cuts would be based. By 1995, when implementation began, both the European Union and United States were well under their Uruguay Round targets as a result of budget-driven domestic reforms adopted in the early 1990s and cyclical reductions in payments due to higher commodity prices. Little additional reform was required of either to fulfill their URAA commitments.

Minimally or nondistorting payments can be allocated to the green box with no limit. These include "decoupled" subsidies, which provide income support that is not linked to current production and prices, payments for environmentally motivated land set-asides, research and development support, and domestic food aid, such as the US food stamp program. The blue box, for partially decoupled subsidies that are still moderately distorting, also was not capped because it was regarded as a step toward reform.

The Uruguay Round agreement also required an average tariff cut of 36 percent but allowed cuts of as little as 15 percent for some tariff lines, as long as the overall average was achieved (an average 24 percent cut, with a minimum of 10 percent was required of developing countries). The agreement also required that import quotas be converted to tariffs with an equivalent effect, but countries manipulated the process and many tariffs were set at extremely high levels. In addition, TRQs were permitted for some sensitive products to ensure a minimum level of market access, with lower tariffs on imports up to at least 5 percent of domestic consumption and generally

prohibitive tariffs for overquota imports. The net result of all this flexibility was very little additional market access for agricultural products. Under all three pillars of agricultural support, least developed countries were exempt from reduction commitments, and other developing countries only had to make cuts equal to two-thirds of those undertaken by the rich countries (as indicated in the discussion above by the figures in parentheses). In other respects, however, most developing countries were relatively more constrained than the rich ones. In effect, countries not providing export or domestic subsidies to agriculture at the time the agreement was reached had to "bind" their subsidies at zero. That is, under the agreement, only countries that committed to reducing these subsidies were allowed to have them, with two exceptions: First, developing countries were permitted a temporary exemption to provide subsidies to offset marketing, transportation, and certain other costs related to agricultural exports. Second, all developing countries got access to the 10 percent of production de minimis categories. Beyond that, only about a dozen mostly middle-income countries currently have the right to use export and trade-distorting domestic subsidies for agriculture (WTO 2004).

In a bid to facilitate monitoring, the agreement also required WTO members to periodically report on the application of TRQs and domestic and export subsidies. These notifications are a potentially important source of information on levels of support among WTO members. Unfortunately, members have been lax in following the rules, and the most recent data available in spring 2006 for most major countries were for 2000 or 2001. These data also do not allow for comparison to the prereform period since they have only been collected since 1995. Fortunately, the OECD has been publishing comparable estimates of the value of member governments' support for farmers, by country and commodity, since 1986.

Patterns of Support Across Countries

In its 2005 biennial report on the subject, the OECD estimated that member governments (i.e., taxpayers) and consumers supported agriculture with various policies whose total cost averaged nearly $350 billion annually from 2002 to 2004, a figure closer to Oxfam's assertion in the opening paragraph of the present chapter than Pascal Lamy's (OECD 2005a, 12).[5] But Lamy was correct in asserting that OECD government *payments* to farmers are much smaller. A common mistake is to confuse total support with subsidies. The difference between the two has two sources. The first is the MPS resulting from import restrictions, export subsidies, and domestic supply

5. This discussion of OECD policies focuses on the traditional and richest members, as shown in the tables and charts. Depending on the year, the OECD average also includes the Czech Republic, Hungary, South Korea, Mexico, Poland, Slovakia, and Turkey.

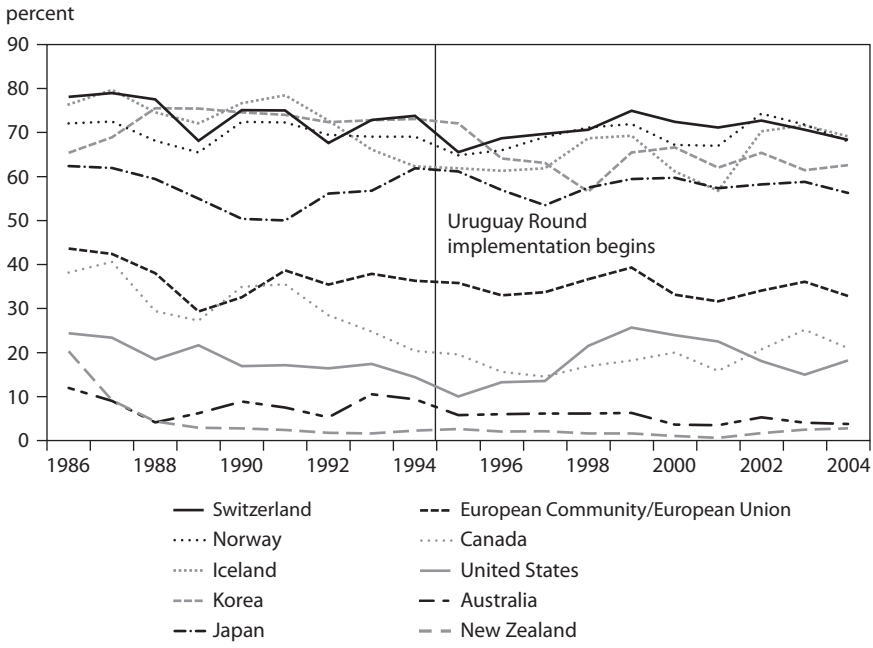
controls. The second is general government support for agriculture that does not directly affect production or corrects for market failures (e.g., subsidies for research and development or infrastructure). The OECD figure of roughly $350 billion is the "total support estimate," reflecting the gross value of transfers from consumers and taxpayers resulting from all policies in support of agriculture.

This figure that should be of concern in international trade negotiations is somewhere between Lamy's $100 billion and Oxfam's $350 billion. The starting point is the OECD's producer support estimate (PSE), which is a calculation of "the annual monetary transfers to *farmers* from policy measures" (emphasis in the original) that either maintain prices above world market levels or provide government payments to farmers (OECD 2004b, 2). Expressed as a percentage, the PSE is the value of producer support as a share of gross farm receipts, which are defined as the "value of total production (at supported farm-gate prices), plus budgetary support" (OECD 2003, 292). In other words, a PSE of 50 percent means that the value of producer support received by farmers equals the value of what they would receive from the market without support. On average, farmers in OECD member states receive transfers from consumers and taxpayers equal to roughly a third of gross receipts, though there is relatively wide dispersion, as shown in figure 2.2 and table 2.1.

Within the PSE, the OECD also calculates the most trade-distorting forms of support to farmers. These categories can be compared with the amber, blue, and green boxes under the WTO framework, though differences in definition and measurement mean they do not exactly match up. The principal difference comes in the measurement of MPS, which accounts for 80 percent of the OECD's classification of the most trade-distorting forms of support and 61 percent of the total (table 2.1). The OECD measures MPS using the gap between the price producers receive and a reference price based on world prices. In contrast to the WTO measure of MPS that is included in the amber box, the OECD measure includes all forms of MPS, not just those with administered prices. The OECD reference price in each report is also updated, while the WTO uses a 1986–88 reference period to calculate the price gap. In 2000, for example, members notified $51 billion in MPS to the WTO, while the OECD estimated such support was three times as high, at $153 billion (OECD 2005a and WTO Agricultural Trade Policy Commitments Database at www.ers.usda.gov).

The other forms of most trade-distorting support included in the OECD analysis are government payments that are linked to output that subsidize inputs, all of which are also included in the WTO's amber box. The OECD has estimated that from 2002 to 2004, the value of these forms of support across all OECD members averaged $190 billion annually. The balance of the PSE figures consist of less-distorting forms of support, including both decoupled, green box payments and, more often, blue box payments that have production-limiting elements.

Figure 2.2 Producer support estimate as percent of gross farm receipts , 1986–2004



Note: EU-12 for 1986–94, EU-15 from 1995, European Union includes ex-East Germany from 1990. Austria, Finland, and Sweden are included in the OECD totals for all years and in the European Union from 1995.

Source: Producer and Consumer Support Estimates, OECD database, 1986–2004.

Among the high-income countries, four broad groups, corresponding roughly to negotiating positions in the Doha Round, can be identified in figure 2.2. At the top, providing the highest levels of support, are Switzerland, Norway, Iceland, South Korea, and Japan, all members of the Group of 10 (G-10), which opposes significant liberalization. (The other G-10 members are Bulgaria, Israel, Liechtenstein, Mauritius, and Taiwan.)

Providing the lowest levels of support are Australia and New Zealand, leaders of the Cairns Group of agricultural exporting countries, which has been pushing for deep reforms since the Uruguay Round. Between are the United States and Canada, which are below the OECD average of 30 percent, and the European Union, which is slightly above it.

In dollar terms, the United States and the European Union account for 60 percent of total OECD producer support (table 2.1), and these two remain key players in agricultural trade negotiations. However, the dynamics have changed since the Uruguay Round when they negotiated major components of the URAA bilaterally and then presented the results as a fait accompli to other negotiators. The developing countries that make up the Group

Table 2.1 OECD estimates of support to agricultural procedures, average 2002–04

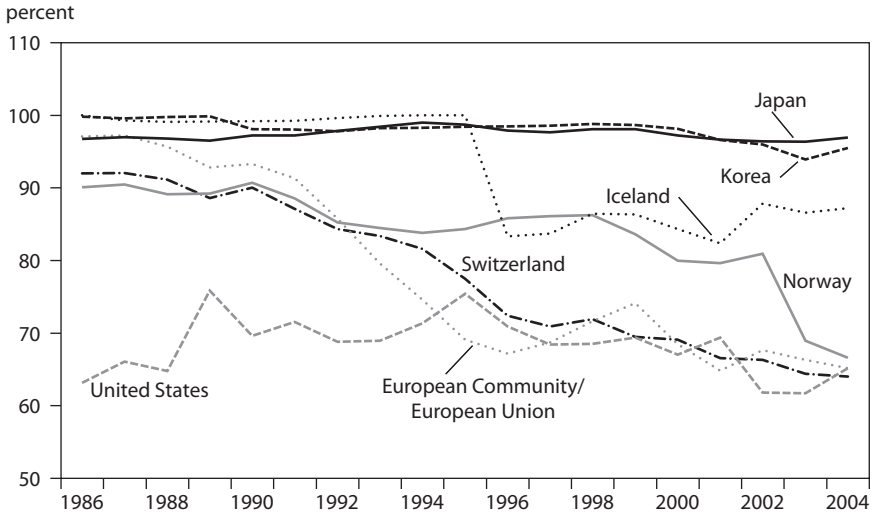
Country	PSE (millions of US dollars)	PSE as percent of gross farm receipts	Percent of PSE that is: Most trade-distorting: Market price support	Most trade-distorting: Output and input subsidies	Less distorting[a]	PSE per hectare[b] (US dollars)	TSE as percent of GDP
Australia	1,068	4.3	0.8	76.0	23.2	2.4	0.3
Canada	5,521	22.3	47.8	9.6	42.6	81.8	0.8
European Union[c]	114,274	34.3	54.6	11.7	33.7	810.5	1.2
Iceland	195	70.3	45.2	42.0	12.8	85.5	2.1
Japan	46,924	57.7	90.1	6.5	3.5	9,041.3	1.4
Korea	18,253	63.1	92.6	2.6	4.9	9,442.6	3.5
New Zealand	186	2.3	82.2	17.2	0.6	10.8	0.4
Norway	2,902	71.3	47.1	25.3	27.6	2,808.8	1.4
Switzerland	5,343	70.5	55.7	9.3	35.1	3,503.4	1.8
United States	40,409	17.0	35.3	27.6	37.1	98.1	0.9
OECD total/average	254,244	30.3	61.3	13.3	25.4	231.9	1.2

PSE = producer support estimate
TSE = total support estimate

a. These subsidies include partially decoupled blue box payments as well as decoupled green box payments.
b. Agricultural land.
c. EU-15 (countries that were EU members as of January 1995); Austria, Finland, and Sweden are included in the OECD and EU totals for all years.

Source: Producer and Consumer Support Estimates, OECD database, 1986–2004.

Figure 2.3 Most trade-distorting support as share of total producer support, 1986–2004



Notes: The most trade-distorting support includes market price support, payments based on output, and payments based on input use. EU-12 for 1986–94, EU-15 from 1995, European Union includes ex–East Germany from 1990. Austria, Finland, and Sweden are included in the OECD total for all years and in the European Union from 1995. The OECD total does not include the six non-OECD EU member states.

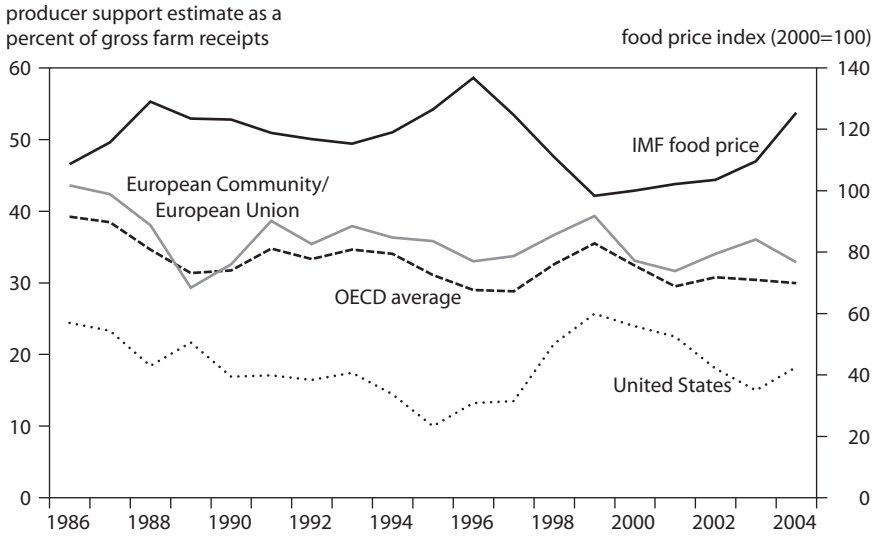
Source: Producer and Consumer Support Estimates, OECD database, 1986–2004.

of 20 (G-20) demonstrated in Cancún in September 2003 that they expect to have their interests considered, and are insisting that the United States and European Union make real and substantial cuts in subsidies and trade restrictions.

Figures 2.2 and 2.3 illustrate the modest gains from the Uruguay Round agreement. Figure 2.2 underscores the fact that there has been relatively little change in overall levels of OECD farm support in most countries and that most of the decline occurred prior to implementation of the agreement. Figure 2.3 indicates that there has been more progress in reducing the most trade-distorting forms of support. The European Union, Switzerland, and Norway have made the most progress by this measure, but trade-distorting support, like support in general, remains at very high levels, particularly in the cases of Switzerland and Norway. Policies in Japan and South Korea have changed very little since the mid-1980s (when the OECD began quantifying them), and they remain both far more costly and more trade distorting than the OECD average.

US farm policy fluctuates more than most. The overall US PSE shows a downward trend in the first half of the 1990s but an upturn after that. The most trade-distorting forms of US support decreased in the second half of

Figure 2.4 Subsidies and prices, 1986–2004



Notes: EU-12 for 1986–94, EU-15 from 1995, including ex–East Germany from 1990. Austria, Finland, and Sweden are included in the OECD total for all years and in the EU from 1995. The OECD total, does not include the six non-OECD European Union member states.

Source: Producer and Consumer Support Estimates, OECD database 1986–2004; IMF's *International Financial Statistics* 2005.

the decade, but Congress soon stepped in with emergency payments when prices dropped. Countercyclical payments, linked to prices but not production, were incorporated into the Farm Security and Rural Investment Act of 2002 as a statutory safety net to replace these ad hoc payments (neither reflected in figure 2.3). Not surprisingly, figure 2.4 shows that even with the reforms that have taken place, US and EU support to farmers has continued to move countercyclically with global prices.

Table 2.2, which shows average agricultural tariffs imposed by OECD countries, illustrates several additional things about OECD protection of member states' farmers. The broad patterns are the same as those reflected in the OECD data, with the G-10 countries having the highest tariffs, Australia and New Zealand the lowest, and the European Union and Canada in between. In this case, average US tariffs place it closer to the Cairns Group exporters, reflecting relatively heavier US reliance on subsidy payments than in the European Union or Canada.

Table 2.2 also highlights two other problems that need to be addressed in the trade negotiations: the use of specific tariffs and tariff escalation. Specific tariffs are less transparent than ad valorem tariffs, and because the protective effect varies inversely with world prices, they also contribute

Table 2.2 Average agricultural tariffs in selected rich countries

Country	Ad valorem tariffs: Average (percent)	Ad valorem tariffs: Percent of tariff lines covered	Ad valorem equivalent of all other duties[a]	Average tariff on raw products	Average tariff on final products	Average tariffs on developing-country exports[b]
Australia	1.2	99	5.0	0.3	2.3	0.8
Canada	3.8	76	n.a.	1.4	6.5	10.8
European Union	10.6	56	35.2	13.2	24.3	34.4
Japan	10.3	86	n.a.	4.2	15.9	158.1
Korea	42.2	98	n.a.	47.8	34.7	n.a.
Norway	8.6	46	n.a.	12.8	2.2	89.4
United States	8.1	60	11.7	5.5	12.6	5.0

n.a. = not available

a. Includes specific, compound, and all other types of duties on imports if countries report ad valorem equivalents of these tariffs.
b. Production-weighted average tariffs applied to developing-country exports.

Note: The first five columns are from data compiled by the World Bank and are applied most favored nation tariffs that do not reflect all tariff-rate quota duties. The last column is compiled by the Center for Global Development from data that include ad valorem equivalents of specific tariffs, efforts to estimate ad valorem equivalents of tariff-rate quotas, and various preference programs.

Sources: Aksoy and Beghin, supplementary CD (2005), and Roodman (2005).

Table 2.3 Tariff escalation on selected products (percent)

	Cocoa and chocolate		Coffee	
Country	**Raw product**	**Final product**	**Raw product**	**Final product**
European Union	0.5	30.6	7.3	12.1
Japan	0	21.7	6.0	18.8
United States	0	15.3	0.1	10.1

Source: Aksoy and Beghin, supplementary CD (2005).

relatively more to volatility in world prices. According to the limited data available, the ad valorem equivalents of specific tariffs also tend to be higher on average, markedly so in the European Union. The United States and Norway are also particularly heavy users of non–ad valorem tariffs, with 40 to 60 percent of agricultural tariff lines being specific or compound (i.e., combining ad valorem and specific components).

When duties are higher on more heavily processed products than on the inputs, this tariff escalation prevents developing-country exporters from being able to develop processing activities themselves. Adding value to primary commodities would create jobs and help to reduce the volatility associated with trade in raw commodities. The US, EU, Canadian, and Japanese tariff structures all show signs of escalation from the raw stage to the processed stage. Table 2.3 illustrates this problem with respect to tropical products that are of particular interest to many low-income countries. The treatment of cocoa is particularly striking because chocolate and other confectionaries with cocoa usually incorporate sugar, which is itself heavily protected.

Finally, the last column in table 2.2 shows average agricultural tariffs against developing countries as calculated by David Roodman for the Center for Global Development's Commitment to Development Index (Roodman 2005). These data are from a different source, are weighted differently than the World Bank data in the rest of the table, and incorporate TRQ duties more fully. With the exception of those for the United States and Australia, the Roodman estimates are substantially higher, but it is not clear that this is primarily the result of discrimination against developing countries. Overall average tariffs applied by industrialized countries to developing-country exports tend to be higher than those applied against other industrialized countries because of the concentration of developing-country exports in the relatively more protected agricultural and textile sectors. Within agriculture, however, industrialized countries provide high levels of protection to dairy, meat, and grains that are exported by other industrialized countries. Thus, the differences shown in the table are more likely the result of the different weights and more effective inclusion of

the ad valorem equivalent impact of TRQs than of implicit discrimination against developing countries.

Patterns of Support Across Commodities

Not surprisingly, government support for farmers varies widely across commodities, as well as countries (table 2.4). Overall, among the commodities analyzed by the OECD, rice and sugar are the most highly supported, but support for these products is concentrated in the European Union, Japan, the United States, and, in the case of rice, South Korea. Dairy products are generously supported by all the rich countries except New Zealand and Australia.[6] "Other grains," beef, and wheat are also both generously and broadly supported by OECD governments, while poultry, eggs, pork, oilseeds, and "other products" are supported by several of these countries, but generally at more modest levels.

US cotton subsidies have received much attention in recent years, but unfortunately the OECD does not provide estimates for this product. Because the OECD publishes the methodology it uses, it is possible to approximate a PSE for cotton growers. The calculations in appendix 2A suggest that cotton receives generous public support—less than sugar, but about as much as dairy and much more than other commodities. In the peak subsidy year of 2001–02, US cotton growers received government price support and subsidies that was roughly equal in value to what an undistorted market would have provided, leading to a PSE equal to 52 percent of gross farm receipts (including the value of government support).

Table 2.5 provides a variety of evidence on protection in the three largest markets and suggests which products each country is likely to try to shelter from deep cuts in the Doha Round. The bottom row shows overall averages for agriculture. The production-weighted averages are *applied* tariffs against developing countries, while the mean and median figures are unweighted simple averages of all *bound* tariff lines. The median tariff for all three markets suggests that most agricultural tariffs are relatively low and that the high means are explained by a relatively small number of very high tariffs. The differences between these estimates and the higher average applied tariffs are, again, most likely due to the use of production weights and more effective inclusion of TRQs.

The rest of table 2.5 shows the production-weighted average and the incidence of TRQs by commodity. These show the same basic pattern as the OECD data for all producer support. Sugar and dairy products are pro-

6. Although to a far lesser degree than most other countries since it undertook reforms several years ago, Australia still provides support to dairy at a level nearly four times its overall producer support average.

Table 2.4 Producer support estimates by country and commodity, average 2002–04
(percent of farm receipts, including budget support)

Commodity	OECD average	Australia	Canada	EU-15[a]	Iceland	Japan	Korea	New Zealand	Norway	Switzerland	United States
Rice	76	6	n.a.	35	n.a.	83	77	n.a.	n.a.	n.a.	33
Sugar	55	11	n.a.	60	n.a.	64	n.a.	n.a.	n.a.	77	57
Milk	42	15	58	40	80	73	61	1	76	73	40
Other grains	42	3	16	50	n.a.	81	78	0	71	67	34
Beef, veal	35	4	21	73	47	32	63	1	82	74	4
Wheat	35	4	17	43	n.a.	85	n.a.	0	68	59	30
Sheepmeat	38	4	n.a.	53	57	n.a.	n.a.	0	68	54	15
Other	25	2	24	21	n.a.	51	n.a.	2	63	66	16
Pork	21	3	9	24	39	47	33	0	61	68	4
Maize	25	n.a.	15	39	n.a.	n.a.	n.a.	0	n.a.	67	20
Oilseeds	23	3	15	37	n.a.	57	89	n.a.	n.a.	84	18
Poultry	18	3	5	40	86	11	38	48	73	85	4
Eggs	7	3	11	2	70	16	19	31	43	75	4
Wool	6	4	n.a.	n.a.	45	n.a.	n.a.	0	83	n.a.	24
Average	30	4	21	33	69	56	63	3	68	68	18

n.a. = not applicable

a. EU-15 (countries that were EU members as of January 1995); Austria, Finland, and Sweden are included in the OECD totals for all years and in the European Union from 1995.

Source: Producer and consumer support estimates, OECD database, 1986–2004.

Table 2.5 Average applied tariffs, tariff peaks, and tariff-rate quotas (TRQs), 2001

	European Union			Japan			United States		
Commodity	**Weighted average applied tariff**	**Number of TRQs**	**Number of tariff lines under TRQ**	**Weighted average applied tariff**	**Number of TRQs**	**Number of tariff lines under TRQ**	**Weighted average applied tariff**	**Number of TRQs**	**Number of tariff lines under TRQ**
Sugar	90.4	3	7	227.0	0	0	24.2	6	16
Dairy	38.0	12	51	82.4	10	56	16.7	24	97
Beef, sheepmeat	75.8	15	51	38.2	0	0	2.6	1	1
Pork, poultry, other meat	15.2	13	66	36.5	0	0	3.3	0	0
Rice	110.8	3	3	886.7	1	17	5.2	0	0
Wheat	0.7	2	2	214.4	1	23	3.2	0	0
Corn, other grains	17.2	10	12	53.2	1	12	0.9	1	0
Fruits, vegetables, nuts	19.1	15	33	21.4	3	9	5.0	5	6
		Mean bound tariff (unweighted)	**Median bound tariff** (unweighted)		**Mean bound tariff** (unweighted)	**Median bound tariff** (unweighted)		**Mean bound tariff** (unweighted)	**Median bound tariff** (unweighted)
All agricultural	34.4	30.0	13.0	158.1	58.0	10.0	5.0	12.0	3.0

Sources: Roodman (2005) and Gibson et al. (2001).

tected by high tariffs and, in the United States and the European Union, by TRQs. Negotiators representing rich countries are likely to seek more lenient treatment for these sectors, as well as beef in the European Union, and rice and other grains in Japan. An important question is whether the European Union will also try to shield fruits and vegetables, which are subject to moderate average tariffs but are also protected by TRQs.

Implications for the Doha Round

The United States and the European Union account for 60 percent of the dollar value of OECD agricultural support, but Switzerland, Norway, Iceland, South Korea, and Japan provide by far the most support relative to farm receipts (see table 2.1). Japan and South Korea also provide by far the most support per hectare of farmland, while Switzerland and Norway far surpass most other OECD countries on this measure. Thus, the G-10 countries have primarily defensive interests in the Doha Round agriculture negotiations. Australia and New Zealand are at the other end of the spectrum, with PSEs under 5 percent. Along with other members of the Cairns Group and the G-20, they are pushing an offensive agenda on agriculture.

The European Union and the United States, however, are the two big players in the negotiations. In addition to providing 60 percent of overall producer support, they account for more than 80 percent of subsidies because most other rich countries provide support primarily through border measures (OECD 2005a). They are also among the heaviest users of specific tariffs and impose escalating tariffs on products of interest to low-income countries. Like those representing the G-10, the EU negotiators have primarily defensive interests. But they also realize that the Doha Round will fail unless they make concessions on agriculture, and they also have internal reasons to undertake Common Agricultural Policy reform (see chapter 3). US negotiators have mixed interests in the agriculture negotiations: While they wish to increase access for competitive US exporters (including in the larger middle-income developing countries), they also face political pressure to maintain subsidies and protection for less competitive sectors such as sugar. As in the Uruguay Round, concessions by the two biggest players will be the key to a successful negotiation on agriculture. Brazil, India, and the other members of the G-20 group of developing-country exporters will insist on it.

Appendix 2A
Producer Support Estimate for US Cotton

According to *Methodology for the Measurement of Support and Use in Policy Evaluation* (OECD 2002), the producer support estimate (PSE) can be calculated as the sum of

- market price support (MPS);
- payments based on output;
- payments based on area planted or animal numbers;
- payments based on historical entitlements;
- payments based on input use;
- payments based on input constraints;
- payments based on overall farming income; and
- miscellaneous payments.

Using the information provided in a World Bank report (Baffes 2005), it is possible to use this method to obtain an estimate of the PSE for US cotton producers.

Three important assumptions underlie the calculation using these data:

- Step-2 payments are used as a proxy for MPS. These are subsidies paid to exporters and domestic end users of cotton to compensate them for higher US cotton prices when they exceed a Northern European reference price. If the latter is similar to the world price, Step-2 payments would be similar to total production times the difference between domestic and world prices (the definition of MPS).
- The data contain all forms of direct support to cotton producers in the United States.
- Though CCPs do not fit exactly in the categories used regularly by the OECD, its current approach is to include them in the payments based on area planted.

These estimates can then be used to calculate the percentage PSE (%PSE) and the nominal assistance coefficient (NAC). These measures are defined by

$$\%PSE = PSE/(Q.Pp + PP) \times 100$$

$$NAC = [100 \times 1/(100 - \%PSE)]$$

Where

PP = Payments to producers = PSE – MPS,

and

(Q.Pp = value of production at producer prices
(not including output payments).

Table 2A.1 Government assistance to US cotton producers, 1995–2003 (millions of US dollars)

Policy instrument	PSE category	1995–96	1996–97	1997–98	1998–99	1999–2000	2000–2001	2001–02	2002–03
Coupled payments	B, E	3	0	28	535	1,613	536	2,507	248
PFC/DP	D	0	599	597	637	614	575	474	914
Emergency/CCP	C	0	0	0	316	613	613	524	1,264
Insurance	C	180	157	148	151	170	162	236	194
Step-2	A	34	3	390	308	422	236	196	455
PSE[a]		**217**	**759**	**1,163**	**1,947**	**3,432**	**2,122**	**3,937**	**3,075**

PFC/DP = production flexibility contracts/direct payments
CCP = countercyclical payments
PSE = producer support estimate

a. Except for 2002–03, where I added data for the Step-2 program, it is unclear why the total payments are not the same as reported in Baffes (2005).

Sources: Baffes (2005, 265) and US Department of Agriculture.

Table 2A.2 Percentage PSE and NAC calculation, 1995–2003

	1995–96	1996–97	1997–98	1998–99	1999–2000	2000–2001	2001–02	2002–03
Farm price (cents per pound)	70.5	66.2	61.7	46.8	51.6	32.0	45.7	63.2
Production (millions of pounds)	9,092.0	9,021.0	6,681.0	8,145.0	8,250.0	9,745.0	8,260.0	8,762.0
Q.Pp (millions of US dollars)	6,410.0	5,972.0	4,122.0	3,812.0	4,257.0	3,119.0	3,775.0	5,538.0
PP (millions of US dollars)	183.0	756.0	773.0	1,639.0	3,010.0	1,886.0	3,741.0	2,620.0
%PSE	3.3	11.3	23.8	35.7	47.2	42.4	52.4	37.7
NAC	1.0	1.1	1.3	1.6	1.9	1.7	2.1	1.6

Q.Pp = value of production at producer prices (not including output payments)
PP = payments to producers (PSE–MPS)
PSE = producer support estimate
NAC = nominal assistance coefficient
MPS = market price support

Source: Table 2A.1 and US Department of Agriculture.