The Costs of Agricultural Policy Distortions

Global agricultural policy distortions impose substantial costs on the world economy. Agricultural tariffs, domestic support, and export subsidies leave world agricultural prices about 12 percent below levels otherwise expected. Over the long term (about 15 years), these distorting farm policies will reduce world welfare, or consumer purchasing power, by $56 billion annually, which represents about 0.2 percent of global GDP (table 4).

As measured by world price effects, a small number of countries cause most of the agricultural market distortions — developed economies account for nearly 80 percent of the distortions. The EU accounts for 38 percent of world price distortions, compared to Japan plus Korea (12), the United States (16), and Canada (2) (table 5). Countries typically use different mixes of policies. The EU accounts for over 90 percent of global export subsidy expenditures; these subsidies are an integral part of its domestic price support system. The EU and the United States account for most of the global distortions related to domestic producer support. Most other countries rely mainly on tariffs to support their farm sectors. Particularly in developing countries, tariffs are a more practical farm support policy because they raise government revenue, while domestic programs entail government expenditure. Tariffs are a potentially more distorting type of farm support than domestic producer subsidies, because they directly affect consumers as well as producers.

What is "welfare"?

Welfare is an aggregate indicator for the world and for individual countries. Trade policy reforms allow resources to shift into the production of commodities in which the country holds a comparative advantage, and allows consumption to shift toward goods desired by consumers. Increased production efficiency leads to higher incomes, lower prices, and increased purchasing power. Consumption changes reflect a better match of the availability of products with consumer preferences. Despite higher world prices for food, most consumers will still benefit because consumer prices will fall in countries where the removal of tariffs more than offsets the change in world prices. The measure of welfare is "equivalent variation," a measure of the dollar equivalent of an effective change in national income, or purchasing power, due to the policy reform.

Table 4—Welfare impacts from elimination of global agricultural tariffs and subsidies

	Static	Static plus dynamic	
	Resource allocation gains	Investment growth gains	Investment growth plus productivity gains
		$US billions	
World	***31.1***	***36.3***	***56.4***
Developed country group	***28.5***	***29.7***	***35.1***
Australia and New Zealand	1.6	3.4	3.5
Canada	0.8	1.2	1.4
EFTA	1.7	0.1	0.2
European Union	9.3	8.2	10.6
Japan and Korea	8.6	5.1	6.2
United States	6.6	11.8	13.3
Emerging and developing country group	***2.6***	***6.5***	***21.3***
China	0.4	1.8	2.23
Latin America	3.7	4.7	6.1
Mexico	-0.2	0.1	1.6
Other Asian countries	1.5	0.3	5.11
South African countries	0.3	0.5	0.8
Rest of world	-3.1	-0.4	5.4

Static gains refer to the annual gains due to removing distortions to production and consumption decisions in 1997 $US billion. Dynamic gains include effects related to cumulative increases in savings, investment, and productivity over a 15-year post-reform period. Dynamic welfare impacts are the annual level about 15 years after reform.

Source: Diao, Somwaru, and Roe (2001).

Table 5—Effects on world agricultural prices of eliminating agricultural policy distortions, by country and policy

	World	U.S.	EU	Japan/Korea	LDC's
Elimination of:			*Percent change from base price*		
All policies	11.6	1.8	4.4	1.5	2.3
Tariffs	6.0	0.7	1.5	1.4	2.3
Domestic support	3.6	0.9	2.0	0.2	Na
Export subsidies	1.5	0.1	0.9	Na	0.0

Na = not applicable, no policy in use. Numbers do not sum to row and column totals because only selected countries are included and there are interaction effects among policies.
Source: Diao, Somwaru, and Roe (2001).

The Benefits from Eliminating Agricultural Policy Distortions

There are two dimensions in calculating the potential welfare gains following policy reform: static gains and dynamic gains. The first is related to removing distortions in consumption and production decisions. "Static" gains accrue after producers and consumers fully adjust to price changes when tariffs and subsidies are removed. These static welfare gains accrue over time and reflect changes in income (wages, land rents and returns on capital investments) due to increased economic efficiency. These static gains in welfare, or purchasing power, are worth about $31 billion to the world economy. Most of the static gains from trade liberalization accrue to countries with the largest initial policy distortions. Developed countries receive most of the global, static welfare gains from full policy reform ($28.5 billion), compared to the potential welfare gains for emerging and developing countries of about $2.6 billion. Despite higher world food prices, consumers in most countries would still benefit from the reforms because tariff elimination lowers the consumer price of imported foods, and the policy reforms produce overall economic efficiency gains in their economies. Some food-importing countries face static welfare losses from full trade liberalization because they do not have large initial policy distortions and they must pay higher world food prices.

Additional global benefits from full policy reform will come from the "dynamic," long-term effects from increased savings and investment as policy distortions are removed, and from the opportunities for increased productivity that are linked to more open economies. When these potential dynamic gains are taken into account, all countries can benefit from global policy reforms. Reforms lead to higher investments by increasing the potential returns. Higher investment increases the productive capacity of economies. The greater openness of economies can lead to higher productivity, especially in developing countries where there is substantial potential for productivity gains from increased training and the technological change that is embodied in investment goods imported from developed countries. Reflecting their greater dynamic potential for growth, developing countries stand to attract increased global investment, which will benefit developing countries by increasing their resource availability and benefit developed countries by creating investment opportunities. Investment growth and productivity gains due to agricultural policy reform account for 45 percent of the total benefits from full trade liberalization.

Whereas developed countries will accrue most of the static gains, emerging and developing countries will accrue most of the potential dynamic gains from full trade liberalization. Developing countries, even food importing ones, can expect to benefit if the negotiations eliminate global policy distortions. But, it is developing countries' own, full participation in global reforms, especially the reduction of their own barriers to imports, that is their most important source of potential benefits from global agricultural negotiations. In the long term, developing countries' welfare could increase by $21 billion annually—nearly 40 percent of the potential world welfare gain from agricultural policy reform.

Nearly one-quarter of the global welfare benefits ($13.3 billion annually) would accrue to the United States. Because U.S. tariffs, domestic support, and export subsidies are relatively low, most of the benefits for the United States come from our trade partners' policy reforms. Although dynamic gains will not directly create many benefits for the United States, mainly because of its technological maturity, U.S. agriculture will benefit substantially from the dynamic gains in developing countries. These countries are important U.S. export markets whose demand for U.S. farm products will increase further if their economies realize their growth potential. In the long run, full poli-

cy reform could lead to an increase in the real value of U.S. agricultural exports of 19 percent each year, an increase in agricultural imports of 9 percent, and higher world prices for U.S. exports.

Tariffs Are the Most Distorting Policy, Compared to Domestic Support and Export Subsidies

The full elimination of agricultural tariffs, domestic subsidies, and export subsidies would increase world agricultural prices 12 percent above their expected level (table 5). Eliminating tariffs, which distort both consumers' choice and producers' decisions, would account for most (52 percent) of the potential price increase. Eliminating the agricultural tariffs of the EU alone accounts for 25 percent of the tariff-induced price effects. Agricultural tariffs in Japan plus Korea, and in the United States, account for 23 percent and 12 percent, respectively, of the tariff-linked price distortions. Tariffs in developing countries account for 38 percent of the tariff-linked effects on world agricultural prices.

The relatively large role of tariffs in global policy distortions should be interpreted in terms of tariffs' links with domestic support. Tariffs are a trade policy that provides a margin of protection to domestic producers. By restricting imports, tariffs are also an instrument of domestic support. Tariffs can help to support domestic prices at above world price levels without the need for government outlays on price support payments or stock building. Most countries' domestic price support programs have a greater reliance on tariffs, which increase government revenues, than on domestic subsidy expenditures, such as deficiency payments, which must be financed through government budgetary outlays. The AMS accounts for this link by including the effects of trade policies (measured as a price gap between an administered support price and the fixed world reference price) in the calculation of domestic support. Removing tariffs alone can therefore accomplish both trade liberalization as well as a reduction in the value of domestic support.

This analysis of domestic *subsidies* includes only budgetary outlays on output and input subsidies and farm payments. This is a more narrow measure of domestic *support* than the AMS, which also includes the effects of trade policies. But to include the market price sup-

Effects of assumptions about decoupling on the analysis

Since the Uruguay Round concluded, some countries have adopted less distorting farm programs that meet the criteria in Annex 2 of the URAA for being exempted from WTO disciplines. The U.S. Production Flexibility Contract (PFC) payments provided under the 1996 Fair Act are an example of exempt payments to farm households. These whole-farm payments are not linked to production of specific crops and so do not create inter-crop distortions. Farmers make their crop mix decisions in response to market price signals. But as experience with these programs grows, the extent to which farm household transfer payments may affect aggregate, total farm production has become the subject of debate. Tielu and Roberts (1998) describe several ways in which payments that are "decoupled" — meaning that they do not directly depend on or influence farmers' production decisions — may still stimulate aggregate production: Payments may lead to increased farm investment by increasing wealth and lowering risk. Payments can reduce farm exit by raising land values, and may encourage continued output by creating expectations of future payments. There is limited empirical research suggesting that the aggregate output effects linked to the effects of wealth on investment and risk are likely to be small (Young and Westcott, 2000; Burfisher, Robinson, and Thierfelder, 2000). In this report, we assume that transfer payments to farm households have minimal output effects. We only account for the indirect effects that these payments may have on farm output through their effects on raising household income and aggregate demand for all commodities, including food. To see how important this assumption is, we analyze the effects on the aggregate world agricultural price due to the removal of all domestic subsidy expenditures by developed countries. We compare the effects when using our assumption that transfer payments have minimal output effects, with the extreme assumption that these payments are fully coupled output subsidies. They are assumed to directly stimulate increased output by increasing the returns to commodities, with our commodity allocation of whole farm payments based on their commodity-linked allocation in the OECD PSE database. We find that the assumption about coupling has small effects on the results of our analysis. The world agricultural price index from a full domestic subsidy removal by developed countries would increase 4.8 percent if the transfer payments are considered to be fully coupled, compared to an increase of 3.6 percent if they are minimally coupled. The small difference in effects due to extreme assumptions about the degree of coupling of household payments suggests that the potential benefits from reducing these kinds of programs may be quite small.

port component of the AMS would be to double-count the effects of tariffs and export subsidies. Domestic subsidies have a smaller role than tariffs in causing distortions from agricultural policies, accounting for 31 percent of the total agricultural price impacts of the three policies. One reason is because domestic production subsidies are less distorting than tariffs. They distort only the production decision and have only indirect effects on consumers. Also, there has been a shift in the way that some countries provide domestic subsidies to farmers. The provision of subsidies to farmers through output or input subsidies has declined, while the use of less distorting, green box policies such as direct transfer payments to farmers has increased. Transfer payments to farm households have smaller effects on farm output than production or input subsidies. Furthermore, we analyze the elimination of domestic subsidies in member countries of the OECD only, because data on domestic subsidies in other countries are not available. This does not bias the analysis very much, since the use of domestic subsidies in non-OECD countries is limited.

The EU has a relatively high level of distorting domestic agricultural subsidies. This characteristic, plus the EU's importance in world markets, accounts for its large role (56 percent) in causing the world price distortions due to domestic subsidies.[2] U.S. domestic programs account for 25 percent of the global price distortions caused by domestic subsidies.

[2]EU compensatory farm payments are linked to set-aside requirements. These requirements are represented in the model by increasing the agricultural land area by 10 percent when these blue box programs are removed. EU dairy subsidies are included in this global analysis, but excluded in the country study of EU export subsidy elimination described later in this report.

Export subsidies account for a relatively small share (13 percent) of the total price distortions caused by agricultural tariffs and subsidies. Most of the world price effects from eliminating export subsidies are due to EU liberalization, reflecting that the EU accounts for most of world export subsidy expenditures.

Despite their relatively small aggregate price effects, export subsidies play an important role in the reform process. Tariffs and domestic support policies of many countries contribute to distorted global markets. The global effects of export subsidies, however, are mostly attributable to a single region, the EU. Export subsidies significantly affect trade in some markets, create increased competition that strains trade relationships, and are an integral part of related domestic price support programs.

The separate roles of tariffs, domestic subsidies, and export subsidies in distorting world prices add up to less than 100 percent of the total price distortion of all policies; the simultaneous removal of all three policy types additionally takes into account their interactions.

Commodity Impacts of Full Agricultural Policy Reform

The aggregate agricultural price impact (12 percent) can be broken down by commodity and by policy type (table 6). The largest increases in world price, above trend levels, will occur in livestock and products (including dairy products), wheat, sugar, and other grains. Elimination of tariffs alone will have the greatest effect on livestock and sugar prices, while the elimination of domestic subsidies will affect mainly wheat and other grains. Export subsidies have depressed global prices mainly for sugar, livestock and products (including dairy products), fruits and vegetables, and wheat.

Table 6—Increase in world prices resulting from the elimination of all policy distortions, by commodity and policy

Commodity	Full policy elimination	Global tariff removal	OECD domestic subsidy removal	Global export subsidy removal
		Percent change from base		
Wheat	18.1	3.4	12.0	2.0
Rice	10.1	5.9	2.4	1.5
Other grains	15.2	1.4	12.2	0.6
Vegetables and fruits	8.2	4.9	-0.1	3.0
Oil and oilseeds	11.2	3.1	7.8	0.1
Sugar	16.4	10.9	1.6	3.3
Other crops	5.6	4.2	1.2	0.1
Livestock and products	22.3	12.2	5.5	3.1
Processed foods	7.6	4.8	1.8	1.0

Source: Diao, Somwaru, and Roe (2001).