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Chapter 6

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Chapter 6 Agricultural Policies in Industrial Countries

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6.1 In the United States, the government pays farmers not to grow grain; in the European Communities farmers are paid to grow more. In Japan, rice farmers receive three times the world price for their crop; they grow so much that some of it has to be sold as animal-feed--at half the world price. During 1985, in the EC, farmers received 18¢ per pound for sugar that was then sold on the world markets at 5¢ per pound; at the same time, the EC imported sugar at 18¢ per pound. Milk prices are kept high in nearly every industrial country, with a resulting sea of surpluses: Canadian farmers will pay up to eight times the price of a cow for the right to sell that cow's milk at the government's support price. The United States subsidizes irrigation and land clearing projects--and then pays farmers not to use that land for growing crops.

6.2 Why do these anomalies come about? And what costs do they impose on the industrial countries that implement the policies and on the developing countries that are harmed by them? This Chapter addresses those two questions.

6.3 The first section explains the characteristics of agricultural policies in developed countries and shows that though their main aim is simple--to support farmers' incomes--the results have been tangled. As each policy fails, a new one is added, increasing administrative complexity, raising costs and making agriculture more and more subject to political rather than economic decisions.

6.4 The second section counts the costs and benefits of these policies to industrial countries and concludes that while they have surprisingly little long-term effects on farmers' incomes, they impose heavy costs on taxpayers

and consumers. The net costs are so large--perhaps $40 billion per year in industrial countries--that changing the policies could provide a substantial boost to the world economy.

6.5 Lastly, the Chapter examines the impact of industrial countries' agricultural policies on developing countries. Though some developing countries suffer less than others, farming is hurt in all of them. Prices for tropical products are depressed, industrialized countries import less and their exports even undercut developing countries' farmers in their own markets.

The characteristics of agricultural policy

6.6 The main aim of agricultural policies in industrial countries is to stabilize--which usually means increase--farmers' incomes and to retard pressures for people to move out of the sector. Technical and economic change can disrupt the farm economy. Most agricultural policies, therefore, initially try to stop or offset the effects of change, usually by supporting agricultural prices.

6.7 Agricultural policies have subsidiary aims: guaranteeing consumers supplies of food, preventing environmental damage to the country-side, and preserving the traditional unit of farming--usually the family farm. Guaranteeing food supplies usually goes hand in hand with stable and "reasonable" food prices. This is often invoked to justify policies which encourage self-sufficiency, particularly in countries which experienced food shortages in time of war.

How policies evolve

6.8 Though the aims are simple, the results are not. In even the most market-oriented industrial countries, there are many controls on agricultural

prices, outputs, acreages, and on international trade. Agricultural policies do not change in response to each new economic shock or shift in priorities. They evolve slowly, balancing a variety of often conflicting interests: the legacy of past policies, the political influence of farm lobbies, the constraints arising from public spending limits, administrative convenience, and international treaty obligations. And, while the most efficient way of raising farmers' incomes may be by direct income supplements, governments almost invariably try to do so by means of agricultural price supports. Within that broad approach, however, there are different policies for different circumstances:

o If a country has a large enough share of the world market to influence the price, net importers will favor policies that reduce world prices; net exporters favor the opposite. The EC--a large importer of cereals when its common agricultural policy was designed--protects grain producers by tariffs and import levies which tend to depress world prices; the United States, currently the world's biggest grain exporter, imposes acreage controls that tend to raise prices. If international trade in a product is minimal, border measures have to be supplemented by internal measures to boost domestic demand or supply.

o If public spending limits are tight, governments will, other things being equal, favor import taxes over export subsidies. Both drive a wedge between domestic and world prices. But while import taxes earn revenue for the government, export subsidies absorb it.

o Some kinds of markets are easier to support than others. Support is easiest and cheapest for crops and products in which supply and demand is inelastic. As a rule of thumb, land-intensive products have lower short-run elasticities of supply than others. It is no coincidence that governments

intervene more often in the market for cereals than in poultry and pork. Administrative convenience is also important. More complicated rules are needed if products are heterogeneous and markets geographically widespread. Governments control the prices of fruit and vegetables less easily than they can cereals, sugar, and milk. Sugar and milk must pass through one of a small number of processing factories which allow governments to monitor output relatively easily.

o International commitments sometimes constrain domestic policies. Before the EC was formed, some members had promised GATT they would maintain low tariffs on imports of tapioca. The EC agreed to abide by these promises --at great cost. Livestock farmers naturally preferred to feed animals cheap foreign tapioca rather than expensive domestic cereals. But recently the EC has negotiated export restraint agreements with suppliers of tapioca.

o The legacy of past policies weighs heavily upon current ones. Policymakers are averse to dismantling an administrative machinery that has been laboriously constructed. Farm interest groups are adept at defending gains from previous policies. If a policy fails, it is rarely abolished. Instead, a new policy is introduced to offset its shortcomings. During the 1970s, improvements in technology reduced dairy costs below official milk support prices. Governments found themselves flooded with milk surpluses and spending soared, increasing sixfold between 1974 and 1984 in the EC and by two and a half times between 1970 and 1976 in Switzerland. Rather than lower prices and let consumers benefit from the technical progress, however, governments have attempted to limit the amount of milk sold at guaranteed prices (see Box 6.1).

How much protection?

6.9 The first and most obvious effect of industrial countries' agricultural policies is to raise domestic prices. Domestic prices often exceed border prices (world prices allowing for transport to the country concerned). Estimates of nominal protection coefficients--domestic prices divided by border prices--for several industrial countries and areas are shown in Table 6.1.

6.10 The estimates need to be treated with caution. With variable world prices but relatively stable domestic ones, nominal protection coefficients vary widely over time. Table 6.1 shows values for 1980-82, but in 1985 protection was typically greater because world market prices were lower. Domestic prices can be measured at many stages: the farm-gate, intervention board, or wholesale markets; different countries measure at different stages making comparisons difficult. Qualities and varieties of commodities also vary. Because these policies affect world prices, the estimates do not measure what would happen to world prices if the policies were abolished. Finally, nominal protection coefficients do not measure those internal policies that are not supported by border policies, for then domestic prices and world prices are equal. For example, U.S. acreage controls raise maize prices, but affect both internal United States and border prices equally.

6.11 Nonetheless certain conclusions may be drawn from the table. First, dairy farmers receive generous support nearly everywhere; so do rice and sugar producers. Second, Japanese and European farmers are more highly protected than farmers in traditional agricultural exporting countries. Third, countries protect their farmers in different ways, which implies that internal

Table 6.1 Nominal protection coefficients for producer and consumer prices of selected commodities in industrial countries, 1980-82

Country	Wheat		Coarse grains		Rice		Beef and sheep		Pork and poultry		Dairy products		Sugar		Weighted average[a]	
	Producer NPC	Consumer NPC	Producer NPC	Consumer NPC	Producer NPC	Consumer NPC	Producer NPC	Consumer NPC	Producer NPC	Consumer NPC	Producer NPC	Consumer NPC	Producer NPC	Consumer NPC	Producer NPC	Consumer NPC
Australia	1.04	1.08	1.00	1.00	1.15	1.75	1.00	1.00	1.00	1.00	1.30	1.40	1.00	1.40	1.04	1.09
Canada	1.15	1.12	1.00	1.00	1.00	1.00	1.00	1.00	1.10	1.00	1.95	1.95	1.30	1.30	1.17	1.16
EC	1.25	1.30	1.40	1.40	1.40	1.40	1.90	1.90	1.25	1.25	1.75	1.80	1.50	1.70	1.54	1.56
Other Europe[b]	1.70	1.70	1.45	1.45	1.00	1.00	2.10	2.10	1.35	1.35	2.40	2.40	1.80	1.80	1.84	1.81
Japan	3.80	1.25	4.30	1.30	3.30	2.90	4.00	4.00	1.50	1.50	2.90	2.90	3.00	2.60	2.44	2.08
New Zealand	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
United States	1.15	1.00	1.00	1.00	1.30	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.40	1.40	1.16	1.17
Weighted average	1.19	1.20	1.11	1.16	2.49	2.42	1.47	1.51	1.17	1.17	1.88	1.93	1.49	1.68	1.40	1.43

a. Averages are weighted by the values of production and consumption at border prices.
b. Austria, Finland, Norway, Sweden, Switzerland.

Source: Tyers and Anderson, 1986 (background paper).

relative prices vary too. Even within countries, therefore, there are distortions as farmers react to policy-determined prices rather than to indicators of scarcity and opportunity.

Variable import levies and export restitutions

6.12 Behind these complexities lies a distinction between border measures, which act on imports and exports, and domestic measures, which directly affect internal supply and demand. Take border measures first. The simplest border measure for an importer is the tariff, that is, an import tax, or for an exporter, the export subsidy. Matters are rarely that simple. For many crops variable tariffs--or import levies--and variable subsidies--called export restitutions--are more common.

6.13 Variable levies are the cornerstone of the EC's common agricultural policy (CAP). They are also used by other European countries (Austria, Sweden, and Switzerland). They make up the difference between the price of imports delivered at the port and an officially fixed "entry" price at which foreign goods can be sold. The entry price--known in the EC as the "threshold price"--represents the minimum price of imports to domestic users. Domestic prices are fixed annually by the agriculture ministers of the member states. The cost of threshold pricing is variable because world prices and exchange rate change but domestic prices are fixed so long as imports continue and the domestic price is above the border price.

6.14 Variable levies are popular because they insulate farmers and consumers from world markets. But such insulation is costly. Consumers continue to buy goods whose world prices have risen sharply; producers continue to produce goods whose prices have fallen. Importers cannot therefore take advantage of changing world prices. Worse, by isolating a part of world consumption and production from world prices, variable levies reduce

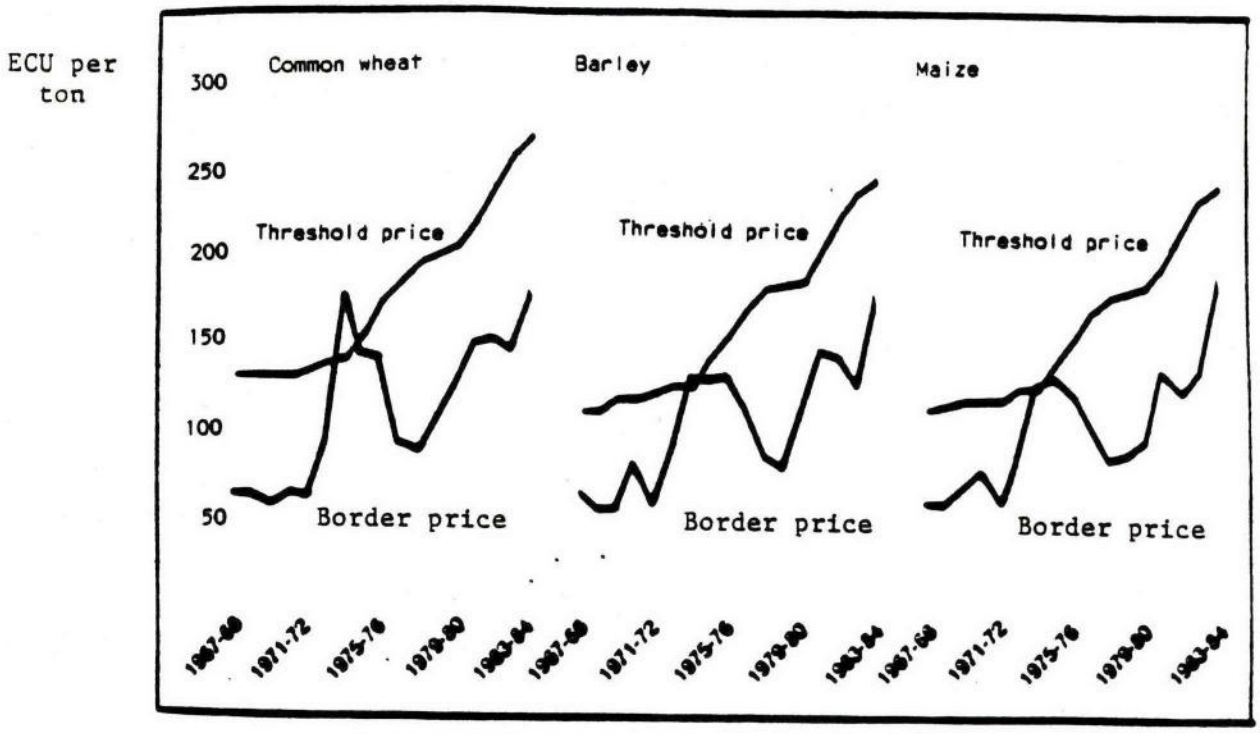
the efficiency and stability of world markets. Box 6.2 suggests that at least 25 percent of the instability of world sugar prices is due to the industrial countries' sugar policies.

6.15 Export restitutions are the exporter's equivalent of variable levies. They fix domestic prices independently of world prices and above them. The result is to depress and destabilize world prices. Although the effect is equivalent to that of an import levy, export restitutions are less widespread. Indeed, the most common origin of an export restitution is as a prop to an over-extended system of import levies: having introduced levies to protect local farmers from cheap imports, governments have found themselves accumulating surpluses as the high level of support has led domestic production to outstrip demand. Unable to abandon price support for political reasons, they resort to export restitutions to dispose of these surpluses abroad. The best-known example is that of the EC, which switched from being a large-scale grain importer in the 1960s to a big exporter in the early 1980s. This did not result from any comparative advantage in cereal production.

6.16 Export restitutions entail the same costs as import levies, but can be even more difficult to administer--especially when, as in the EC, the restitution varies according to the destination of the exports. Moreover, they are a drain on the public purse rather than a contribution to it. This often leads to a reduction in the level of price support as products switch from imports to exports. For example, the EC's support prices increased by an average 0.3 percent annually in real terms between 1973 and 1978, but fell by 1.1 percent per year between 1979 and 1986 when surpluses and the need for restitutions grew.

6.17 Variable levies and export restitutions can be high. Sweden's levies raise domestic beef prices to about 250 percent of world prices. Figure 6.1

Figure 6.1 Threshold and border prices for selected grains in the EC, 1967-84



Source: Bureau of Agricultural Economics, Australia (1985), p. 177.

shows the gap between threshold and border prices in the EC for grains since 1967. In 1982-83 the cereal regime alone is estimated to have transferred 7.9 billion European current units (ECUs) ($8.9 billion) from consumers and ECU 2.3 billion from taxpayers to producers.

6.18 Tariffs. Tariffs are less common than levies in agricultural trade. They do not stabilize domestic prices and cannot guarantee farm incomes, even in the short term, because internal prices vary along with world prices. High tariffs tend to be limited to markets which are either too heterogeneous for variable levies or were not deemed important enough when the policies were introduced. Most developed countries apply tariffs to fruit and vegetables; tariffs are also fairly common on meat products, oilseeds and tobacco. They are also relatively more important in the protection of processed agricultural goods and tend to rise with the degree of processing. This severely reduces developing countries' ability to establish processing industries.

6.19 Import quotas. An import quota restricts imports of a product to a specified quantity or value (sometimes zero). Quotas are commonly imposed on dairy products, sugar, beef, vegetables, and fruit, and are applied by a wide range of countries including the EC, Canada, Japan, Switzerland, and the United States. Import quotas are sometimes dressed up as "voluntary" export restraint agreements between exporting and importing countries. Examples include Australia's dairy imports from New Zealand and U.S. beef imports from everyone. They are sometimes associated with special trade schemes in which both the price and quantity of imports are fixed--for example, the United States' imports of sugar from the Caribbean and the EC's imports of beef and sugar from certain developing countries.

6.20 Like variable import levies, quotas isolate a country from changes in the world markets and raise domestic prices. They can be even more costly. First, because the difference between domestic and border prices may be captured by exporters rather than by the government as tariff revenue. Second, because quotas on exports from different countries almost inevitably fail to reflect changes in costs so that imports may not come from the cheapest sources.

6.21 A prominent set of import quotas are those on rice and beef imports in Japan (see Box 6.3). Behind very tight quotas, the Japanese government has raised domestic producer prices to around three times world prices. These prices have generated large domestic rice surpluses that have to be sold as animal feed, recouping about one-sixth of the cost of production. The losses in this single market amounted to about $6 billion in 1980.

6.22 It is often alleged that countries use health and quality standards to restrict imports. No one doubts the legitimate need for such regulations. But their excessive or discriminatory use can be implicitly protectionist. Japan prohibits imports of apples from countries suffering from codlin moth, even though codlin moth is endemic throughout its own fruit growing regions. In four countries for which comprehensive figures are available, 95 percent of Japanese and 94 percent of Norwegian food imports are subject to health standards, but only 55 percent in Switzerland and 60 percent in Australia. It seems unlikely that these differences reflect health concerns alone.

6.23 Table 6.2 summarizes data on industrial country governments' border policies for agriculture. It shows which imports in industrial countries are subject to nontariff barriers (NTBs). The figures do not show how much each import is affected, nor the value of imports affected, merely the presence (or

Table 6.2 The frequency of application of various nontariff barriers in industrial countries, 1983
(percent)

Commodity	Tariff quotas and seasonal tariffs (1)	Quantitative restrictions (2)	Minimum price policies All (3)	Minimum price policies Variable levies (4)	Total[a] (5)
Meat and live animals	12.3	41.0	26.0	23.8	52.2
Dairy products	6.9	29.6	28.6	25.6	54.6
Fruits and vegetables	15.6	18.7	4.9	0.8	32.8
Sugar and confectionary	0.0	21.7	58.0	58.0	70.0
Cereals	1.7	10.9	21.7	21.7	29.0
Other food	0.8	16.6	13.5	13.2	27.4
Tea, coffee, cocoa, mate	0.4	4.0	2.5	2.5	6.6
Other beverages	18.5	22.9	18.4	0.6	42.3
Raw materials	0.0	7.5	0.3	0.3	7.8
All agriculture	8.1	17.2	11.5	8.2	29.7
Manufactures	2.0	6.9	0.5	0.0	9.3

Note: Data are the number of import items subject to the nontariff barriers shown as a percentage of the total number of import items. The industrial-country markets considered are Australia, Austria, the EC, Finland, Japan, Norway, Switzerland, and the United States.

a. This column will be less than the sum of columns (1) and (3) if some imports are subject to more than one barrier.

absence) of particular kinds of restriction in each trade category. The table shows that industrial countries' imports of raw materials are largely unimpeded by nontariff barriers; so are those of tropical beverages. On the other hand, 70 percent of sugar and confectionary imports and more than one-half of meat, live animals and dairy imports face at least one barrier. Fruits and vegetables and "other beverages" (mainly wine and fruit juice) are hardly affected by variable levies; they are restricted either quantitatively or by seasonal tariffs. Variable levies are also important for sugar, meat, dairy products, and cereals.

Production quotas and input controls

6.24 Production quotas grant farmers the right to produce a specified amount of a crop at a guaranteed price. If a farmer produces more, he must sell at lower prices. Implementation requires the governments to monitor the output of individual farmers. So far, this approach has been deemed administratively cost-effective only for sugar, milk, peanuts, and tobacco.

6.25 Quotas are usually introduced when the budget cost of surpluses becomes intolerable. If it is impossible to reduce price levels (for political reasons), quotas are the only way of staunching the outflow of public funds. While production quotas have no direct budgetary costs, they have significant economic costs. They penalize consumers by raising prices, frequently allocate production rights to inefficient farmers, and can distort the markets for competing products. To take an admittedly extreme example, quotas on sugar in the EC have artificially stimulated the production of corn syrup.

6.26 The longest-lived system of production quotas is the United States' tobacco program. This has been estimated to have cost consumers about $1 billion a year from 1980 to 1984 according to a recent study. It did not even benefit those who were growing tobacco. True, quota holders were $800 million better off but many of them had rented out their quotas. Producers without quotas were $200 million worse off, leaving a net loss to all concerned of $400 million.

6.27 Once granted, production quotas are difficult to remove because they become valuable property rights. In British Colombia, Canada, the right to sell the milk of a cow costs about eight times more than the cow herself. Such rents raise substantial entry barriers into farming. They increase the initial capital required although quotas do not affect the long-run rate of

return on investment in agriculture. Table 6.3 shows the prices that tradable quotas command and the capital outlay that they imply for family farms in Ontario, Canada.

Table 6.3 The market value of quotas in Ontario, Canada, 1984

Product	Unit price	x	Size of family farm unit	=	Quota cost to acquire farm (dollars)
Eggs	$23 a hen		25,000 birds		580,000
Milk	$3,500 a cow		40 cows		140,000
Tobacco	$1.50 a pound		40 acres		310,000
Turkeys	54 cents a pound		25,000 birds a year		270,000

Source: D. Gale Johnson (1985).

6.28 Controls on inputs are more common than controls on output. Commonest of all are restrictions on land. The United States has the longest history of acreage controls. The first legislation, on grains and cotton, was passed in 1933; the most recent scheme was the Payment-in-Kind (PIK) program, started in 1983. Japan has also used such measures, first to reduce rice acreage and then to reduce citrus fruit output. The government sometimes paid to uproot trees that had been planted on paddy-fields that had been idled under a previous program!

6.29 In a large and open economy, voluntary acreage controls are easier to administer than production quotas. With quotas, all output has to be monitored and surpluses may have to be destroyed. With acreage controls, only the land has to be monitored and farmers can be induced to join the system either by paying them directly for each acre they do not plant or by offering them higher prices for their output if they leave some acres fallow (as currently in the United States).

6.30 The administrative costs of commodity programs are formidable. The United States Agricultural Stabilization and Conservation Service maintains a staff of about 16,000 full-time and part-time employees and some 3,000 county committees of three local citizens, usually farmers. In 1985, this cost $400 million. Millions of decisions must be made: what is each farmer's "program acreage"--the land on which payments may be made--for each crop? What is the "program yield"--which determines how much he gets per acre from the legislated payment per bushel? What can the farmer use his idled land for, if anything? Are his storage facilities adequate? Is he complying with the programs' provisions? Not surprisingly, it is too costly to monitor every requirement, and local administrators may be tempted to give farmers the benefit of the doubt.

6.31 Acreage controls are additionally wasteful because they distort farmers' input costs. They encourage farmers to farm their permitted acreage more intensively and at higher cost. Ironically, they may also encourage farmers to plough up land that might otherwise be left as pasture, woodland, or swamp in order to benefit when their so-called "base-acreage" (from which reductions are calculated) is updated. They work at cross purposes with input subsidies, each increasing the cost of the other.

6.32 In the PIK program of 1983, U.S. farmers agreed not to grow crops on a total of 77 million acres, 37 percent of the land sown in 1982 to grains, cotton, and rice. Drought scourged the farm states of the United States' mid-west in 1983 and output of these crops fell by 41 percent. Prices rose by an average of 16 percent. Farmers also gained because they received $9.5 billion of crops that had been stored by the government. The transfer from consumers and taxpayers was worth about $20 billion. On top of this, the PIK cost billions of dollars to livestock farmers (because rises in feed grain

prices could not be fully passed through to consumers) and to farm input industries (because farmers cut down on fertilizers, seeds and other inputs).

Interventions and target prices

6.33 In nearly every industrial country, governments offer to buy produce at a fixed price. This is the intervention price. It represents the minimum return to farmers and, unless constrained by quota, determines their levels of production. The government must hold the stock it buys off the market, and usually ends up dumping it either at home or abroad.

6.34 In most countries, border measures prevent cheap imports from undermining the intervention price. In the United States, however, there are few border measures for grains and the federal government effectively supports the world price by setting a minimum domestic price. The federal Commodity Credit Corporation (CCC) "lends" participating farmers cash using grain held in approved stores as collateral. Farmers may repay the loans, retrieve their crops, and sell them. Or they may turn the crops over to the CCC as repayment. The "loan-rate"--the price at which the CCC lends--defines farmers' minimum prices.

6.35 Recently, the United States has also set a "target price." This is higher than the loan rate and is often conditional upon participation in an acreage reduction scheme. "Deficiency payments"--based on the difference between market and target prices--amounted to $10.5 billion in 1984. That was one-third of net farm income; deficiency payments are likely to rise even further in the future, because new U.S. legislation cuts loan rates and hence market prices. Such payments are often defended on the grounds that they help the poorest or most indebted farmers. But in the United States in 1985, three-quarters of them were reckoned by the U.S. Department of Agriculture to have gone to farmers who were wealthier than the average citizen.

Consumer subsidies

6.36 Consumers pay most of the cost of agricultural price supports. Oddly, subsidies to consumers also contribute to agricultural protection. By making food comparatively cheap, subsidies raise demand for domestic output. Free school milk benefits farmers' bank-balances as well as children's back-bones. Temporary or selective subsidies can help reduce government stocks of surplus commodities: every European pensioner receives his or her own slice of the EC's butter mountain each Christmas. Subsidies shield consumers from the high prices paid to producers and probably reduce the political costs of agricultural price support. In Japan, the official aim of supporting the price of rice is to ensure consumers adequate and reasonably priced rice. Having decided on a policy of rice self-sufficiency--because the government feared the effects of external shocks--consumer subsidies became necessary. Japanese consumer food subsidies are reckoned to cost about $3.5 billion a year.

Other measures

6.37 Other policy instruments exist. Some countries have state monopolies on imports, exports or domestic purchases, which implicitly generate many of the effects of subsidies or border measures. The range of subsidies is wide: transport (in Canada, see Box 6.4), insurance (United States, Canada), fertilizers (Australia), water (United States), and income tax concessions (United States, United Kingdom). Tax breaks have been estimated to have accounted for almost 20 percent of recent capital-goods investment in U.S. agriculture.

The domestic gains and losses from agricultural policy

6.38 Industrial countries' agricultural policies transfer income from consumers and taxpayers to farmers and land-owners. They also reduce the countries' national incomes by wasting resources. Subsidies cause farmers to use inputs inefficiently. Artificially high food prices mislead producers into using too many resources for producing food (resources which could be better used producing something else). They also mislead consumers into consuming less (or worse) food than they would wish given its true value (that is, what it costs to produce it most efficiently). While accurate estimates of these effects are difficult to obtain, a body of evidence has been developed by economists that adds up to a strong case against such policies. This section reviews that evidence.

6.39 Table 6.4 summarizes some estimates for the domestic losses to industrial countries. The estimates differ in coverage, method, and time but they all show that agricultural protectionism is expensive. Rice protection alone is estimated to have cost Japanese society $2.9 billion in 1980; in 1976, it cost about $3.9 billion--0.6 percent of Japan's GNP. The costs to the EC were just as large: the $15.4 billion cost of the CAP in 1980 represented 0.6 percent of GDP. Even traditional agricultural producers were not immune. Canada lost $400 million protecting its dairy industry between 1976 and 1979; and the United States lost $4 billion in total agricultural support in 1984-85.

6.40 These are under estimates, and they also ignore the distortions that high agricultural prices cause in the long term--such as the diversion of fixed investment and research from industry to agriculture. This can be sustantial because agriculture changes so quickly. One indication of how much

Table 6.4 The domestic efficiency loss from agricultural intervention in selected developing countries

Country and source	Coverage	Year	Efficiency loss (billions of 1980 dollars)
Canada			
Josling (1981)	Dairy products	1976-79	0.4
Barichello (1982)	Wheat, barley, milk, poultry, eggs	1980	0.3
Harling (1983)	Wheat, barley, oats, potatoes, beef, poultry, eggs	1976	0.1
Europe			
Bale and Lutz (1981)[a]	Wheat, maize, sugar, barley, beef	1976	1.9
Buckwell and others (1982)[b]	All CAP commodities	1980	15.4
Bureau of Agricultural Economics, Australia (1985)[c]	All CAP commodities	1978	9.4
Bureau of Agricultural Economics, Australia (1985)[d]	All CAP commodities	1983	6.7
Tyers and Anderson (1986)	Grains, meats, dairy products, sugar	1980-82	24.1
Japan			
Bale and Lutz (1981)	Wheat, barley, sugar, beef, rice	1976	6.0
Otsuka and Hayami (1985)	Rice	1980	2.9
Tyers and Anderson (1986)	Grains, meats, Dairy products, sugar	1980-82	27.4
United States			
Rosine and Helmberger (1974)	All commodities	1970-71	5.5
Gardner (1985)	Grains, dairy products, sugar, cotton, tobacco, peanuts	1984-85	3.9
Johnson and others (1985)	Grains, soybeans, cotton	1981-84	0.3
Tyers and Anderson (1986)	Grains, meats, dairy products, sugar	1980-82	-0.7

a. Data are for France, Germany, and the United Kingdom.
b. Data are for the EC, excluding Greece.
c. Data are for the EC, excluding Greece.
d. Data are for the EC.

it can change is the way nine EC countries converted themselves from net importers of 20 million tons of wheat per year to net exporters of 10 million tons between 1965 and 1983. Another is the development of sugar substitutes in the United States which reduced sugar imports from 5 million tons (half of U.S. consumption) in 1981 to 3 million tons in 1982 to a projected 1 million in 1986.

6.41 Much larger than the net costs of agricultural support are the costs borne by consumers and taxpayers. Table 6.5 shows estimates of the components of the costs as well as the benefits that are reaped by producers. The figures are necessarily imprecise, but they indicate the massive transfers involved. In every case, producers gain less than consumers and taxpayers lose. The ratio of domestic loses to gains is expressed as the "transfer ratio"--the average loss to consumers and taxpayers per dollar transferred to producers.

Table 6.5 The annual domestic costs and benefits of agricultural protection to consumers, taxpayers, and producers in the EC, Japan, and the United States (billions of dollars)

Country and year	Consumer costs	+	Taxpayer costs	-	Producer benefits	=	Total Domestic costs	Transfer ratio
EC (1980)[a]	34.6		11.5		30.7		15.4	1.50
Japan (1976)	7.1		0.4		2.6		4.1	2.58
United States (1985)	4.7		10.3		11.6		4.4	1.38

a. Excludes Greece.

Source: For the EC: Buckwell and others 1980; for Japan: Bale and Lutz 1976; for the United States: Gardner 1985.

6.42 The high transfer ratio for Japan reflects high levels of protection. The cost of agricultural policies increases more than proportionally with the degree of protection--that is, policies which raise prices by 50 percent cost more than five times as much as those which raise prices by 10 percent. The disproportionately high cost of subsidizing exports is mirrored in the low taxpayer costs for Japan, which exports little food, and the high costs for the EC. The United States' policies cost less per dollar transferred because the income transfers, while large absolutely, result from a smaller price distortion. Also, the United States' output affects world market prices, so that part of the cost is borne by foreign consumers (see Box 6.5).

6.43 Obviously, transferring income between sections of society is a legitimate activity for governments. The figures in Table 6.5, however, suggest that agricultural protection is an expensive way of doing it. In Japan, consumers and taxpayers lose $1.50 for every $1 transferred to producers, not including the efficiency losses caused by taxes raised to pay farm subsidies. Furthermore, protection can transfer income from the poor to the rich. In most countries, the main beneficiaries of price support are land-owners and quota-holders who are comparatively wealthly, while the cost is borne disproportionately by the poor because they spend the highest share of their income on food.

6.44 The figures in Tables 6.4 and 6.5 indicate the resource wastes that can be avoided if trade is liberalized. They show what countries would gain from abolishing their agricultural policies after all the effects have worked through the economy. In the short term, however, land, capital, and labor would remain stuck in farming, maintaining supplies even in the face of changing policies. This would depress prices further in the short-term than

in the long-term. While the overall benefits of liberalization are similar in the short- and long-term, liberalization usually involves heavier costs to farmers and larger gains to others in the short-term.

6.45 Benefits to industrial countries. One argument in favor of supporting agricultural prices is that they stimulate agricultural technology and boost crop yields. Indeed, they do. But higher yield reflect gains which only partly offset the cost of inputs such as fertilizers, oil and pesticides. Investment in agriculture draws skilled manpower and sophisticated equipment away from other sectors of the economy. These resources could be used more efficiently elsewhere. Investment that generates ever more output of a product that already costs more than it is worth is not progress.

6.46 Agricultural intervention also places heavy burdens on most countries' treasuries. Indeed, soaring budget costs provide the main impetus for agricultural reform. This is most clearly evident in the EEC, where agricultural spending accounts for around 70 percent of the total community budget. Of the ECU 27.2 billion ($34.4 billion) spent on agriculture in 1984, about ECU 11 billion was raised from customs duties and levied on agricultural imports; the rest was met from general taxes. As recently as 1974, agricultural spending was only ECU 4.7 billion of which ECU 3 billion was raised from agricultural levies, so the increase both in spending and in the burden placed on general taxation has been great.

6.47 Spending is smaller in the United States and Japan, but still significant. The U.S. government's payments were $10.5 billion in 1984 (up from only $1.5 billion in 1980). They are likely to rise to $20 billion a year in 1986-88 under the newly enacted Food Security Act of 1985. In Japan, the total agriculture, fisheries and forestry budget was $14.7 billion in

1984, of which $3.4 billion was devoted to food subsidies. This, though, represents a fall from 1980.

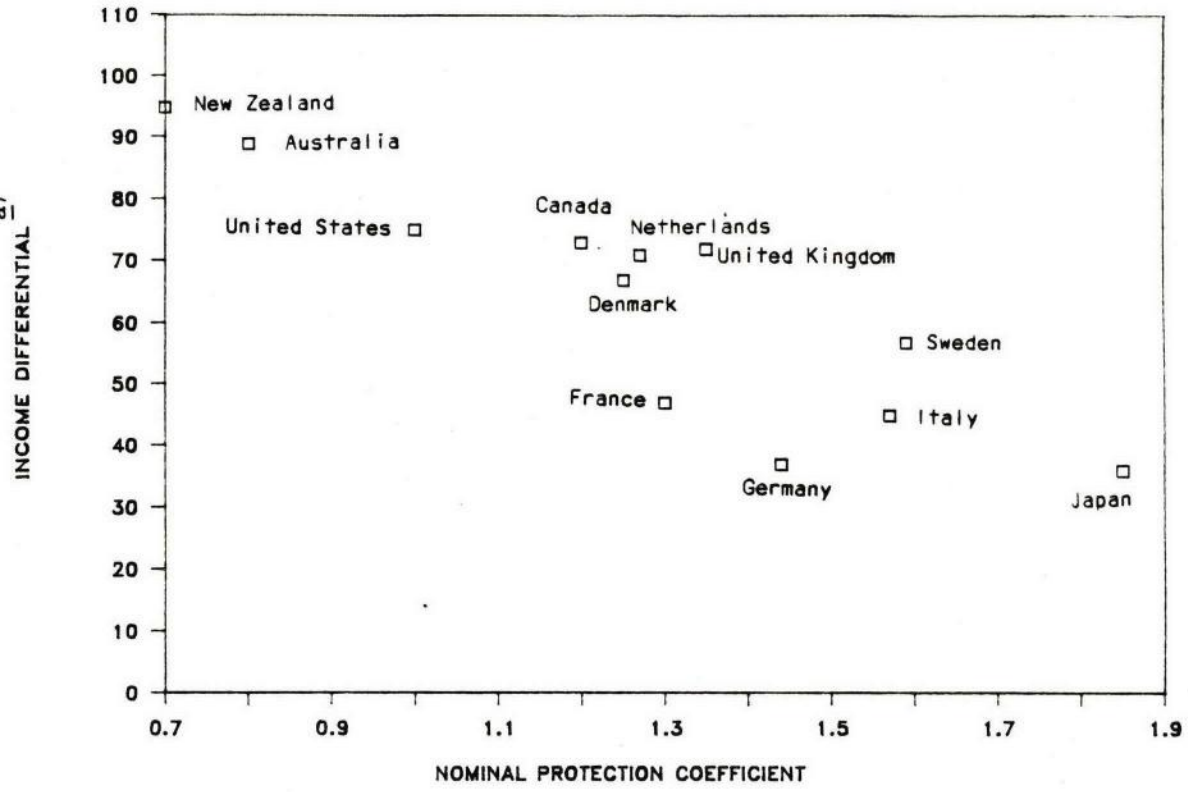
6.48 The benefits of all this spending are small. The main aim is to stabilize and raise farmers' incomes. Some stability has been achieved, but it is doubtful whether high product prices have raised farm incomes in the long term, although the rental value and price of land have been supported to some extent.

6.49 Figure 6.2 plots rates of protection against incomes of farmers relative to other workers. It shows a clear inverse relationship--the higher the protection, the lower the relative income. There is no link over time between protection and relative incomes within individual countries. The start of the EC's cereals regime in 1967-68 cut average agricultural prices in West Germany by 8 percent, but farm profits per family worker rose. So did the value added by each farm worker compared with the value added elsewhere in the economy.

6.50 True, there are problems in assessing the effect of agricultural policies on farmers' incomes. In many industrial countries, figures on farmers' incomes are unreliable or not available. Rising prices tend to raise incomes in the short term, so their long-term effects are obscured by the constant stream of new policies. The degree and nature of policies depend partly on farmers' incomes, so it is difficult to disentangle cause and effect.

6.51 In any case, it should not be surprising that higher protection is not associated with higher farm incomes a point made effectively by Ricardo (see Box 6.6). Box 6.7 illustrates how extra revenues from higher farm prices are competed away into higher land prices and rents. Farmers bid to acquire the means to produce goods that can be sold at high prices. Moreover, in

Figure 6.2 Nominal protection coefficients and the income differential in selected industrial countries, 1980



a. GDP per head of work force in agriculture as a percentage of GDP per head of work force in the whole economy.

Source: Anderson, K., Y. Hayami, and M. Honma, "Growth of Agricultural Protection." In K. Anderson and Y. Hayami, Political Economy of Agricultural Protection: East Asia in International Perspective. George Allan and Unwin, London, 1986. UN and OECD Yearbooks of National Accounts Statistics.

in industrial countries, agriculture accounts for only a small proportion of GDP so rates of return in agriculture are in the long run largely set by other parts of the economy.

6.52 A further reflection on the need for and effects of agricultural policies is the growing number of part-time farmers. In the United States, net farm income as a proportion of farmers' total income fell from 58 percent in 1960 to 36 percent in 1982. In Japan, where small scale farming is more important, farm households derived 75 percent of their income from nonfarm sources in 1980. Furthermore, the families of part-time farmers with permanent jobs outside farming were around 25 percent better off than families with one or more full-time farm-workers.

6.53 It is possible to argue that farmers would have been even worse off without agricultural policies.. That cannot be proved or disproved. But there is reason to doubt this argument. In industrial countries, the high-price farm policies logically raised farmers' expectations that such policies would continue. More people and capital were attracted into agriculture than would have otherwise been the case.

6.54 The results have been dramatic in the United States. Stimulated by high prices and encouraged by income tax incentives, farmers and investors borrowed heavily to finance expansion. The drawbacks of such a course have become alarmingly clear. Commodity prices, farm incomes and land prices have fallen so far that many farmers cannot service their debt. These events have bankrupted many farmers and threatened the banks from which they borrowed.

6.55 It is impossible to deny the hardship caused by these events, but it is well to recall that their magnitude is due in part to past policies. Without a tradition of government support, investors would not have reacted so vigorously to the high commodity prices of the mid-1970s. Without subsequent

attempts to maintain farmers' incomes, the decline of output and land prices would have been smoother. The policies depended upon confidence that they would continue. But as program costs mounted, that confidence waned.

6.56 Many countries say agricultural self-sufficiency is an aim--and an outcome--of their agricultural support programs. Self-sufficiency is supposed to contribute to food security, stabilize food prices and occasionally (and perversely), to make prices "reasonable." None of these arguments is sound.

6.57 Take price stability. There is no doubt that the variable levies in Europe and the fixed intervention prices in Japan do stabilize consumer prices. But self-sufficiency is not necessary to achieve it. Variable levies and subsidies could achieve the same thing at lower average prices without boosting domestic production. Self-sufficiency contributes nothing to "reasonable" prices, for it increases the total cost of food.

6.58 The argument that self sufficiency contributes to food security sounds simple but it is not. Industrial countries need never go short of food because of crop failure since they could always afford to buy enough on world markets. The "economic security" argument hinges around cost--and it seems likely that scarcity prices even as often as one year in five would be cheaper than relatively high prices every year.

6.59 What about "strategic security"--the ability to feed the population in times of political turmoil? It would have to be a world-wide crisis to make food unobtainable from any source. After all, the USSR managed to purchase record-high imports despite the United States' grain embargo in 1980. Such a crisis would also stop the inputs--oil, fertilizers, pesticides--on which the present high levels of output in Europe and Japan depend. The goal of "strategic security" is illusory.

International consequences

6.60 Industrial countries' agricultural policies may be aimed at solving domestic problems, but their effects spill over onto the rest of the world. By expanding output and depressing demand, they reduce world prices and distort the relative prices of agricultural and manufactured goods. By granting special trading privileges to remedy some of the harm, industrial countries can make matters worse. And by destabilizing international markets, their farm policies can amplify rather than dampen commodity price fluctuations. This section quantifies these effects using the results of recent studies which look at what would happen to trade if the policies were liberalized.

Supply and price effects

6.61 How much agricultural policies in industrial countries depress world prices depends on four things: the level of protection, the extent to which domestic surpluses result in reduced imports or subsidized exports, the share of world output and consumption accounted for by the industrial countries, and the responsiveness of supply and demand to price changes in the world markets.

6.62 The level of agricultural prices is the key to whether investment in agriculture is profitable. In industrial countries, resources are diverted from industry to agriculture. In developing countries, which face low world prices for agricultural products, resources are diverted from agriculture to industry. Incentives in agriculture bizarrely favor production in high-cost industrial countries rather than in low-cost developing ones. This aggravates the price-depressing consequences of protection and makes developing countries dependent on food imports even though their long-term comparative advantage

may lie in agriculture. The longer agricultural protection is maintained in industrial countries, the more damaging it will be to the world economy.

6.63 The impact of agricultural protectionism differs from one developing country to another. It depends on whether the country is a net importer or exporter of each product; if an importer, on whether it would still import goods if their prices rose; and on how successfully the country adjusts to changing prices. Net food importers benefit from lower world prices--at least in the short term. Since developing countries as a group are currently net food importers, they would, by definition gain, as a group. The definition, however, is misleading because it assumes that developing countries would go on producing as little, and industrial countries as much, if world prices rose. Some countries would have been exporters had agricultural protection not stimulated overproduction in industrial areas: they would likely gain if the protection were abolished.

6.64 The rate of protection varies between agricultural products. So protection not only depresses the overall level of world prices, it also distorts relative prices among agricultural products. Prices for the most highly protected products--dairy products, beef, sugar--are more depressed than prices of other agricultural products. These distorted prices make the use of resources in world agriculture even less efficient. If Japan were to import more rice, India could switch land from wheat and other grains to rice, in which it has a comparative advantage. Farmers in the Netherlands produce vegetables in greenhouses because energy costs are subsidized. This discourages Mediterranean countries from exploiting their natural advantages in these products.

6.65 Differing rates of protection hit developing countries especially hard when the rate of protection is higher for processed agricultural

products. Tariffs in industrial countries are higher for wheat flour, pasta, cheese, and poultry than they are for wheat, milk, or feedgrains (see Box 6.8). Industrial countries therefore export more and import less processed goods than they do the related raw materials. The EC accounts for 11.4 percent of world wheat exports but 48.9 percent of wheat flour exports. Similarly, the U.S. imported 10.3 percent of world raw sugar imports in 1983 but hardly any refined sugar.

Subsidies and trade preferences

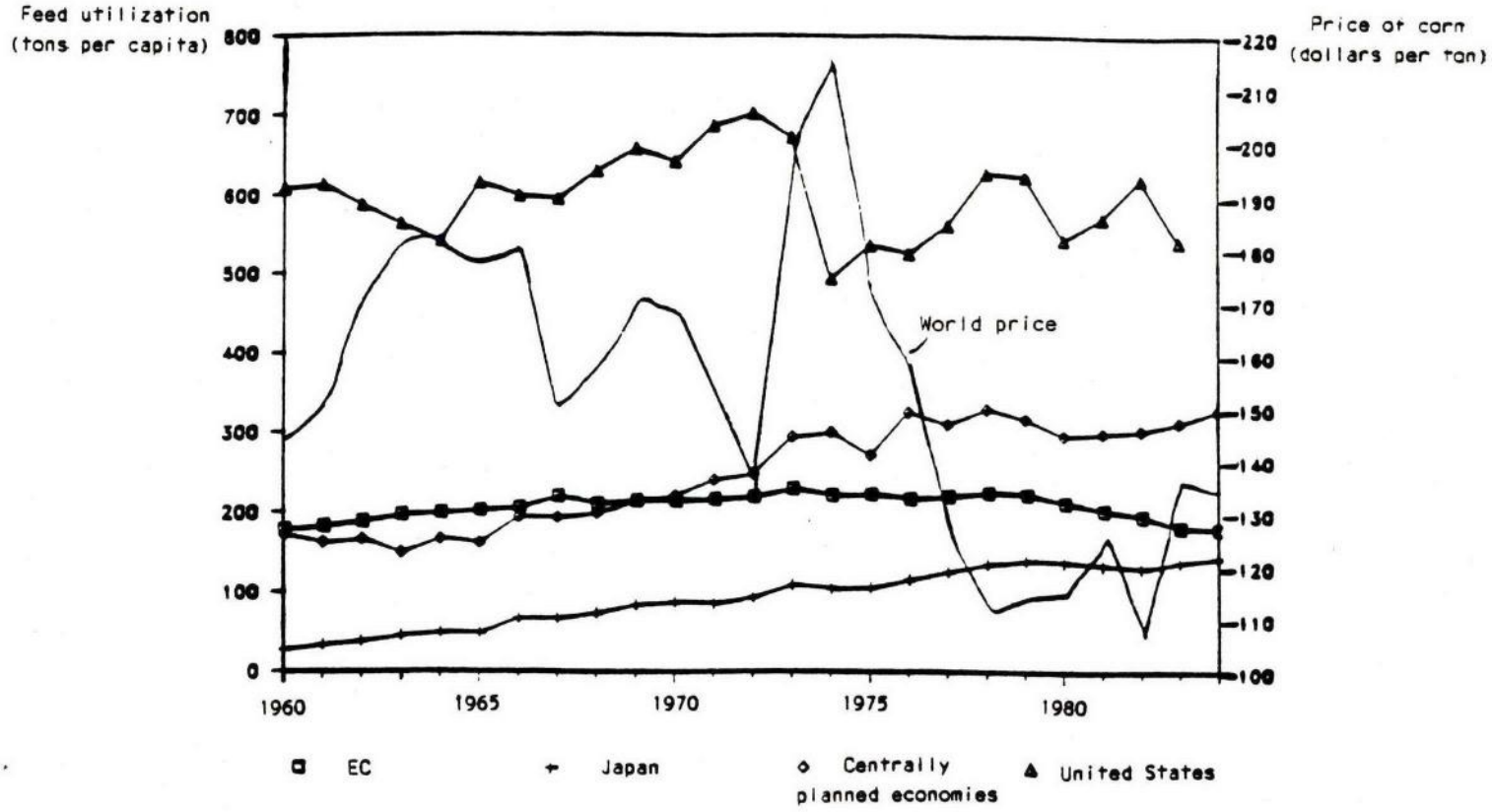
6.66 Some industrial countries have to give subsidies to sell crops on world markets. Developing countries' competitiveness therefore depends less on their own efficiency than on political decisions in industrial countries. And their ability to compete may be undermined at any time by increased export subsidies on industrial countries' exports. Even when industrial countries appear to provide developing ones with market opportunities, the gains may not last. High grain prices in the EC created new markets for feed grain substitutes like cassava, tapioca, corn gluten feed and citrus pellets. But China, Indonesia, and Thailand, which produce cassava and tapioca, had to sign "voluntary" export restraint agreements.

6.67 When a high-cost importing country becomes an exporter, potential gains from trade are wasted. The losses are often made worse by the special trade preferences that industrial countries give to developing ones in the hope of mitigating these distortions. In some cases, industrial countries which produce an exportable surplus of a crop have to import it under the trade preference scheme. The EC imports dairy products from New Zealand, beef from some African, Caribbean, and Pacific countries. These trade flows raise income in the exporting countries which are part of the preference scheme, but importers and potential exporters outside the scheme suffer greater losses.

Destabilization of world markets

6.68 Most industrialized countries maintain domestic consumer prices while world market prices change. A shortfall in world output will not affect demand in a country which insulates its domestic markets. But someone's consumption must be reduced. And if some countries refuse to cut their consumption, others must reduce theirs disproportionately. To bring this about, world prices will have to rise by more. Cereal prices would fluctuate less--thus reducing the risk of food shortages in developing countries--if meat consumption and demand for feedgrains were allowed to change with world market prices. Figure 6.3 shows that among major industrial countries only the United States allowed per capita feed consumption to do so. Consumption in the EC, in other industrial countries and in the centrally planned economies hardly changed when prices soared in 1974-75.

Figure 6.3 Per capita feed utilization and corn prices in selected industrial regions, 1960-84



Source: USDA, Foreign Agricultural Circular.

6.69 The price changes caused by sudden supply or demand shocks can be absorbed by commodity stockpiles. Chapter 7 looks at attempts to coordinate stockpiling policies internationally. But national stockpiles are no less influential. In theory, world prices could be stabilized even if most countries insulated their markets as long as countries or private individuals which operated on the free market held big enough stocks. But the size of the stockpile must increase the more countries insulate their economies. One study of fourteen regions found that stocks needed to be eight times higher if the regions completely insulated their economies than would have been necessary under free trade. The cost of the extra stocks indicates how much could be gained from liberalization. For a crop like wheat, which can be grown in wide variety of conditions at similar costs, but whose yield is variable, the chief gains from trade arise from temporary trade flows as each producer reaps large or small harvests. Insulating policies sacrifice these gains.

6.70 Decisions to build up or release stocks are often made not by private traders but by governments. As in developing countries (see Chapter 5) governments determine the size of public stockpiles according to how much money is available from the budget or in response to other political pressures rather than how big the stockpile needs to be for stabilization purposes. In the mid-1970s, some countries built up stocks when they should have been releasing them, which made the world food crisis worse. In June 1973, when world wheat prices had almost doubled in twelve months, wheat stocks were estimated to have risen by 2 million tons in the USSR and by 0.2 million tons in Japan. In the year to June 1974, when prices had increased by an additional 30 percent, stocks in the EC and USSR had increased by an additional 0.3 and 14 million tons respectively. Even wheat exporters such as

Canada and Australia increased their stocks by 0.2 and 1.4 million tons between 1972-73 and 1973-74.

Counting the costs of protection

6.71 Because of the distortions in every trading country, the whole world would be better off if industrial countries were to stop protecting their farmers and liberalize agricultural trade. But by how much? Some recent studies have made some progress in quantifying the gains from liberalization.

6.72 In theory, the effects of policy and trade liberalization could be estimated by measuring what had happened when policies or trade were liberalized. Unfortunately, liberalization experiments are rare. Estimates can only be made by using simulation models. Several such models exist.

6.73 Table 6.6 shows the results of a study by Valdes and Zietz. They asked what would happen to developing countries if OECD countries cut their tariffs on ninety-nine commodities by 50 percent. The study is based on figures for 1975-77. According to Valdes and Zietz, developing countries' income would have increased by $473 million and their export revenues by more than $3 billion in 1977. Total export revenue would have risen by 11.0 percent; exports of low-income countries would have risen by 8.5 percent. As protection in OECD countries has increased since 1977, the benefits of liberalization would be substantially greater in 1985.

6.74 Developing countries' gains would have arisen mainly from increases in the prices of tropical exports. The price of roasted coffee would have been 10.8 percent higher, that of coffee extracts 6.4 percent higher, cocoa paste cake 11 percent, and cocoa butter oil 9 percent. Losses would occur from higher prices of imported temperate crops, especially cereals. But the

Table 6.6 Change in export revenue, import cost, and efficiency for selected commodities of developing countries caused by a 50 percent decrease in OECD tariff rates, 1975-77
(millions of 1980 dollars)

Commodity	Absolute increase		
	All developing countries [a]	Low-income countries	Middle- and high-income countries
Change in export revenue			
Sugar	2,108	394	1,714
Beverages and tobacco	686	191	495
Meats	655	33	620
Coffee	540	123	417
Vegetable oils	400	60	339
Cocoa	287	21	265
Temperate-zone fruits and vegetables	197	60	137
Oilseeds and oil nuts	109	19	90
Other commodities	883	96	788
Total increase of all exports	5,866	998	4,867
Change in import costs			
Cereals	-876	-530	-345
Other commodities	-497	-152	-345
Total increase of all imports	-1,373	-683	-690
Change in efficiency	922	-4	926

Note: The change in efficiency is an estimate of the increase in the sum of producer and consumer surpluses; it is not the difference between the increases in export revenues and import costs. Results of further work on a later period reported in Zietz and Valdes (1985) for sugar and beef indicate somewhat larger gains in export revenue than shown here.

a. Includes developing countries with populations of more than 4 million in mid-1985.

Source: A. Valdes and J. Zietz (1980), pp. 31, 47.

increase in export revenue more than compensates because Valdes and Zietz reckoned that prices of most tropical products would go up more than the price of wheat, the most important agricultural import into developing countries. These estimates ignore certain nontariff barriers to trade and omit other important long-term effects. Changing agricultural prices would encourage outward-oriented policies in developing countries, stimulate investment and research in agriculture and increase the export potential of tropical products by more than Table 6.6 suggests. The estimates, therefore, probably represent the minimum benefits of liberalization.

6.75 Because policies interact, it is difficult to judge what would happen across the world as a result of liberalization by groups of countries. European and Japanese policies tend to reduce world prices of wheat and rice; the current policies of the United States tend to increase them. It is possible that the policies could offset one another so that industrial countries lose while developing countries' trade remains little affected. On the other hand, when industrial countries' policies reinforce each other (as in sugar and dairy products) the consequences for developing countries are more dramatic.

6.76 Interactions between commodities are also important. Industrial countries do not, on the whole, intervene in markets for vegetable oils (such as palm oil or coconut oil). But these may still be depressed by industrial-country policies in other markets. The EC's feedgrain policies increase demand for feed grain substitutes, such as soybeans for meal; a joint product with meal is soybean oil. At the same time, some U.S. grain price supports and acreage controls encourage production of soybeans, which are not controlled. Thus, as a by-product of industrial countries' policies, soybean production is encouraged, which depresses the world price of vegetable oils, which harms developing countries' export earnings.

6.77 Estimates of liberalization can reflect the complexities of world markets by dealing with the connections between commodity markets. That is what a study by Tyers and Anderson does (see Box 6.9). It is able to calculate the effects of unilateral trade liberalization by individual countries or groups of countries, as well as of simultaneous liberalization by both industrial and developing countries. Although Tyers and Anderson cover only the main temperate-zone commodities--and thus omit the most important sources of gains to developing countries--they nonetheless throw light on some important aspects of trade and policy liberalization.

6.78 Tables 6.7 and 6.8 show what Tyers and Anderson estimate would happen to world prices and trade under three scenarios: unilateral liberalization by the EEC, Japan, and the United States; multilateral liberalization by all industrial countries; and global liberalization.

6.79 All the simulations show that the volume of world trade in the group of commodities would rise, although cross-price effects result in small reductions for a few individual commodities (see Table 6.7). Unilateral liberalization by the EC would reduce world trade in sugar because its subsidized exports would end along with the preferential sugar imports that the EEC currently buys.

6.80 Most of the projections show world prices would rise. There are two exceptions: U.S. liberalization, which would reduce world prices slightly because ending acreage controls would boost output of grains and rice; and developing-country liberalization of rice and some livestock products, which would reduce world prices by ending the taxation of domestic producers that currently holds production down.

Table 6.7 International price and trade effects of liberalization of selected commodity markets, 1985

Country or country group in which liberalization takes place	Wheat	Coarse grains	Rice	Beef and sheep	Pork and Poultry	Dairy products	Sugar
	Percentage change in international price level following liberalization						
EC	1	3	1	10	2	12	3
Japan	0	0	4	4	1	3	1
United States	1	-3	-0	0	-1	5	1
OECD	2	1	5	16	2	27	5
Developing countries	7	3	-12	-0	-4	36	3
All market economies	9	4	-8	16	-2	67	8
	Percentage change in world trade volume following liberalization						
EC	0	4	-0	107	3	34	-5
Japan	0	3	30	57	-8	28	1
United States	0	14	-2	14	7	50	3
OECD	-1	19	32	195	18	95	2
Developing countries	7	12	75	68	260	330	60
All market economies	6	30	97	235	295	190	60

Note: Data are based on the removal of the rates of protection in effect in 1980-82.

a. Indicates the percentage change between -0.4 and 0.4.

Source: Tyers and Anderson, 1986.

Table 6.8 Value of net increase in exports or decrease in imports of selected commodities for country groups under two liberalization scenarios
(millions of 1980 dollars)

Country group	Wheat	Coarse grains	Rice	Beef and sheep	Pork and Poultry	Dairy products	Sugar	Total
All OECD liberalization								
Developing countries	174	-279	2,343	6,605	2,814	7,801	1,192	15,027
Industrial countries	-374	639	-2,401	-7,475	4,099	-10,637	-1,277	-17,426
Centrally planned Europe	195	-360	58	870	-1,285	2,836	85	2,399
Global liberalization								
Developing countries	-1,503	-1,112	3,203	6,749	8,561	-3,505	-1,343	11,050
Industrial countries	711	1,227	-3,094	-7,730	-5,661	-2,224	-1,397	-18,168
Centrally planned Europe	792	-115	-109	981	-2,900	5,729	54	7,118

Note: Negative amounts indicate increases in imports or decreases in exports.

Source: Tyers and Anderson, 1986.

Table 6.9 Changes in efficiency caused by liberalization of selected commodities, by country group, 1985
(billions of 1980 dollars)

Country group	Industrial-country liberalization	Developing-country liberalization	Industrial- and developing-country liberalization
Developing countries	-11.8	28.2	18.3
Industrial market economies	48.5	-10.2	45.9
East European nonmarket economies	-11.1	-13.1	-23.1
Worldwide	-25.6	4.9	41.1

Note: Data are based on the removal of the rates of protection in effect in 1980-82.

Source: Tyers and Anderson 1986.

6.81 Developing countries face higher import bills when industrial countries liberalize. They import less and export more, in amounts which, valued at 1980 prices, add up to $15 billion for the commodities analyzed (Table 6.8). A better measure of the effect, however, is the net loss to consumers and producers, which is estimated at $10.2 billion (Table 6.9). The implication that developing countries lose is misleading, for two reasons. First, because the study looks at temperate crops of which developing countries are the main importers (though they might not remain so under free trade). If the tropical products were included we would expect to see a substantially different story, as Valdes and Zietz did. Second, even Tyers' and Anderson's study shows that developing countries could gain $18.3 billion if they would liberalize their own agricultural policies along with industrial countries.

6.82 Liberalization by developing countries here means that distortions in border prices prevailing in 1980-82 were removed by sixteen countries and four

regional groups. The results (see Table 6.7) are that the world price of rice would fall 12 percent, while prices of grain, sugar, and dairy products would rise. The grain and dairy prices would rise because many developing countries import these products and maintain internal prices above world prices. Ending this protection would increase imports and hence prices. Liberalizing the grain policies of developing countries would have a bigger impact on prices than liberalization by the OECD countries because the OECD countries' grain policies tend to offset one another.

6.83 The projections show that the main beneficiaries of unilateral liberalization are the liberalizers themselves. Industrial countries would gain $48.5 billion if they liberalized unilaterally; developing countries would gain $28.2 billion if they did the same. But each imposes losses on the other. If both groups liberalized together neither would gain quite as much individually but the world would be even better off.

6.84 So why do countries not tear down their agricultural policies? The reason, of course, is that within each country interest groups, whose political support the policies aim to capture, would lose. With OECD liberalization, the overall gain to these countries is $48.5 billion. But this figure comprises a net gain of $103.3 billion to OECD consumers and taxpayers and a $54.8 billion loss to producers.

6.85 Losses to farmers, however, are in some cases smaller if countries liberalize together than if they did so on their own. The reason is that the declines in producer prices would be less. Consider dairy products, one of the most protected products in industrial countries. Unilateral liberalization of the U.S. dairy policy would push up world prices by 5 percent (Table 6.7). This would imply a cut in U.S. producer prices by as much as 46 percent. But if all industrial countries were to liberalize

simultaneously, world dairy prices would rise 27 percent, requiring a drop in the U.S. producer price of only 24 percent. Indeed, if developing countries liberalized as well, the world price would rise above the former protected price.

6.86 The big losers from liberalization are the centrally planned economies. They would be worse off by $11 billion if the industrialized countries liberalized, by $13 billion if developing countries liberalized, and by $23 billion under global liberalization. They would reduce their imports under liberalization by less than developing countries would, and they would have less scope for exporting those goods whose prices would rise.

6.87 Would prices become more volatile if agricultural policies and trade were liberalized? Two recent studies indicate that liberalization would make prices more stable. According to one estimate, the variability of world wheat prices could be reduced by 48 percent if all countries were to end their protective wheat policies. A second study found that liberalization by industrial countries would reduce the price variability of all the major temperate-zone commodities. The variability of wheat prices would fall 33 percent; that of sugar by 15 percent (see Table 6.10). Liberalization by developing countries would stabilize prices even more because these countries insulate their domestic markets to a greater extent than do industrial ones; they also have a larger share of world consumption. This study needs to be hedged about by more caveats than usual: among other things, it assumes that internal prices everywhere in China and India would move in line with world prices. This seems unlikely, so consumption would not adjust fully to scarcity or abundance in world markets. Nonetheless, the results found in these studies, even if they exaggerate the impact of developing countries, confirm that liberalized trade is more effective at price stabilization than

even the most elaborate international commodity stockpiling schemes. It is to those efforts that we now turn in Chapter 7.

Table 6.10 Effects of liberalization on price instability, 1985

Commodity	Coefficient of variation[a]			
	Without liberalization	With industrial-country liberalization	With developing-country liberalization	With global market liberalization
Wheat	0.45	0.30	0.23	0.10
Coarse grains	0.19	0.17	0.14	0.08
Rice	0.31	0.25	0.14	0.08
Beef and sheep	0.06	0.04	0.05	0.03
Pork and poultry	0.09	0.07	0.06	0.04
Dairy products	0.16	0.07	0.07	0.04
Sugar	0.20	0.17	0.07	0.04

a. The expected deviation from the long-term average price in any particular year as a percentage of the average price.

Source: Tyers and Anderson, 1986.

Box 6.1 Price support in the dairy industry

The world market for dairy products is a creature of protectionism. Nearly every industrial country isolates and protects its dairy farmers by import barriers and domestic market intervention. Producer prices are determined by governments and are unrelated to the value of milk products in international trade. In OECD countries, average domestic prices have been roughly double world prices for the last twenty years, although international trade in dairy products is subject to so much dumping and "distress" sales that the world market price is itself greatly distorted. Farmers' responses to high internal prices have been rational: they have invested heavily in animals and equipment, they have adopted the latest research findings to improve yields, and consequently they have increased output (see Box figure 6.1). Governments have therefore found themselves buying increasing amounts of milk and accumulating huge stocks. These stocks have usually had to be disposed of on depressed world markets or given away as food aid.

In some extreme cases, EC farmers paid more to import feed-stuff for their cows than they could have received on world markets for the milk which the feed helped to produce. Not only was no surplus generated to cover the costs of domestic inputs--labor, transport, dairy equipment, processing, etc.--but the Community even lost foreign exchange. It would have been better off as a whole if some of these farmers had not worked at all--indeed, had been paid not to work.

The EC's budgetary rules compound the inefficiencies of its dairy support program. The financial burden of agricultural support is shared among countries roughly in proportion to GNP, but receipts from price supports are proportional to milk output. So countries race to increase national milk

output, for they receive the full intervention price from the CAP, but have to contribute only a fraction of that price. Indeed they are even encouraged to subsidize their milk production, for they receive Community reimbursement for part of their subsidy. The results have been dramatic. Almost 8 percent of the gross value of milk at domestic prices came from individual member countries' subsidies during 1979-81; CAP dairy expenditures have grown by over 20 percent a year for a decade; transfers from consumers and taxpayers reached $6,200 per dairy farmer ($410 per cow) in 1982.

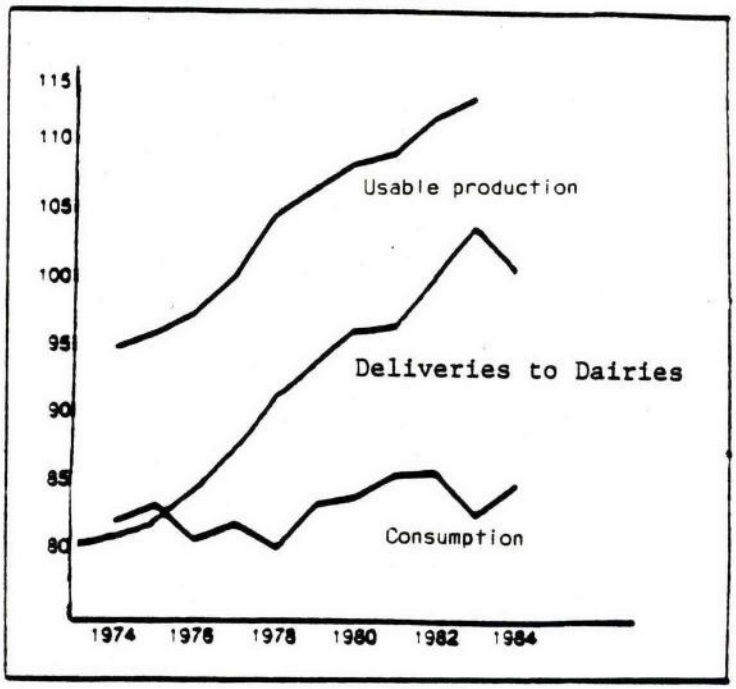
By April 1984, the burden of the EC's dairy policies had become unsupportable. Rather than reduce support prices, however, the EC imposed production quotas. These are fixed nationally and are generally distributed within each country to individual farmers. "Over-quota" production receives the world price or less, so there is a strong incentive to restrain production. Indeed production has fallen below quota as farmers sought to avoid having to sell milk at merely its world price. But it remains far above consumption. Although consumption runs at around 85 million tons a year, the quota is fixed at 99 million tons. The quota system therefore penalizes consumers by maintaining high prices, while encouraging an inefficient pattern of production, and institutionalizing the EC's current excessive output.

The United States has had a similar experience. Support prices for milk were steadily increased during the 1970s in the face of low world market prices. Net spending on dairy support programs (valuing products given away at their cost to the government) grew from $150 million annually to $3.0 billion between the mid-1970s and 1983-84; transfers to producers were estimated to have reached $26,000 per farmer in 1982 ($835 per cow). The government cut the producer price of raw milk from 13.1 cents per pound in 1982-83 to 11.6 cents in mid-1985, but nonetheless, stocks continued to

accumulate. Finally, in December 1985, legislation was passed to allow the government to control milk production by buying and butchering some 5 percent of U.S. cows.

Surpluses mostly end up in stockpiles, for under an agreement concluded in GATT's Tokyo Round, butter cannot be exported at less than $1,200 per ton. Stockpiling dairy products is expensive and quality is difficult to maintain. But patience can reap its own reward. In 1984 the EEC claimed that its stored butter had so deteriorated that it became a new, inferior product, butter oil. As there is no international agreement on butter oil, it was able to sell some of its stock to the USSR at $450 per ton--a mere 14 percent of the price paid to farmers.

Box figure 6.1 Milk production in the EC, 1974-84



Note: Data include butter, cheese, and powdered, milk, converted to fluid milk equivalents.

Source: Bureau of Agricultural Economics, Australia.

Box 6.2 Protecting sugar producers

Consumption of sugar and its very close substitutes, glucose sugar or high fructose corn syrup (HFCS), derives mainly from three sources: sugarcane, sugarbeet, and high-starch products such as maize. Sugarcane was the earliest and cheapest source of sugar, the other two expanded significantly only when supplies of sugarcane were curtailed. The possibility of obtaining sugar from beets was recognized in the late eighteenth century, but it took Britain's blockade of Continental Europe during the Napoleonic wars to make it commercially viable. Over 300 sugar-beet factories were established in France between 1811 and 1813. Peace and sugar imports brought about their demise, and it was not later in the nineteenth century that European beet production revived--once again behind protective barriers. Since then, sugarbeet production has enjoyed high protection.

The level of protection proved costly to industrial countries, especially when, in the 1970s, the new sweetener, HFCS, became available. HFCS developed in the shelter of sugar protection as the internal prices for beet and cane sugar were driven further above world market prices than were those of its own raw material, maize. HFCS is competitive only because cane sugar may not be imported at world prices.

The EC and the United States dealt with the impact of HFCS production differently but the effects on world trade in sugar and on developing countries were similar. The EC, already a major sugar exporter at the begining of the 1970s, included glucose sugar production in its quota system for sugarbeet, thus generating even more subsidized export surpluses. The EC share of world sugar exports rose from less than 9 percent in the 1960s to more than 20 percent in the 1980s, making the EC the world's largest exporter

in 1982. The United States, on the other hand, allowed the HFCS industry to expand behind an import quota, capturing a larger share of domestic consumption. Its share of world raw sugar imports dropped from an average 20 percent between 1960 and 1973 to around 10 percent in the early 1980s; import demand may fall to zero soon.

The United States' experience illustrates the practical difficulties of operating trade restrictions. Until 1983, imports of sugar mixed with as little as 6 percent of HFCS were not restricted under the sugar import quotas. This in effect allowed consumers to buy sugar at world prices, but growing imports led local producers to complain until the "loop-hole" was plugged. However, with the domestic sugar price four to seven times the world price, it was worth firms' extracting sugar even from processed products such as cake mixes. At first these products were trucked in from Canada. When that route was blocked--by means of an import prohibition--purchases were made from more distant suppliers until, in January 1985, emergency regulations imposed a quota on all imports of sweetened "edible preparations" for nine months. Unfortunately "edible preparations" included chicken pies, pizza and noodles (with a sugar content of 0.002 percent), so within two months the nine-month quota had been exhausted and imports of an unintentionally wide range of goods ceased.

Box 6.3 Land restrictions and part-time farming

Agricultural policy in Japan is based on two pieces of legislation passed in the 1940s. Aiming to combine self-sufficiency in rice with stable consumer prices, the Staple Food Control Act of 1942 divorced producer and consumer prices. It said that government purchase prices "are to be determined for the purpose of securing reproduction of rice by taking into consideration the cost of production, prices and other economic conditions." Consumer prices "are to be determined for the purpose of stabilizing the consumer's budget by taking into consideration the cost of living, prices and other economic conditions."

The second piece of legislation concerned land reform. The Agricultural Land Law of 1952 transferred the ownership of approximately one third of all farm land to former tenants; imposed maximum sizes on farms; prohibited nonfarm residents from owning farm land; prohibited resident landowners from renting out more than one hectare; and effectively outlawed the sale of land between farmers. These measures reduced the proportion of farms operated by tenants from 46 percent in 1945 to 10 percent by 1950 and 5 percent by 1965. Some renting was permitted but rent ceilings and the difficulties of reoccupying rented land made it unattractive. Even after later liberalization only 4 percent of Japanese farm land was leased in 1978.

The land law inhibited the creation of bigger farms. The average Japanese farm expanded from 1.01 ha. in 1950 to 1.17 ha. in 1977, a period when farms in the United States grew by 50 percent on average. At the same time, the cultivated land area in Japan fell by about 8 percent and the amount of land that was double-cropped from around one-third to almost zero. At the same time agricultural employment declined at about the same rate as in other countries.

Because the farms were small, total factor productivity has not risen as rapidly in Japan as elsewhere in the world. Size has been critical since 1960 when technology became more sophisticated and capital intensive. In 1960 the costs of rice cultivation were 20 percent higher on farms of 0.3 to 0.5 ha. than on those of over 3 ha.; by 1975 the differential was over 60 percent.

In 1955 Japanese agriculture was reasonably competitive--certainly compared to Western Europe. The farm price of rice was only 13 percent above the import price and Japan was close to self-sufficiency. Thereafter, however, rising labor costs--driven by Japan's industrial success--coupled with the cost of increasing capital intensity on such small farms pushed up costs on farms faster than in the rest of the economy. Given the government's aims of promoting self-sufficiency and of supporting the farm labor force, more protection from imports became inevitable. Behind a strict import quota, the domestic price of rice rose from one and a half times the import price in 1961, to more than double it in 1970 to four times as much in 1979. Similar, though less extreme relative price movements occurred for wheat, beef, dairy products, and soybeans.

Restrictions on ownership and leasing have encouraged farmers to subcontract certain tasks such as weeding, soil preparation and harvesting. More commonly, however, the restrictions have encouraged farmers to take part-time or full-time jobs outside agriculture. Only 20 percent of Japanese farm households contain one or more full-time farm workers; 70 percent obtain more than half their income from outside activities. Living standards in these latter households are around 25 percent higher than in full-time farm households.

The 20 percent of farms that have one full-time farm worker produce about 60 percent of total agricultural production on 48 percent of the land.

However, in rice production--which lends itself well to part-time work --farming is dominated by the part-timers who produce about two-thirds of total output. It is the part-timer's costs, therefore, which tend to define the support price for rice.

In 1980, new legislation permitted larger farms and encouraged part-time farmers to lease their land. Simultaneously, attempts were made to keep support prices below the average costs of very small farms. Although the domestic price fell back to only three times the import price during the 1980s, little change has occurred to the structure of farming. The principal beneficiaries of Japanese rice policy are still part-time farmers, who, compared with the full-timers, farm inefficiently but live comfortably. Full-time farmers have been prevented from exploiting their efficiency by the legacy of restrictive land legislation.

Source: D. Gale Johnson (1985).

Box 6.4 Hidden subsidies--the crow's nest rates

Not all export subsidies draw directly on the public purse, and those that do not can be very long-lived. In 1897, the Canadian Government subsidized the building of a railroad through the Crow's Nest Pass of the Rocky Mountains. In return, the railroads agreed to freeze their freight rates for transporting wheat and coarse grains from the Western Provinces to the ports for export.

By 1981-82, it is estimated, farmers were paying only one sixth of the cost of freight on grain exports. The railroad--or rather, its other customers--contributed most of the remaining five-sixths. The subsidy amounted to about $30 per ton, equivalent to about 15 percent of the price of wheat and about 25 percent for barley. The subsidy has raised grain and oil-seed prices in the Prairie provinces, increased rents and discouraged the development of alternative industries such as lumber and coal (which pay excess transport costs) and agro-processing and livestock (which pay higher grain prices). As an implicit tax on the railroads, it has also led to substantial under-investment in rail facilities, which hinders all economic activity in the Prairie provinces. Finally, it has caused additional distortions elsewhere in the economy. To compensate eastern livestock farmers for the effects of the Crow's Nest Rates on domestic feed prices, further subsidies were introduced to encourage the shipment of feed grains from western Canada for domestic use in the east.

Recently, the government has begun to reform the Crow's Nest System. It now pays the railroads $659 million a year plus a declining share of any freight rate rises. By 1990 it is estimated that farmers will be paying about half of the freight costs themselves.

Box 6.5 Consequences of U.S. farm policy

The United States has operated large-scale farm programs for over fifty years. The extent of intervention--measured as real budgetary costs per farm or acreage affected by the programs--reached its highest level in the 1980s.

Current policy for the main U.S. crops has three principal features:

- o a "target" price, which the government attempts to guarantee to farmers via payments;
- o a "loan" rate which determines the price at which the government stockpiles crops to support the market; and
- o an acreage reduction program in which land must be held idle in order to qualify for the target price and loan rate support.

The target price encourages farmers to increase their output and thus tends to drive down the market price. The loan rate, on the other hand, limits price declines and causes government stocks to accumulate. Government stocks tend to become excessive, leading to production control programs to hold down output and get rid of stocks. In 1983, the government, with some $17 billion of accumulated stocks, instituted the Payment-in-Kind (PIK) program which took 20 percent of cropland out of production; in return, farmers were given commodities up to 80 percent of the yield that could have been produced on the idled land.

Because the United States is such a large agricultural exporter and has few significant trade barriers, changes in its domestic prices also change world market prices. The target price program tends to reduce the world price by encouraging production, while the loan and acreage reduction programs tend

to increase it. In 1985, it was estimated that policies on grains, rice, and cotton, reduced output and increased world prices. The programs for tobacco and peanuts involve no subsidy payments but restrict output directly. The dairy and sugar programs rely on government stockpiles and import restrictions.

Box table 6.5 shows estimates for the effects of the main commodity programs in 1985. The income gains reaped by producers are less than the price increases suggest because of the lost income from the 34 million acres of land that farmers had to hold idle to qualify for payments. They still amounted to $11.6 billion per year, but the estimated consumer and taxpayer

Box table 6.5 Effects of U.S. farm policies by commodity, 1985

Commodity	Increase in producer price (percent)[a]	Increase in market price (percent)[a]	Net gain to U.S. producers (billions of dollars)	Net loss to U.S. consumers and taxpayers (billions of dollars)
Coarse grains[b]	27	6	3.6	5.3
Wheat	47	2	1.7	2.2
Rice	58	3	0.4	0.6
Cotton	58	3	1.1	1.5
Sugar	309	309	1.8	2.9
Dairy products	16	16	1.3	2.0
Tobacco	25	25	0.6	0.4
Soybeans[c]	2	2	0.4	0.4
Other (beef, peanuts, wool)	4	4	0.7	0.7
Total	--	--	11.6	16.0

a. Compared with estimated price in absence of programs.
b. Corn, grain sorghum, barley, and oats.
c. Soybeans have no target price and a relatively low loan rate, but benefit indirectly from grain price supports.

Source: B. Gardner, 1986.

losses were higher: $16 billion. When overall administrative costs of $0.4 billion are included, the programs impose an efficiency loss of $4.8 billion on the economy.

The U.S. programs impose losses on those countries outside the United States which are net importers of agricultural goods; they generate gains for exporting countries. The only exception is sugar, where the United States is a net importer; its import quotas drive down the world price. However, most imported sugar is admitted on a concessional basis at the high U.S. price, and for the lucky sugar exporters who receive quotas, the gains from this offset the losses due to low world prices.

The estimates in Box table 6.5 indicate the benefits and drawbacks of ending the farm programs during the first few years in which the unprotected farm economy adjusts. The estimates assume that exports would respond more sharply to price changes over that time than they do form year to year. Over the longer-term, however, the responsiveness of farming to price changes means that producers would not lose as much as these estimates indicate. As returns in farming increased during the 1970s and were then cushioned by price supports in the early 1980s, farmers added marginal land and made large capital investment to expand their operations. The dairy industry provides an extreme instance: processing plants were built principally to convert milk into products which were then bought up by the government. If the programs were ended, it would take perhaps a decade for farming to adjust fully but, once the adjustment had been made, the farm economy would be put on a more sustainable and adaptable footing. This implies that from the long-term viewpoint the losses from the programs would take the form of a decline in asset values, principally land, which now reflect the expected gain from future programs.

Farmers are not better off by $11.6 billion a year than they would have been if the farm programs had not been reinforced after the 1970s commodity boom. They may in fact have been made worse off because policies encouraged the mistaken belief that the high returns of 1970s would be permanent.

Box 6.6 Old wine in new bottles

The arguments in this section are far from new. They date back to the English economist David Ricardo, who was the first to analyse formally the benefits of free trade. His arguments against the early nineteen century form of agricultural protection--Britain's so-called Corn Laws--are as relevant today as they ever were:

o "[The price of] corn is not high because a rent is paid, but a rent is paid because corn is high." (On the Principles of Political Economy and Taxation, 1817, p. 74.)

o "The sole effect of high duties on the importation either of manufactures or of corn, or of a bounty on their exportation, is to divert a portion of capital to an employment, which it would not naturally seek. It causes a pernicious distribution of the general funds of the society--it bribes a manufacturer to commence or continue in a comparatively less profitable employment. It is the worst species of taxation, for it does not give to the foreign country all that it takes away from the home country, the balance of loss being made up by the less advantageous distribution of the general capital" (ibid., p. 314).

o "The market price of corn would, under an increased demand from the effects of an [export] bounty ... be raised. By a continued bounty, therefore, on the exportation of corn, there would be created a tendency to a permanent rise in the price of corn, and this, as I have shown elsewhere, never fails to raise rent" (ibid., p. 312).

Box 6.7 Commodity prices, rent, and rates of return

When the price of an agricultural commodity rises, the immediate result is an increase in the rate of return to farmers. If they expect the price to remain high in the future, farmers will grow more. Ordinarily, this would ordinarily tend to drive the price down again. But if the price rise is the result of government policy, and can be maintained by subsidies or government purchases, it may be prove long-lived. Then, as farmers attempt to increase their output, they compete for resources with businessmen elsewhere in the economy. For so long as they are prepared to pay slightly more for labor and capital farmers can attract these resources into agriculture. Prices of labor and capital in agriculture are therefore determined by the returns earned elsewhere, and remain independent of agricultural prices and policy. In the long term, this is true even for farmers themselves. If farm profits fall low enough, farmers will leave farming more rapidly.

For land, the situation is different. The stock of cultivatable land in industrial countries is, in effect fixed , so excess demand resulting from high farm prices and incomes will bid up land rents. This will continue until the excess demand disappears--that is, until farmers earn only average profits. For this to happen, all the extra revenue generated by higher prices must, roughly speaking, be absorbed into rental values. Of course, if rents rise, so will the price of land for people will try to buy land until the rate of return equals that available elsewhere in the economy. The upshot is that, in the long run, neither nor capital, land-users, nor land-buyers gain from higher agricultural prices. Only land-owners gain because they can rent or sell land at higher prices.

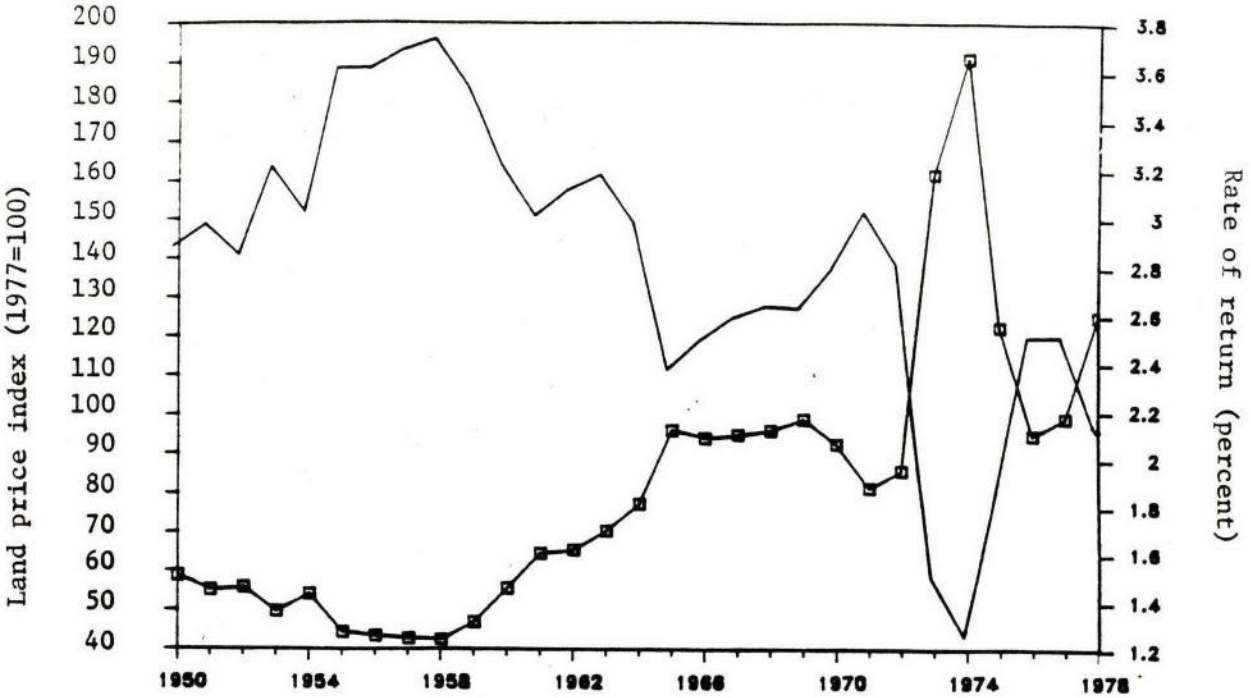
Measuring rent as gross farm incomes minus the cost of inputs and (for example, wages, interest, seed, and fertilizer), Box figure 6.6A plots the rate of return to land against land prices in the United Kingdom. Sharp increases in farm incomes during the 1960s and in 1973 when Britain joined the EC are reflected in land prices but not in the rate of return, which has been in decline for most of the period since 1955.

Box figure 6.7B shows similar information for the United States. With world market conditions, a study indicated that payments to farmers and acreage diversions were effective in raising the rental returns to land. Each $1 billion permanent rise in government payments generated a $.96 increase in rent per acre and a $15.21 rise in the price of an acre of land. There was no effect on the rate of return to investment in farming. United States' policies were more unstable than those of the United Kingdom, and commodity prices varied more. Large short-term fluctuations occured, especially during the commodity-price boom of the 1970s and collapse of the 1980s. But, overall the rate of return in agriculture tended to follow the general rate of return in the economy and was not affected by agricultural policies.

Sources W. B. Traill. "Land Values and Rents: The Gains and Losses from Farm Price Support Programmes." Bulletin 175, Dept. of Agricultural Economics, University Manchester, August 1980.

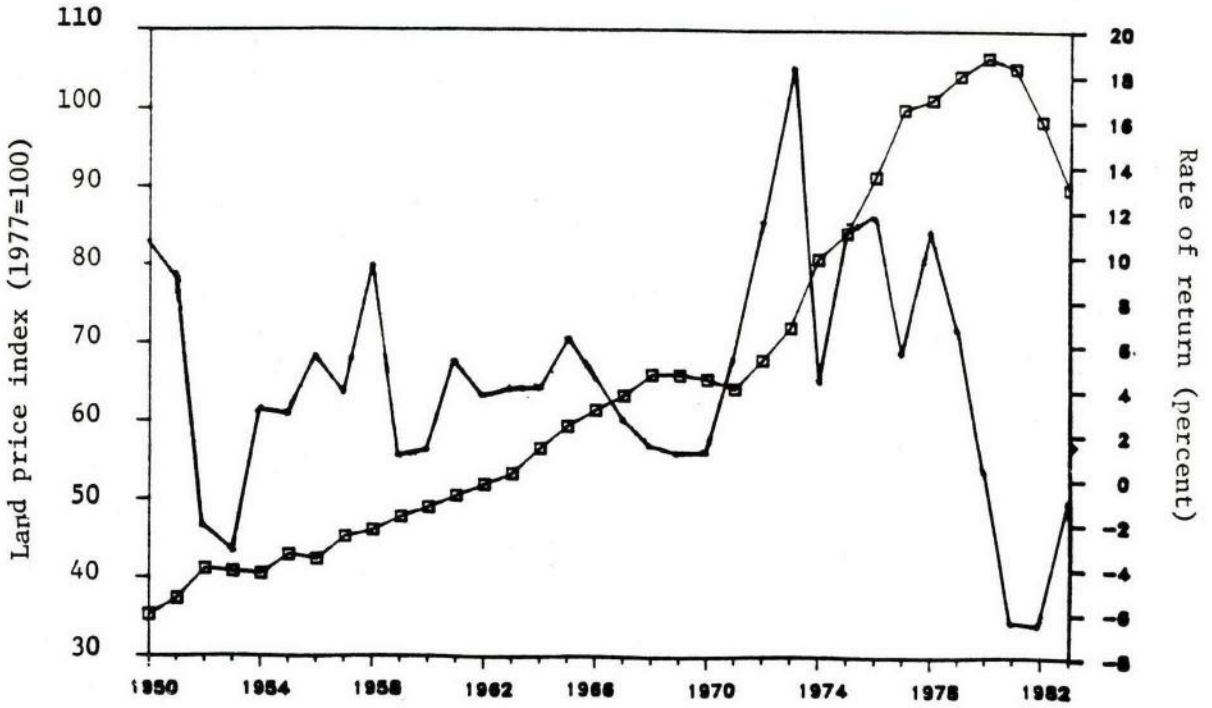
Tim Phipps. "Farm policies and the Rate of Return on Investment in Agriculture." Occasional paper, American Enterprise Institute, Washington, D.C., May 1985.

Box figure 6.7A Real land prices and the rate of return to land in the United Kingdom, 1950-78



[] Land price index (left scale)
___ Rate of return to agricultural land (right scale)

Box figure 6.7B Real land prices and the rate of return to land in the United States, 1950-83



[] Land price index (left scale)
___ Rate of return to agricultural land (right scale)

Box 6.8 Protection and agroprocessing

Most goods go through several stages of processing between their raw form and final purchase by consumers. International trade can occur at any stage so the location of particular activities is a sensitive issue.

In some cases, transport costs and technology determine location. The dilution and bottling of concentrated soft drinks takes place near the final point of sale to economize on transport costs. For the same reason, Cassava is converted into pellets in its country of origin before export. In many cases, however, the best place to locate processing industry is less clear-cut, and depends on the relative prices of a wide range of production costs. For labor-intensive industries in particular, developing countries should be well represented among processing countries. Yet this is much less the case than might be expected.

An important reason is the pattern of industrial countries' protection. In most goods industrial countries have "escalating" tariffs --that is, tariffs are higher on more highly processed forms of the good. For many agricultural goods, the higher tariffs are buttressed by a wide array of nontariff barriers. As goods become more highly processed--and embody more labor and capital services--developing countries therefore face increasing barriers to sales in the world's major markets. Box table 6.8 illustrates tariff and nontariff barriers on a range of products imported by industrial countries.

Even apparently mild escalation can severely disadvantage developing countries trying to establish a processing industry. Suppose that 70 percent of the cost of processed leather is accounted for by the raw hides, and that

all countries can purchase hides at the same price on world markets. A developing country producer making leather worth $1 on the world market earns 30¢ out of which he must pay for labor and capital and retain profits. Now consider an industrial country producer producing behind a tariff barrier of 4 percent. The same leather worth $1 on world markets, sells for $1.04 domestically, so he earns 34¢--percent more than the developing country producer. That is, the developing country producer has to be 13.3 percent more efficient than the domestic producer if he is to sell in the industrial country. Economists refer to this 13.3 percent--the extent to which value added behind the tariff wall exceeds value added at world prices--as the effective rate of protection.

The degrees of escalation in the table often exceed 4 percent, so rates of effective protection can be very high. In an extreme case, that of Sweden in 1969-70, effective rates of protection have been as high as 1480 percent (soybean oil), 1050 percent (coconut oil), 165 percent (corn milling) and 102 percent (flour).

By blocking this first and most natural step towards industrialization, escalating protection on agro-processing severely disrupts the process of development. Developing countries often respond by subsidizing local processing industries, so that political rather than commercial criteria determine the pattern of industry. Almost inevitably, this encourages inefficiency, compounding the direct harm arising from industrial countries' tariffs.

Box table 6.8 Tariffs and NTBs in industrial countries

Product and stage of production	Average tariff rates[a]			Percentage of imports subject to NTBs[b]		
	Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3
Fish Stage 1: fresh Stage 2: prepared	3.5	5.5	..	35	31	..
Vegetables Stage 1: fresh or dried Stage 2: prepared	8.9	12.4	..	39	48	..
Fruit Stage 1: fresh Stage 2: prepared	4.8	14.4	..	20	54	..
Coffee Stage 1: green, roasted Stage 2: processed	6.8	9.4	..	11	17	..
Cocoa Stage 1: beans Stage 2: processed Stage 3: chocolate	2.6	4.3	11.8	0	0	14
Oils Stage 1: seeds Stage 2: fixed veg. oils	2.7	8.1	..	33	56	..
Tobacco Stage 1: unmanufactured Stage 2: manufactured	55.8	81.8	..	11	22	..
Rubber Stage 1: natural Stage 2: processed Stage 3: rubber articles	2.3	2.9	6.7	0	6	14
Leather Stage 1: raw hide and skin Stage 2: processed Stage 3: leather articles and footwear	0.0	4.2	9.6	0	13	26

a. Data are for Australia, Austria, Canada, the EC (excluding Greece), Finland, Japan, New Zealand, Norway, Sweden, and Switzerland.
b. Data are for Australia, Austria, Canada, the EC (excluding Greece), Finland, Israel, Japan, New Zealand, Norway, Sweden, Switzerland, and the United States.

Source: UNCTAD TD/B/940, Yeats (1981).

Box 6.9 Simulation of liberalized agricultural policies

Assessing the consequences of agricultural policy liberalization is difficult, because in industrial countries there has been little policy reform in practice. Lacking direct observation, one must rely on a model which simulates the effects of lowering trade barriers. An example of such a simulation is a study by Tyers and Anderson.

Tyers and Anderson represent the world agricultural economy as a system of supply and demand equations for seven commodity groups in thirty countries or groups of countries. The commodities are wheat, rice, coarse grains, beef and lamb, pork and poultry, dairy products, and sugar. The effects of tariff and nontariff barriers are represented by net protection coefficients, which measure the percentage difference between the countries' domestic prices and the world prices for each commodity. Currently, these are measured over the period 1980-82, see Table 6.1.

The model is "solved" by finding a set of international prices at which world supply and demand for each commodity balance and a set of domestic prices at which each country's own markets clear. The effects of liberalization can be worked out by solving the model once assuming current agricultural policies which of course generates prices very like actual prices--and once assuming that the trade barriers and domestic interventions have been removed. The difference in prices represents the effects of liberalization. Once the prices are known, trade flows and transfers of income can be calculated for each country and commodity.

The Tyers and Anderson model can allow for random shocks to represent weather and disease. Under both assumption--actual trade policy and liberalization--the model can be solved 100 times using different shocks. These experiments make it possible to measure how different policy regimes cope with external shocks.

The results of this model are reported variously in Tables 6.7 to 6.9 in the text. Their relevance to the assessment of the long-run effects of liberalization in 1986 depends on a number of factors. First, the accuracy of the estimates of protection and the responses of supply and demand to changes in prices. While these can never be known with certainty, the estimates used here are based on the most recent data and most thorough analysis possible. Second, on changes in protection since the model's 1980-82 base. Third, on the differences between behavior in the long run--when investment and research effort can be redirected and technology changed--and the medium-run estimates of behavior in the model. Fourth, on the importance of the model's limited coverage--ignoring, as it does, tropical agriculture and all nonagricultural activities and income. Fifth, on the assumptions about how countries whose liberalization we are not considering react to the new world environment entailed by their neighbors' liberalization.

This list clearly suggests that the model results will be very imprecise. However, it does not undermine the basic messages of the text, for its suggests that the quoted figures will almost certainly be underestimates of the benefits of trade liberalization to developing countries: current protection coefficients exceed these of 1980-82; in the long run higher prices will stimulate investment and research in developing countries' agriculture; unshackling agriculture will stimulate savings, growth, and efficiency throughout agriculturally dependent economies; if developing countries' export goods were liberalized as well as their (temperate-zone) import goods, trade expansion would occur; and if developing countries exploit the opportunities that industrial country liberalizatin grants them, by deregulating their own agriculture, significant supply expansion would be feasible.

Overall, therefore, while the computer model is no substitute for economic analysis of observed policy experiments, its estimates of the benefits of trade liberalization indicate the strong advantages of such a policy.

Chapter 7

Draft No. 5
March 21, 1986

Chapter 7 International Initiatives in Agricultural Trade

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Chapter 7 International Initiatives on Agricultural Trade

7.1 International cooperation in agricultural trade has long been accepted as an effective means of fostering economic growth in developing countries. Enthusiasm for cooperation has been dented, however, by the continued failure to liberalize agricultural trade and by the declining and volatile agricultural terms of trade faced by some developing countries. These factors have prompted a search for means other than unregulated commercial trade to serve the interests of developing countries.

7.2 This Chapter describes how these initiatives have affected the international trading system and assesses their record. The first section examines the economics of commodity agreements and concludes that they have not lived up to expectations. The next section deals with schemes to compensate commodity producers for shortfalls in their export earnings. It concludes that such schemes involve certain practical difficulties, but are more efficient than commodity agreements. The Chapter then looks at attempts to improve developing countries' access to the markets of industrial countries. These efforts have often taken the form of preferential treatment being granted to particular groups of developing countries--an approach of limited value, because it can create additional distortions of world trade, hurting other developing countries, without reducing the general level of protection. The final section of the Chapter considers food aid. In emergencies, famine relief has an obvious humanitarian role, and longer-term food aid can also be useful in special circumstances. However, since it can easily discourage local production of food, it needs to be offered only with careful consideration of market consequences.

International commodity agreements

7.3 An international commodity agreement (ICA) is a formal agreement between the governments of the countries producing and consuming a commodity to control the market for it in some respect. About forty ICAs, covering thirteen commodities, have been concluded since 1931. Although their detailed objectives have varied, virtually all have aimed to stabilize and/or increase the price of the commodity concerned. Most have run into severe difficulties in the medium- and long term. At the end of 1985 only four agreements were still in operation.

The purposes of ICAs

7.4 The precise purposes of ICAs differ from case to case, but two overriding themes are evident. First, to stabilize commodity prices. Second, to ensure "fair", "remunerative" or "equitable" prices--in plain language, to raise them. While the two aims are frequently combined--and confused--they are logically quite separate and even potentially contradictory. They have different distributional implications and require different tools of policy.

7.5 The instability of commodity prices is notorious, and many economists argue that greater stability would benefit both producers and consumers. For consumers, the most convincing argument for stability is that frequent price changes cause uncertainty and so reduce the efficiency of commodity-using industries. Against that, consumers can actually benefit from price fluctuations caused by changes in supply (as they mostly are in the case of foods): by buying more of a good when its price is low and less when it is high, purchasers can reduce the average price they pay for a given volume.

7.6 For producers, price fluctuations also cause uncertainty and make planning difficult. This can reduce production: there is evidence that uncertainty causes farmers to reduce inputs and outputs (see Box 5.2 in Chapter 5). Similar arguments apply to whole countries. Since producers usually derive a bigger part of their income from the commodity than the consumer spends on it, a given change in price has a greater proportionate effect on producers' real income. If a country is heavily dependent on a commodity for export revenue, price fluctuations can seriously disrupt its economy.

7.7 Important though these arguments are, they ignore two points. First, the drawbacks of commodity instability concern fluctuations in earnings rather than in prices per se. If a country can offset these fluctuations by borrowing or by using reserves, price instability probably does it little harm. Second, stabilizing prices may not stabilize export earnings; for example, supply shocks in a market facing very inelastic demand cause less fluctuation in the value of trade if prices vary than if they do not. Both of these reasons suggest that ICAs do not address the central aspects of instability.

7.8 Many ICAs have also tried to produce higher prices for commodities, though that goal is often only implicit. Such attempts have caused the breakdown of many agreements, most spectacularly in the recent case of the International Tin Agreement. The drive for higher prices has also undermined several negotiations, including those for UNCTAD's Integrated Programme for Commodities.

The instruments of ICAs

7.9 The two main objectives of ICAs have been pursued through two main instruments: buffer stocks to stabilize prices, and production and export controls to raise them. The problems with international buffer stocks are similar to the problems of running national buffer stocks discussed in Chapter 5. The basic question to ask is why they are desirable. By buying a commodity when its price is low and selling when it is high, a buffer-stock manager is behaving just like a stabilizing and profit-making speculator. In that case, why should stabilization not be left to private speculators? Why do governments need to undertake transactions that do not look attractive to private dealers? Three possible sets of reasons exist. First, speculation might not always be stabilizing: by action or merely the threat of it, a buffer-stock manager may be able to offset or discourage destabilizing speculation. This argument is largely hypothetical: there is no evidence that speculation is commonly destabilizing. Second, the buffer-stock manager might have better information than private speculators and thus be able to push the market towards the long-run price more directly than they can. The manager could have access to confidential material, for example. Third, the buffer-stock manager may have access to more or cheaper capital than private traders. These advantages would allow him to trade more, or on finer margins, and hence increase his power to stabilize prices. Whatever the truth in these last two arguments, they do not prove the need for buffer-stocks but for disseminating information and improving the workings of capital markets.

7.10 Even if greater price stability is deemed desirable, an international buffer stock would be a cost-effective means of achieving it only if it overcame several practical difficulties:

o Fixing the target range for prices. The narrower the range, the greater the chance that it will be breached. This possibility actually may precipitate fluctuations that would not occur in the absence of the buffer stock; the mere existence of a narrow range for target prices can encourage speculation against the ceiling and floor, as well as reducing the level of private stocks that might be used to moderate price changes outside the declared range.

o Defining the price range with respect to both the location and grade of the commodity and the currency of denomination. Even if the buffer stock stabilizes its chosen price perfectly, producers interested in other grades and other currencies will still face uncertainty.

o Choosing the reference price. Over the long-run, buffer stocks should stay the same size, so their price range must include the long-run market-clearing price. However, this tends to change over time, making it hard for the buffer-stock manager to know whether his current target will eventually exhaust his physical stocks on the one hand or his cash resources on the other.

o Deciding the size of a buffer stock. It is impossible to guarantee that a buffer stock will never exhaust its stocks or its cash: there can always be runs of good (or bad) years. For the ICA to be credible, however, the probability of exhaustion must be small. The optimum size of a stockpile depends on the trade-off between the costs of holding it and the benefits of improved credibility.

o Taking account of the deterrent effect that buffer stocks have on private holders of stocks. It has been estimated that for every ton added to the United States' stockpile of wheat between 1977 and 1982, between half and

three-quarters of a ton was withdrawn from private stocks. Such withdrawals obviously offset much of the buffer stock's stabilizing influence, and add considerably to the strain on its resources.

7.11 These difficulties do not rule out a successful buffer-stock operation, but they do reduce its chances. Against the possibility of success must be set the known costs of running a buffer stock. These include the administrative expenses of bodies negotiating and monitoring the ICA, interest foregone on the value of physical stock, storage costs, physical wastage, and the interest differential between the returns to long-run productive investment and the short-term interest that the buffer-stock manager can earn on his unused liquid reserves. He can, of course, make money by buying cheap and selling dear, but this depends on the buffer stock being able to achieve its goals. As excess stocks have to be sold, potential profits often turn out to be actual losses.

7.12 The second objective of ICAs--to raise commodity prices--can ultimately be achieved only by controls on production. ICAs adopting such controls are basically acting as producers' cartels and face several familiar problems. The cartel will be ineffective if any significant suppliers remain outside it; it will fail to raise producers' earnings (as opposed to prices) if the good can easily be replaced by other commodities, making the demand for it price elastic; and it will have to allocate quotas among producers, and police its restrictions effectively. Even in the case of oil--thought to be the most promising candidate for cartelization--these problems have not been overcome.

7.13 Among agricultural products, very few ICAs have tried to control output by internationally negotiated production quotas: the early agreements on coffee (1962) and cocoa (1972 and 1975), are perhaps the most prominent examples. It

has been more common for producers to impose production quotas nationally so as to fulfill internationally agreed restrictions on exports. Examples of these include Brazilian coffee and set-asides for wheat in the United States. Recently, however, export controls have been supported more by national stockpiles than by production limits. Their overall effect is then rather like that of buffer stocks, for the ICA arrangements typically state that whenever the world price rises above some limit, export quotas may be increased and national stocks run down. Unlike production quotas, therefore, export controls are used to try and stabilize prices rather than raise them.

7.14 As such, export controls are subject to all the problems already mentioned, as well as some more of their own. First, quotas tend to ossify the pattern of supply. Even if they are initially allocated to low-cost producers, thereby minimizing the worldwide costs of supplying a certain volume of a commodity, they rarely continue to perform this function as economic conditions change. Potential newcomers are prevented from entering markets even if they have a comparative advantage. Second, the decentralized administration of quotas tends to produce "lumpy" stock movements. Once the market price rises to a point where countries are allowed to increase exports, there is a strong incentive to expand them rapidly before controls are reimposed. Third, policing the agreements can be very difficult.

Assessment

7.15 For all the reasons discussed in this section, ICAs have not been a success in practice. In recent years, there have been four of them in agriculture--coffee, cocoa, rubber and sugar--and one other, in tin. Their main features are summarized in Table 7.1 and their history in Figures 7.1 (A)-(E). Box 7.1 discusses their recent experience in some detail. All of

Table 7.1 Current commodity agreements

Item	Coffee	Cocoa	Rubber	Sugar	Tin
Date of first agreement	1962	1972	1980	1954	1956
Date of current agreement	1983	1981[a]	1980	1978[b]	1982
Duration (number of years)	6	3	5	5	5
Extensions (number of years)	..[c]	2	2	2	2
World trade (billions of dollars in 1984)	11.0	2.6	3.6	10.1	2.4
Percentage from developing countries	76	79	93	75	74
Percentage from low-income countries	16	14	6	2	5
Dependency[d]	21	6	3	9	2
Principal instrument	export quota	buffer stock	buffer stock	export quota	buffer stock and export quota
Permitted price range (percent)	±15	±18	±20	±13	±13
Buffer stock as a percentage of 1980-83 average consumption	..	16	15	..	31

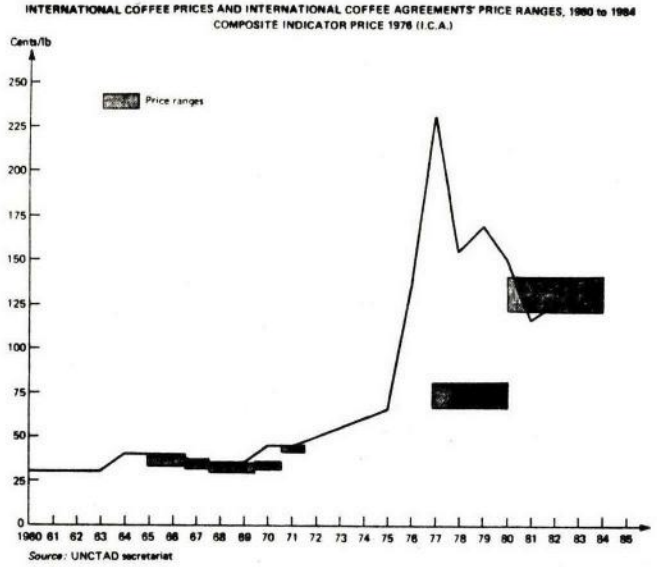
a. Expired September 1985; negotiations on renewal abandoned in spring 1986.
b. Economic provisions expired December 1984.
c. Extended for an indefinite period.
d. Number of countries, based on a sample of eighty-eight, in which the commodity accounted for more than 10 percent of exports in 1980.

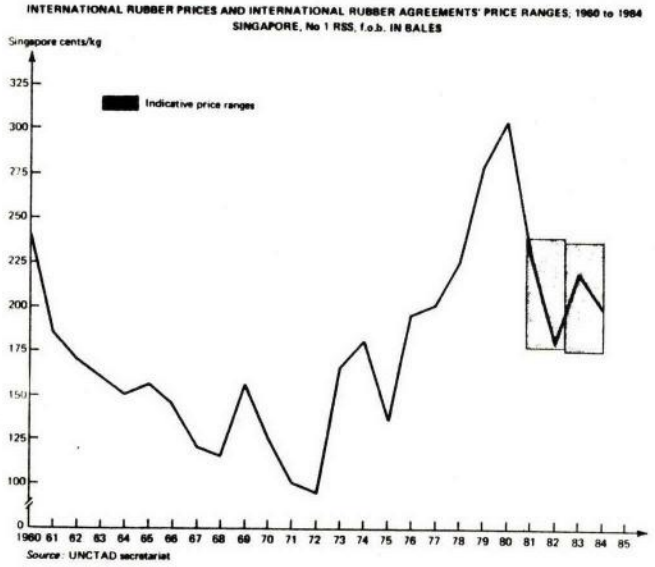
Source: Gilbert (1985), Tables 7.1(A) to (E)

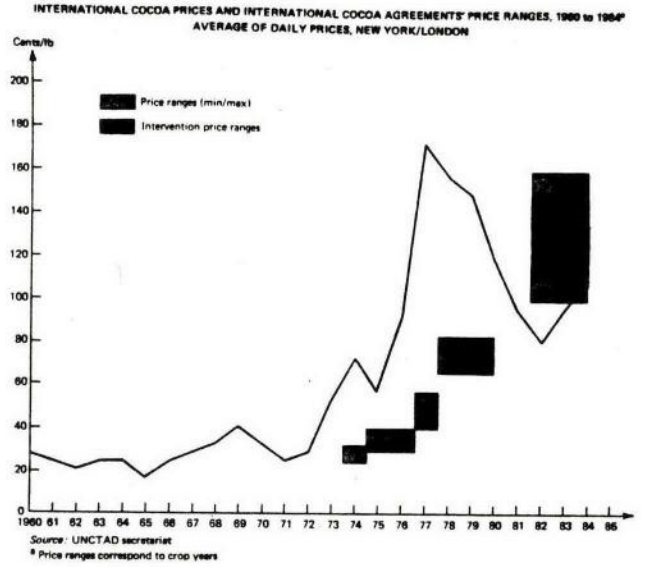
them except coffee face uncertain futures. Attempts are being made to revive the tin agreement; negotiations on rubber and on sugar have collapsed. The sugar agreement has basically lapsed, as far as market intervention is concerned.

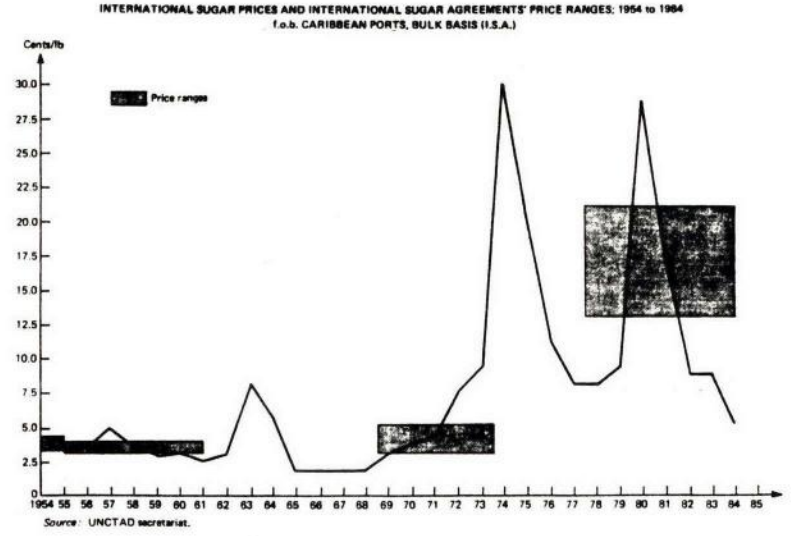
7.16 The prospects for ICAs are therefore bleak. Not only are specific agreements proving hard to operate and renegotiate, but much grander plans for strengthening market interventions have been abandoned. The most prominent example was UNCTAD's proposal in 1976 for a Common Fund within the Integrated Program for Commodities (IPC). This would have established common financing for agreements in ten leading commodities. The plan led to the ICAs on cocoa and rubber, but that was all.

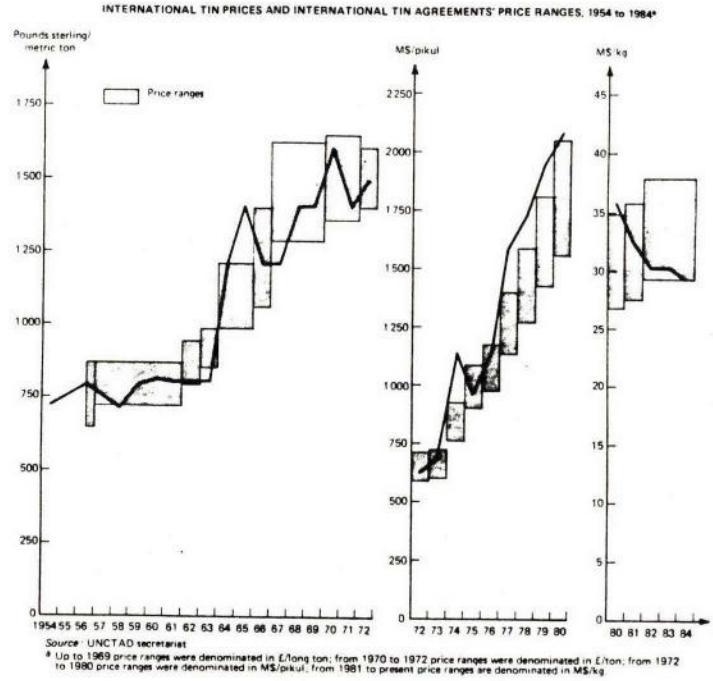
Figure 7.1 Commodity agreement performance











7.17 The argument for ICAs is that price fluctuations and uncertainty are harmful. Rather than try (and almost certainly fail) to eradicate price movements, it may be more useful to find ways of alleviating their effects. One obvious remedy is to encourage traders to use forward, futures and options markets. Though their details vary, basically each allows a trader to negotiate now the terms on which he will trade in the future. This reduces uncertainty, broadly achieving the same result as a successful attempt to stabilize prices. In addition each market participant can choose how much stability he wants (at the going price) rather than having to accept the choice of a buffer-stock manager. The markets are not at present suited to the needs of small commodity producers, but could be adapted and developed (see Box 7.2).

Compensatory finance

7.18 The main argument for stabilizing commodity prices is that it stabilizes the export earnings of commodity producers, and hence minimizes disruptive fluctuations in their imports, investment, and fiscal balances. The previous section showed that buffer-stock policies could not be relied on to stabilize prices over the medium term; and that even if they could, they are expensive to operate and do not necessarily stabilize export earnings. This section examines an alternative approach--the use of borrowing to stabilize a country's imports when its export earnings are fluctuating. Compensatory borrowing offers a cheaper route to stability because money is cheaper to store and administer than commodities. It can also be easily extended to cover temporary rises in import prices, for example, or even increases in import requirements when crops fail.

7.19 Individual countries have two potential sources of compensatory finance. First, they can accumulate international reserves in good years and use them in bad ones. However, they thereby lose the returns they would have had if they had undertaken productive investments instead of holding liquid assets. Second, they could borrow on private markets when their export earnings fall. The possible drawbacks of this approach are the costs and difficulties of private borrowing, especially for the poorest countries. Since both sources are particularly difficult for developing countries to use, this group benefits most from official schemes of compensatory lending.

7.20 The purpose of compensatory finance is to maintain spending in the face of a temporary fall in export receipts. To achieve this, schemes must be clear about what they are compensating for, quick to identify shortfalls, and realistic in their lending conditions.

7.21 The two schemes currently in existence represent different approaches to compensatory financing. The IMF's Compensatory Financing Facility (CFF), established in 1963, is designed to address the adverse effects on a country's overall balance of payments arising from a shortfall in its total export earnings. The EC's STABEX is a commodity-specific scheme that provides compensation to individual countries associated with the EEC for shortfalls in their export earnings from individual agricultural commodities. Whereas a basic requirement for use of the CFF is the existence of a balance of payments need, there is no such need requirement under STABEX.

The IMF's Compensatory Financing Facility

7.22 The purpose of the CFF is "to provide financing assistance to members experiencing balance of payments difficulties resulting from export shortfalls that are temporary in nature and due largely to factors beyond the member's

control." The Facility is open to all IMF members, but since the conditions for its use are more frequently met by countries with high dependence on primary commodities, its use has in practice been largely confined to the developing countries. Coverage of the Facility was expanded in 1979 to include earnings from workers' remittances and tourism and in 1981 to include cereal imports, as well as merchandise exports, but the dominant use of the CFF has throughout involved shortfalls in merchandise exports.

7.23 Use of the CFF is subject to certain criteria: (1) there must be a balance of payments need; (2) the export shortfall must be temporary and due to factors largely beyond the control of the member; and (3) the IMF must be satisfied that the member will cooperate with it in efforts to find, where required, appropriate solutions for its balance of payments difficulties. In addition, in respect of requests that have the effect of raising outstanding CF drawings above 50 percent of quota (upper tranche), the IMF must be satisfied that the member has been cooperating with the IMF in efforts to find appropriate solutions for its balance of payments difficulties. All of these judgments can be difficult in practice.

7.24 With regard to shortfalls in merchandise exports (or in aggregate earnings from merchandise exports and services), the amount that a member may draw from the IMF is limited by the size of the calculated shortfall, subject to a quota limit. Since January 1984, the quota limit for outstanding CFF drawings has been 83 percent of the member's quota in the IMF. The calculated shortfall is the amount by which export earnings in the shortfall year are below their medium-term trend value, defined as the five-year geometric average of export earnings centered on the shortfall year (that is, the latest twelve-month period for which actual export data are available). Exports for

the two post-shortfall years are projected by the IMF staff in conjunction with the authorities of the member concerned. Once a member chooses to base its request on earnings that include or exclude receipts from workers' remittances and tourism, it is bound by that choice in any subsequent request for a period of five years.

7.25 The "cereal decision" allows countries to borrow when they face balance of payments problems due to increases in the cost of their cereal imports resulting from circumstances largely beyond their control, such as declines in domestic food supplies due to adverse weather or increases in world prices of cereals. In these circumstances countries are permitted to choose to base their requests on data that include commercial cereal imports, in which case they are bound by that option for a period of three years. Under the cereal decision the amount of a drawing is determined as the sum of the export shortfall and the cereal import excess (either of which could be positive or negative), subject to quota limits. Since January 1984, the quota limits on drawings under the cereal decision have been 83 percent of quota for cereal import excesses and 83 percent of quota for export shortfalls, subject to a joint limit of 105 percent of quota for both components. The cereal import excess is calculated as the cost of these imports in commercial terms in the same twelve-month period as the export shortfall year less their arithmetic average for the five years centered on that year. Cereal imports for the two post-excess years are projected by the IMF staff in conjunction with the authorities of the member concerned. Quite difficult judgments are again required.

7.26 The possibility is provided of advancing the timing of CFF requests by allowing the members to use estimated data for up to six months of the

shortfall year in the case of exports, and for up to twelve months in the case of receipts from services and cereal import costs. The early drawing provision also makes it possible for members that experience long delays in compiling their trade statistics to use the Facility; countries whose trade data are in arrears for more than six months would otherwise be excluded from access to the Facility because of the existence of an operational rule that stipulates a maximum delay of not more than six months between the end of the shortfall year and the time of the request. Countries that avail themselves of the early drawing procedure, however, are expected to make an early repayment in the event that subsequent calculations based on actual data show that the member had been overcompensated.

7.27 The financing terms of drawings under the CFF are the same as those that apply to each use of the IMF's general resources. These include a rate of charge, currently 7.8 percent annually, plus a one-time service charge of 0.5 percent. Repayments are normally made in eight equal quarterly installments during the fourth and fifth year after the drawing.

7.28 Use of the CFF has increased substantially during the past decade. Annual average CFF drawings of SDR 1.3 billion ($1.37 billion) from 1976 to 1985 were larger than the SDR 1.2 billion of CFF drawings made during the entire first thirteen years of the Facility (1963-75). The expanded use of the Facility in the past ten years is partly related to the greater instability of export earnings of developing countries resulting from two major recessions, 1975 and 1981-82; in the aftermaths of the first recession drawings amounted to SDR 2.1 billion in 1976, and they averaged SDR 2.7 billion during 1982 and 1983. The more important reasons for the expanded use

of the CFF are related to modifications introduced in 1975 and 1979, including increases in quota limits on drawings, and increases in IMF quotas.

7.29 Since its introduction in May 1981, there have been thirteen drawings under the cereal decision amounting to SDR 1.1 billion, of which SDR 0.5 billion was attributable exclusively to excess cereal imports. The limited use of the cereal decision largely reflects a global food supply situation from 1981 to 1985 characterized by record world cereal production levels, large stocks, declining cereal prices, and a substantial volume of food aid. All thirteen drawings under the cereal decision were caused by the effects of adverse weather on domestic food supplies.

7.30 As noted above, the CFF is not a commodity-specific Facility and it finances shortfalls in agricultural exports only to the extent that these contribute to the shortfalls in total export earnings. However, since agricultural products are subject to greater instability than most other products and constitute a significant share of the total export earnings of developing countries, shortfalls in agricultural exports have contributed to a large number of drawings by the developing countries.

STABEX

7.31 The EC's STABEX compensatory finance scheme was established under the first Lome Convention of 1975. It is restricted to the EC's Associated African, Caribbean and Pacific (ACP) states and aims "to stabilize earnings from exports by ACP states to the EC of certain products ... which are affected by fluctuations in prices and/or quantities" (EC Commission, 1985). Exports of forty-eight agricultural products are covered by the scheme, mineral exports being the subject of a separate scheme. ECU 375 million ($460 million) was allocated for the duration of the first Convention

(1975-79), ECU 550 million for the second (1980-84), and ECU 925 million for the third (1985-89), in each case divided evenly between the years concerned.

7.32 Subject to threshold limits (see below), compensatable export shortfalls are calculated for each commodity separately--thus excess exports of one commodity do not offset shortfalls in exports of another. The intention is that compensatory payments should be directed to producers of the shortfall commodites, and while this is not a requirement for borrowing, claimants of STABEX funds must declare ex ante how they intend to use the funds and ex post how they have done so. Generally only exports to the EC are covered, although in certain cases coverage has been extended to cover, in addition, exports to the ACP states or the world as a whole.

7.33 To qualify for compensation under STABEX, a commodity must generally account for 6.5 percent of the country's export earnings and be 6.5 percent below the reference level. (Both limits are set at 2 percent for the least developed, landlocked, and island states.) The reference level is calculated as the arithmetic mean value of exports in the preceding four years. Export shortfalls must not be due to national policy.

7.34 The repayment provisions are generous. The least developed countries repay nothing, while the remainder repay only in part. All loans are interest-free.

7.35 In the period 1975-82, STABEX made 205 transfers to 44 ACP countries, amounting to about $800 million. STABEX transfers exceeded aid flows from the European Development Fund (EDF) in several cases and represented a significant proportion (10 to 66 percent) of the aid flow from the EDF for just under half of ACP countries. Payments have been unevenly spread over commodities, countries and time. Thus under STABEX I (1975-79) three beneficiaries

--Senegal, Sudan, and Mauritania--accounted for 30 percent of payments and four others for another 20 percent. Prominent among the commodities supported are cotton, sisal, coffee, cocoa, and groundnuts. The EC Commission estimates that 69 percent of transfers were due to weakening economic conditions and 31 percent to local circumstances such as drought, diseases, and floods.

7.36 Payment lags have been considerably longer under STABEX than under the CFF. During 1975-79 over 80 percent transfers were made six or more months after the end of the shortfall year. There are also problems over the predictability of payments. The EC rejects a significant number of claims as ineligible--28 percent during 1975-79 and 32 percent 1980-82, and during 1980 and 1981 STABEX exhausted its funds and was able to honor only 53 percent and 43 percent of eligible claims, respectively.

7.37 For the ACP countries the most attractive feature of STABEX is its high grant elements. For the least developed countries--which repay nothing --all transfers are grants; for the remainder, the zero rate of interest and the possible waiver if exports stay depressed for a long period, implied grant elements of about 60 percent over 1975-83. However, the grants were very unevenly distributed and there is no discernable relationship between grants components and indicators of poverty or the need for foreign assistance. The major beneficiaries are listed in Table 7.2.

7.38 STABEX influences the allocation of economic resources, both within and between countries. For example, by supporting particular sectors it seems likely to encourage excessive production of STABEX commodities, and especially of those where the market risks are greatest. Internationally, non-ACP

Table 7.2 The principal beneficiaries of STABEX's grant elements, 1975-83

A. Absolute receipts

Country	Receipts (millions of 1983 dollars)	As a percentage of 1983 exports
Senegal	77	13.2
Sudan	61	9.8
Cote d'Ivoire	33	1.6
Mauritania	30	10.5
Tanzania	23	6.2

B. Per capita receipts

Country	Receipts (1983 dollars)	As a percentage of 1983 GNP per capita
Dominica	62	6.6[a]
Kiribati	53	11.5
Tonga	43	5.8
Western Samoa	40	7.1
Vanuatu	38	6.5

a. GDP per capita.

Source: Koester and Herrmann (1985).

countries producing STABEX commodities are disadvantaged by not receiving protection from risk, and may have to switch into producing goods in which their comparative advantage is less. Also, the restriction of STABEX to exports to the EC market redirects and distorts international trade.

7.39 Table 7.3 summarizes the main features of CFF and STABEX. Although both have had practical difficulties, they have offered developing countries some shelter from the storms in world agricultural markets.

Table 7.3 Characteristics of CFF and STABEX

Item	CFF	STABEX
Year of initiation	1963	1975
Eligibility	Members of the IMF (137)	Sixty-four ACP states
Drawings 1977-82		
Number of transactions	112	171
Amount	$7.3 billion	$0.8 billion
Shortfall	$11.9 billion	$1.3 billion
Compensation rate	62 percent	59 percent
Coverage	Total exports (including services and excluding cereal imports, if desired)	Forty-eight commodities
Shortfall	Net	Gross (sum of individual shortfalls)
Reference level	Five-year moving average, centered on shortfall year	Four-year moving average, centered two and a half years previous to shortfall year
Limits	Country-specific quotas	Overall budget limit
Interest rate	IMF standard (7.8 percent currently)	None
Repayment schedule	Three to five years after loan	Two to seven years after loan
Repayment obligation	In full	None for low-income economies; conditional for other countries
Grant element	Around 20 percent	More than 80 percent

Trade preferences

7.40 The industrial countries have introduced several schemes which give access to imports from developing countries at reduced or zero tariffs. In theory, such preferences should increase the exports of developing countries, largely at the expense of those countries excluded from them. The idea is to improve the economic welfare of developing countries. However, the actual benefits have been limited, because the terms of the preferences are restrictive. The schemes either exclude, or place tight limits on, precisely those products in which developing countries could be most competitive. Among the least favored goods are many agricultural products. Overall, these arrangements have had little impact on agricultural trade. At best, they make only a marginal contribution to development. And they give developing countries an apparent interest in the maintenance of tariffs against some countries, thereby hampering the better goal of nondiscriminatory trade liberalization.

7.41 Trade preferences have a long history. Although the General Agreement on Tariffs and Trade (GATT) embodies the principle of nondiscrimination, from the start it accepted the continuation of special schemes such as British Commonwealth Preferences. Later, the EC countries established preferences for their former colonies, which exist today in the Lomé Convention linking the EC to sixty-five ACP states. Nondiscrimination was further eroded in 1964, when GATT allowed developing countries to receive preferential access to industrial markets. This section considers the Generalized System of Preferences (GSP), which is open to all developing countries, as well as discriminatory schemes such as the EC's Lomé Agreement

with the African, Caribbean and Pacific (ACP) states, and the United States's Caribbean Basin Initiative (CBI). The political tension that preferences induce was well illustrated by the ACP states' concern that the EC's GSP would be too generous, and thereby undermine their existing preferences.

7.42 Preferences can have two main effects: lower duties increase an industrial country's imports, but trade is diverted from nonpreferred to preferred sources. Thus an increase in the exports of a preferred country might be due to its taking trade away from other exporters; trade as a whole might not have been boosted. In fact, research suggests that only a third of the additional developing-country exports generated by the GSP is a genuine increase in trade.

The Generalized System of Preferences (GSP)

7.43 Under the GSP, developing countries' exports to markets in industrial countries face reduced tariffs. The scheme has had little effect on exports, however, partly because its product coverage is so limited. Imports from beneficiaries are only a fraction of the total imports of industrial countries. For many imports, regular tariffs are zero. Of the remaining (dutiable) imports' less than half fall within the GSP; of these, about half do not receive preference because they are over quota or temporarily excluded. Overall, about 2 percent of OECD imports qualify for GSP preferences, equivalent to about 7 percent of developing countries' total exports.

7.44 Agricultural goods are largely excluded. For example, the United States excludes sugar and dairy products (both of which are subject to overall import quotas), peanuts and long-staple cotton. It does so because increased imports would make it harder to run a system of price support for domestic

farmers. For the same reason, the EC and Japan also exclude most agricultural products. Textiles are generally excluded from the GSP textile trade being governed by the Multifibre Arrangement, and most industrial countries have many other exclusions as well.

7.45 Because of the quantitative restrictions and the small share of the market accounted for by preferences, they probably do not expand export volume by reducing consumer prices. Instead, the GSP tends just to transfer tariff revenue from industrial-country governments to developing-country exporters. The scale of this transfer can be deduced very roughly from UNCTAD estimates that, in 1980, the exports of GSP beneficiaries to the EC, Japan, and the United States of goods covered by the GSP were probably about $4.5 billion higher due to the GSP. UNCTAD does not break these figures down into price and quantity effects, but suppose that the average difference between GSP and general tariffs was 10 percent. On trade of $17 billion, about $1.7 billion of duties would therefore have been avoided. In that case, the volume of additional exports was roughly $3 billion in 1980 prices. Most of that benefit probably accrued to a few middle-income countries. The thirty-seven least developed countries have only about a 1 percent share of the exports covered by the GSP, while four newly industrialized developing countries accounted for 41 percent.

Other preferential schemes

7.46 The Lome Convention is the best known of the other preferential schemes; it is described in Box 7.3. Most of its preferences are quantitatively unimportant, the main exception being the special quotas and prices agreed for sugar trade. Seventeen ACP countries have quotas to export sugar to the EC. As Box 7.4 shows, these quotas insulate ACP producers and EC

consumers from world prices, thereby reducing the flexibility of the world sugar market. They discourage efficiency among producers, prevent consumers from buying cheaply or from benefiting from technical progress, increase transport and handling costs, discriminate against efficient sugar producers outside the arrangement, and encourage higher world output of sugar. However, they do transfer a large amount of income to the lucky quota holders.

7.47 Although the economic effects of the Lomé Convention are hard to quantify, there are several reasons for thinking that they are relatively small: first, preference margins are slim; second, the main effect of most preferences seems to have been to divert trade rather than to boost it; third, market structures sometimes allow monopsonistic European importers to capture the tariff preferences; and fourth, the ACP countries have not always taken (or been able to take) full advantage of any increased trade opportunities that have arisen. The last point applies particularly to small and least developed countries, where the infrastructure is too rudimentary to exploit most preferences.

7.48 In return for these generally small and uncertain benefits, the ACP countries are bound into EC protectionism. Fearing the erosion of their preferences, they tend to oppose more widespread trade liberalization. They also find it difficult to oppose the EC politically.

7.49 The Caribbean Basin Initiative (CBI) of the United States, signed in August 1983, gave duty-free access to most exports from twenty-seven Caribbean states to the United States, and also provided them with more financial assistance. In return, the Caribbean states agreed to certain changes in taxation and economic policy. While all the parties enjoy some obvious benefits from the CBI, its trade provisions have had negligible effects so

far. Textiles, clothing, footwear, canned tuna, and petroleum are among the items excluded from preferences; sugar and beef are subject to special treatment. Sugar quotas for CBI countries have been reduced from about 1.5 million tons in 1980 to 1 million tons in 1986. The U.S. Food Security Act of 1985 requires them to be reduced further if they conflict with the domestic sugar price support program. Beef quotas are also subject to U.S. domestic policy constraints.

7.50 Apart from these schemes, developing countries have several preference arrangements for trade among themselves, normally involving regional groups. To the extent that these create extra trade they are beneficial; but like other preference schemes, they tend to divert at least as much as they create. And too great a concentration on regional markets tends to blind countries to the advantages of supplying the world market, which offers more scope for exploiting comparative advantage and greater security from regional economic shocks. Box 7.5 discusses intra-country agricultural trade between developing countries.

Food aid

7.51 During the 1960s and early 1970s, many governments and observers were concerned about widespread shortages of food. The UN Food and Agricultural Organization (FAO) had long maintained that food supplies were chronically inadequate to meet the basic needs of many of the world's people and also were prone to periodic crises. As a result, various international and bilateral arrangements were made to cope with both chronic and transitory food shortages (see Box 7.6). This section examines these issues, arguing that donation of

food in itself is insufficent for the relief of hunger, and may sometimes be counterproductive.

7.52 Although famine relief is the most visible form of food aid, it is much less common than project food aid (assistance to particular development projects given or lent in the form of food) and program food aid (food donated as balance of payments or budgetary support). In all its forms, food aid accounts for a relatively small share of foreign assistance to developing countries. Valuing commodities at world prices, food aid in recent years has amounted to about $2.6 billion annually, about 10 percent of official development assistance. In 1984-85, twenty-five donor countries provided more than 100 developing countries with about 12 million tons of cereals, 430,000 tons of vegetable oil, 356,000 tons of skimmed-milk power, 98,000 tons of dairy products, and 21,000 tons of meat and fish products. Of this, only about 660,000 tons, less than 5 percent of food assistance, was for emergency food aid. The United States is the largest donor (about 50 percent of food aid) followed by the EC (about 30 percent). Canada, Australia, and Japan contribute about 14 percent between them.

7.53 The distribution, quantity, and nature of food aid bear little relationship to dietary deficiency. For example, 20 percent of all cereal aid goes to Egypt, a middle-income country where the average calorie intake is about 28 percent more than needed for a healthy diet. By contrast, Togo--low income, food-deficit country--receives only 6 percent per person of what Egypt does. Over the past decade donor governments have tried to send more food aid to where dietary deficits are largest, and have made some progress in this direction (see the bottom part of Table 7.4). Food aid is now generally directed toward poorer countries; but it is far from being entirely so.

Table 7.4 Food aid in cereals, 1971-83

Region	1971-72	1976-77	1982-83
World total (thousands of tons)	17,513	6,847	9,198
		Percentage shares	
Africa	8.3	28.4	50.4
Sub-Saharan Africa	2.5	10.4	26.9
Asia	52.7	59.7	32.3
Bangladesh	3.4	17.3	13.6
India	10.1	16.2	3.1
Indonesia	6.1	2.0	1.7
Latin America	3.9	7.7	13.7
Colombia	0.9	3.8	0.0
Honduras	0.0	0.2	1.0
Memorandum item			
Low-income countries	43.1	79.0	84.2
Least developed countries	1.3	26.7	32.3

7.54 The quantity of food aid is related more closely to the needs of donors than to those of recipients. For example, the United States's legislation on food aid--Public Law 480--makes explicit mention of foreign policy considerations, surplus disposal, and the avoidance of conflict between commercial and concessional exports. The level of food prices also affects the amount of food aid. In 1973-74, when food was short and prices high, wheat shipments were less than 4 million tons, compared with around 10 million tons a year in the late 1960s. Although various conventions have established minimum levels of food aid in order to make it more reliable, their target levels are low and have never been binding. Donors have found food aid a convenient way of disposing of surplus stocks, particularly of milk

products. The United States and the EC have increased that form of food aid substantially. Dairy products are rich in proteins; but caloric, not protein, deficiency is more widespread in developing countries, and calories can be supplied more cheaply in other forms.

The effects of food aid on recipients

7.55 International food aid is only part of the answer to famine. To begin with, it does not solve the massive problems of internal food distribution. India's recent success in avoiding famine-deaths has owed much to its ability to shift grains from regions with surplus food to those with deficits and to provide aid to the needy, either directly as food or indirectly by income support. By contrast, the recent relief operations in Ethiopia have been dogged by transport and communications failures, and the civil war has prevented enough food reaching many of the worst affected areas. More important, food aid does not tackle the fundamental causes of famine.

7.56 When temporary food shortages alone are causing famine, international food aid is clearly the right response if appropriate distribution facilities are in place. Where other causes are significant, however, emergency aid can be counterproductive. This is especially true if the aid is delayed, arriving only when local farmers are again starting to grow more food. In these cases, the fall in food prices may deter farmers at the next planting, extending a country's dependence on aid. Many things can be done to prevent this happening (see Box 7.7). Incomes can be stimulated by redistributing the proceeds from selling food aid. Donors can invest in projects that provide new jobs and incomes for local people. Food aid can be directed to the very poor, for whom it may be largely additional rather than alternative to local supplies. The government might subsidize local production, keeping farmers'

incomes up in the face of food aid. This last remedy can be costly, however. In 1982-83 Bangladesh received cereal food aid worth about $160 million at world prices, and ran a food-subsidy scheme costing about $130 million. Of the food distributed under the scheme, however, about 50 percent went to government and military employees and those in "designated" industries--important groups politically, but mostly relatively affluent; less than 30 percent reached the poor.

7.57 The two most obvious ways of preventing food aid from deterring local production are usually barred to recipients. First, countries could resell food on the world market, buying back only as much as was genuinely needed in extra demand. Second, they could reduce commercial imports by the amount of the food aid. However, both causes are usually prohibited as part of the terms on which aid is given. This is intended to ensure that food aid does not reduce the commercial demand for the donors' food. It also ensures, however, that food supplies in the recipient country rise proportionately more than incomes, making the disincentive effects particularly hard to avoid.

7.58 Since food aid cannot legally be converted into cash, much of it has to be distributed in kind. This involves recipient governments in extra costs of administration, and often of transport as well. The food-for-work projects--by which food aid pays in kind for infrastructural development--are often inefficient and poorly designed, further reducing the real benefits of food aid. Similar reservations apply to aid schemes for boosting the diets of certain groups, such as children and pregnant women. While such problems do not undermine the case for food aid per se, they do show how the limits on its use can sharply reduce its worth.

Box 7.1 Recent commodity agreements in agriculture

The longest-lived agricultural ICA is for the International Coffee Agreement. Based on export controls, it has probably raised coffee prices slightly above what they would otherwise have been. While recent years coffee prices have been kept mostly within the price ranges, in the long term the agrement has had little success at stabilizing them. The agreements have operated for over twenty years (with a five year hiatus in the mid-1970s). An important factor in the ICA's longevity has been the support offerred to it by the main coffee-consuming countries--largely for foreign policy reasons. Periodic supply crises--mostly arising from Brazilian frosts--have also contributed to its longevity, by permiting the periodic disgorgement of stocks.

Two serious problems now face the coffee agreement. First, the United States, the largest consumer, has begun to reassess its commitment to the agreement. Second, increasing amounts of coffee are traded outside the agreement's export restrictions. The agreement permits so-called "tourist coffee": small volumes of exports allowed outside normal quota limits for the sake of opening up new markets. Recently, however, the volume of tourist coffee has been growing and it has been re-exported from new markets to traditional quota-bound ones. While this may be efficient in the sense that it suits all the trading parties, it is not as efficient as free trade in coffee would be because it increases transaction and transport costs and introduces unnecessary uncertainty.

The International Cocoa Agreements have been almost wholly unsuccessful. After decades of low prices, the first cocoa agreement was

designed mainly to defend a floor price. Its advent coincided with a surge in prices that resulted from declining output among traditional producers and booming demand, so market prices exceeded the agreement's target prices throughout the 1970s. Since at that time the agreements had no accumulated stocks, they were powerless to hold down prices.

Negotiations for the third cocoa agreement began in 1981 and proved protracted and difficult. Neither the principal consumer (United States) nor the principal supplier (Ivory Coast) took part. The United States felt the target price range was too high; Ivory Coast thought it was too low. Subsequent events bore out the former's view. Cocoa prices have fallen substantially since 1981 as new production, stimulated by previous high prices, has become available. During the third cocoa agreement, therefore, the market price has almost always been below the target range. The agreement's executive arm has intervened to support the price but, without the United States or Ivory Coast, was ineffective. In the negotiations for a fourth Cocoa Agreement, which began in 1985, old disagreements between producers who want $1.10 per kg; and consumers, who want to pay only $0.85 per kg., resurfaced. A plan to buttress the buffer-stock with export controls was proposed, which opened new areas of disagreement.

The International Natural Rubber Agreement, having successfully defended a floor price for several years after it was set up in 1980, has been unable to divest itself of its large stocks, despite cuts in its target prices. The agreement was extended until 1987, although the decision to do so was taken at the last minute and it is unclear whether producers and consumers will be able to agree to a further renewal.

Recent International Sugar Agreements have had no material influence on the world sugar price. The free market accounts for only about 15 percent of world sugar trade; the rest is shipped under long-term or preferential agreements. The result is that the price of sugar is the most volatile of all agricultural commodities. The sugar agreement has had to cope with the EC's shift from being a major importer to a major exporter: the community refused to sign the 1977 sugar agreement because it said its export quota was too small. Market-support operations were abandoned in 1984, and the sugar agreement now merely collects data and fosters discussions.

Box 7.2 Commodity futures and options

Futures markets allow commodities bought and sold today today to be delivered at a future date. Such markets exist in London, New York, Winnipeg, Sidney, and elsewhere but the most widely used exchanges are in Chicago, where contracts for corn, soybeans, wheat, cattle, and hogs are bought and sold for delivery up to eighteen months from the trading date. Futures contracts can be used to speculate on prices, but they also allow buyers and sellers to fix a price for goods which are to be purchased or sold later. A wheat farmer can, through a futures sale contract, sell his crop when he plants it. Later, when the wheat is harvested, he can buy the contract back. The earlier forward sale determines the price that the farmer receives. This process is called "hedging". Similarly, by buying futures a processor of wheat can hedge anticipated purchases.

Hedging via futures does not eliminate risk. If a farmer sells forward 1,000 tons of wheat and then his crop fails, he may have only 900 tons with which to meet the commitments of his futures contract. Forward purchases can backfire in similar ways. For farmers in developing countries, serious problems can arise when the local price does not vary consistently with the Chicago or other futures market price: this is a "basis risk". A forward sale in Chicago will do a producer little good if the local price falls against the Chicago price.

Many buyers and sellers do not wish to lock in a fixed price, because that forecloses potential gains as well as losses. Instead, sellers would like to insure themselves against extremely low prices and buyers against extremely high prices. Such insurance can be accomplished by trading in

options on futures contracts. Options are traded on sugar and cotton in New York and on soybeans, corn, hogs, and cattle in Chicago. A farmer can insure against low prices by purchasing an option to sell at a specified "strike" price. If the actual price falls below the strike price, he exercises the option; if they rise above it he can buy back the option contract and sell his crop for cash. There are several strike prices below the futures price, providing a range of insured price levels. Similarly, a buyer insures against high prices by purchasing an option at a strike price above the futures price. The market price of options determines the cost of the insurance, and profit (or loss) of the individuals who sell the options.

The usefulness of international futures and options markets for developing countries is greatly reduced because of basis risk. In addition, a stable financial and regulatory environment is needed if such markets are to thrive. However, although futures and options have been used little by either farmers, corporations, or parastatal agencies in developing countries, the opportunities for their use have been expanding. They may become important in the future, especially if liberalized agricultural trade ties the world's agricultural commodity markets even more closely together.

Box 7.3 The Lomé Convention

The best known system of trade preferences is the EEC's arrangements with its associated African, Caribbean and Pacific (ACP) states. These arrangements, which replaced former colonial preference schemes, were formalized under the first Yaounde Convention of 1963, and are now enshrined in the Lomé Convention, the third of which was signed in 1985. The STABEX Compensatory Financing Facility is a principal feature of the Lomé Convention. Others include the preferential access of ACP goods into the EC the European Development Fund which administers foreign aid to ACP countries.

The Lomé Convention covers most of the EC members' former colonies with the exception of the industrial and Asian members of the British Commonwealth. They were denied membership in 1973 on the grounds that they were either much bigger or much richer than the original associated states. There are sixty-five developing country members of Lomé at present, the majority of which are among the smallest and poorest nations.

The preferences granted to ACP states on agricultural trade fall into three groups. First, small preferences are granted on commodities covered by the CAP. Since such commodities are mostly temperate crops, however, this matters little to the mostly tropical ACP states. Second, preferences are extended for tropical products supplied principally by the ACP states, and which pose little threat to the EC's domestic producers. Such goods are mostly granted unrestricted tariff-free access. However, since similar rights accrue to many other exporters through the EC's other preferential arrangements or because tariffs are anyway zero, the ACP countries cannot be said to receive special treatment. Over half of ACP exports are covered by other EC preference schemes.

Third, there is a small class of goods for which special arrangements exist--rum, bananas, beef and sugar. The arrangements reflect and perpetuate historical and political conditions; they have little basis in economic efficiency. Rum and bananas face separate regulations in each EC country, which greatly increases exporters' administrative burdens. ACP rum quotas remain unfilled and the ACP countries have not been able to increase their shares of the export market for bananas. The arrangements for beef and sugar, on the other hand, grant the ACP countries both the right and duty to sell in the EC at a fixed price. In general this far exceeds the world price, and so the system transfers income to the ACP countries. In some years, the transfers have been huge. In 1979, up to 7 percent of Botswana's GNP came from beef transfers and 22 percent of Mauritius' GNP came from sugar transfers in 1975-76. But the arrangements for sugar cause economic inefficiencies because they encourage some ACP countries to expand their output unduly. They also generate excessive transport costs because the EC, which produces more sugar that it consumes, also exports sugar.

The Lomé Convention grants ACP countries preferential access for manufactured and semi-manufactured exports. However, since most manufactures face low general tariffs and are covered by the GSP, the preference is again small. Only where the GSP limit on tariff-free access is tight have the ACP countries been able to exploit their preferences.

It has proved hard to measure the effects of the Lomé Convention on world trade, not least because the historical trading links that bind ex-colonies to Europe are weakening. Since 1965 most ACP states have diversified exports away from Europe, though their share of EC imports has not changed dramatically. But do ACP countries continue to depend disproportionately upon the EC market? One study of ACP states examines

"trade intensity indices"--the ratio of an exporter's share of a particular market relative to its share of the world market. Trade intensity has always been high between "related" states--for example, Britain and the Commonwealth, the United States, and the formerly "nonprefered" states. It is correspondingly low between less related parties. With the advent of Lomé, however, ACP trade intensities with non-EC markets declined while those with EC markets rose. This is especially noticeable for the United States and for formerly nonpreferred states' trade with the EC.

While these facts suggest that the Lomé Convention has altered the pattern of world trade, the change has not been large. Moreover, it is not possible to say whether the Lomé Convention has increased trade or merely redirected it. ACP countries may merely have taken market share in the EC away from other developing countries by diverting exports away from other markets. To put the argument in an extreme form, it is possible that all the Lomé Convention has achieved is to change the composition of world trade, without increasing it, while adding to transport costs.

Box 7.4 The EC's Sugar Protocol

The Sugar Protocol of the Lome Convention allows seventeen developing countries to export fixed amounts of sugar to EEC members free from the usual import restrictions. The preferred countries comprise fourteen ACP states, India, Belize, and St. Christopher and Nevis.

The benefits of these arrangements to the favored exporters depend on the sizes of their quotas, which are unevenly distributed. In 1981-2 five countries accounted for 77 percent of the total quota, with Mauritius alone receiving 38 percent. Four countries had quotas covering half or more of their domestic production (80 percent for Mauritius), while four had quotas below 10 percent of domestic output (see Box Table 7.4).

One of the peculiarities of the Sugar Protocol is that even net importers of sugar export to the EC. Kenya, which produced less sugar than it consumed between 1976 and 1978, still exported to the EC. The peculiarities are compounded by the fact that the EC itself is a net exporter and thus re-exports the sugar imported under the Protocol. Since transport, insurance, handling and waste account for up to 20 percent of the value of sugar trade, this is a considerable waste of resources--about $42 million in 1981/82.

By paying producers more than the world price for sugar, the Sugar Protocol transfers income from consumers in the EC to producers in developing countries. Since the world price of sugar fluctuates wildly, the transfer varies from year to year, but it is nearly always positive. Negative transfers occur when the world price rises above the guaranteed price at which developing countries are obliged to supply sugar.

The estimates for income transfers quoted in the table are exaggerated to the extent that the sugar Protocol reduces the world price. If

exporters behaved in a rigorously rational way, world prices would not be affected by the Protocol. The high guaranteed price is received on only a fixed quantity of sugar so there is no virtue in producing more sugar for the EC market than the quota allows. At the same time, an ACP country is free to choose the cheapest way of obtaining the sugar it supplies to the EC. If, in the absence of the Protocol, it would have imported sugar because its own production costs exceeded the world price, then with the Protocol it should just import sugar and re-export it to the EC.

Few countries do this. Mauritius pays its plantation owners a price between the world and the EC price. For sugar produced over and above the EC quota, therefore, the marketing board is paying more than the sugar is worth on the world market, and is encouraging excess supply. The Protocol is, indirectly, lowering the world price of sugar.

Because quotas are determined largely by political influence and historical levels of sugar exports, the Protocol tends to freeze world trade patterns. This handicaps new producers or countries which have improved their efficiency. Thus it probably has the effect of increasing average production costs for world sugar.

Finally, as part of the mechanism for fixing the EC's internal sugar price, the Protocol helps to isolate the EC from the world market. It also tends to isolate ACP producers. This increases the burden of adjustment elsewhere and exacerbates the instability of world market prices.

Source Koester and Herrmann (1985).

Box table 7.4 EC sugar quotas and transfers, 1981/82

Preferred countries	Annual delivery quotas in 1981/82		Exports as a percentage of quota, 1981	Quota as a percentage of production, 1981	Maximum transfer, 1981/82 [b]		
	Quantity (tons)	Percentage of total quota			Total ECU (million)	ECU per capita	As percentage of GDP or GNP
Barbados	49,300	3.8	100	51	7.5	28.8	0.8
Belize	39,400	3.1	111	38	6.0	40.0	4.1
Fiji	163,600	12.7	116	34	21.8	33.0	2.3
Guyana	157,700	12.2	127	49	23.9	26.5	4.7
India	25,000	1.9	0	0	3.4	0.0	0.0
Jamaica	118,300	9.2	105	58	17.9	7.9	0.6
Kenya	93	0.0	0	0	1.4	0.1	0.0
Madagascar	10,000	0.8	0	9	1.5	1.6	0.5
Malawi	20,000	1.6	105	11	3.0	0.5	0.2
Mauritius	487,200	37.8	94	80	75.8	79.8	6.4
St. Christopher and Nevis	14,800	1.1	107	45	2.2	36.6	4.3
Suriname	2,667	0.2	..	33	0.4	10.8	0.3
Swaziland	116,400	9.0	106	32	18.9	32.0	3.5
Tanzania	10,000	0.8	0	8	1.5	0.1	0.0
Trinidad and Tobago	69,000	5.4	98	74	10.5	8.7	0.2
Uganda	409 [a]	0.0	--	--	--	--	--
Zaire	4,957	0.4	0	31	0.8	0.5	0.0
Total	1,288,826	100	100	14	196.5	0.24	--

a. Quota abolished in 1981.

b. Allowing for transport, insurance, and handling costs.

Box 7.5 Agricultural trade between developing countries

In 1980, agricultural trade among developing countries was worth $21 billion; it accounted for 25 percent of developing countries' total agricultural exports. Between 1970 and 1980, agricultural exports to other developing countries grew faster than to developed countries, but it still grew more slowly than their agricultural imports from developed countries. About two-thirds of farm trade between developing countries takes place between regions. Asia trades with other developing regions the most, Africa and the Middle East the least. A few commodities--mainly rice, sugar, raw cotton and coffee--dominate the trade between developing countries.

There may be good reasons why this trade remains relatively small. The expansion of trade between developing countries should be pursued within the overall aims of economic development; it is not a goal in itself. But the low volume of farm trade between developing countries also reflects a variety of constraints:

o Tariffs in developing countries tend to be biased against the sorts of goods exported by other developing countries; nontariff barriers tend to restrict agricultural trade more than manufactured trade. Among the fifteen largest developing country importers, quotas, conditional prohibitions and licensing are applied to 31 percent of agricultural imports but only 23.5 percent of manufactured imports. Though tariffs on rice are low, half of world rice imports is subject to direct government control and a further 20 percent is regulated by licenses.

o Transport, communication, and market information between developing countries are often inadequate. It is easier, cheaper, and more profitable to seek out information on large markets; this, and traditional trading links,

means that the trading potential of other developing countries may not be fully exploited.

o Subsidized exports from industrial countries, often combined with overvalued currencies in developing countries to reduce developing countries' competitiveness.

o Slow growth in the demand for imported food by industrial countries discourages developing countries from increasing production and reduces their access to the foreign exchange needed to import from other developing countries.

Several measures have been proposed to increase intra-developing country agricultural trade, among them a Global System of Trade Preferences and an international information system on trade financing. Trade preferences --either general or regional--are unlikely to be very effective. There are now eleven economic integration or clearing arrangements among developing countries. Most offer tariff preferences among members but little relaxation of nontariff barriers. These groups account for a significant fraction of total agricultural trade between developing countries but only rarely for more than 20 percent of their members' trade. Increased emphasis on market information and intelligence holds out a better hope of assisting developing countries to expand their agricultural exports. Such systems are not cheap to develop and countries which export similar crops need similar information. So it may be most economical for regions or groups of countries to cooperate in setting up market information systems. This could be supported by technical cooperation, harmonization of standards, increased use of long-term contracts, and joint ventures.

Source: FAO (1985).

Box 7.6 Food aid institutions

Large-scale international food aid started with the passing of United States Public Law 480 (PL 480) in 1954. This legislated for the disposal of grain surpluses abroad:

> . . . to expand international trade among the United States and friendly nations ... to make maximum efficient use of surplus agricultural commodities in furtherance of the foreign policy of the United States, and to stimulate and facilitate the expansion of foreign trade in agricultural commodities produced in the United States by providing a means whereby surplus agricultural commodities in excess of the usual marketings of such commodities may be sold through private trade channels ... (68 Stat. 457)

The United States and other donors have also adopted the FAO's Principles of Surplus Disposal to minimize the disincentive effect that food aid has on commercial markets. A consultative sub-committee was set up to monitor the distribution of food aid and check that the so-called "Usual Marketing Requirements" were being met. These require recipient countries to maintain commercial imports at a specified level even though they are also receiving food aid. The rule is still insisted upon and monitored by the sub-committee.

The impact of dumping surplus food gave rise to considerable concern, and the hope of correcting it was one of the motives behind the creation of the World Food Program (WFP) in 1961. Established under the joint auspices of the United Nations and the FAO, the WFP was the first multilateral food aid agency. It aims to supply and coordinate food aid not only for relief and emergency purposes, but also for development projects. It is hampered, however, because its food donations may not be sold in the recipient countries' markets. Donated food can only be used for projects if it is

distributed through cumbersome channels such as direct feeding or Food-for-Work. By 1983-84, about 25 percent of all food aid shipments were handled by WFP, compared with 5 percent in the late 1960s.

Food aid reached record levels--17 million tons--in 1965-66. Almost immediately concern arose that adequate flows might not be maintained because the United States was then stepping up its policy of restricting the area planted to grain. This concern was manifest in the Food Aid Convention of 1967, adopted as part of the International Wheat Agreement. Under the Convention, member countries promised to provide 4.5 million tons of cereal food aid a year. The current Convention, signed in 1980, guarantees minimum supplies of 7.6 million tons a year from twenty-two donor countries.

The so-called world food crisis of 1972-74 led to the convening of a World Food Conference in 1974. This set up a variety of institutions to promote food production, including the International Fund for Agricultural Development (IFAD) and the International Food Council. It also sought to increase food aid. The Conference recommended that countries should aim to provide 10 million tons of cereal food aid a year, and the establishment of an International Emergency Reserve of 500,000 tons to be replenished annually.

The world food crisis also provided an impetus for using food aid for development, as well as emergency relief. In 1977 the United States amended PL 480, introducing donations under a new Title III--"Food for Development". It aims to help small farmers, sharecroppers, and landless laborers increase food production and to stimulate rural development in general.

Box 7.7 The challenges of effective food aid

The distribution of free food would appear to be a straitforward solution to the immediate problem of starvation. But, even ignoring long-term impacts of food aid on recipient countries' farming, emergency food aid will be effective only if certain conditions are met.

The first requirement is information. Famines do not happen suddenly. Farmers in Africa, accustomed to erratic rainfall, have evolved traditional means of coping with food shortages, especially in the first year of drought. But in the second year, widespread shortages may become unmanageable, and international aid becomes necessary. Given the long period between the first signs that the harvest may fail and the point at which a large number of people starve, the provision of information would not seem too difficult. In many instances, however, the governments of affected countries have been reluctant to release details of impending famine, and have hindered international agencies (both official and private) which wanted to publicize the emergency. In 1973-74 and again in 1983-84, the Ethiopian government provided only limited assistance to relief agencies. Logistical difficulties, for example in Mozambique in 1983-84, or merely lack of attention, as in Mali and Chad in 1983-84, have made the collection of information difficult.

The second requirement is prompt reactions by donor countries. In the Sahelian drought of the late 1960s and early 1970s large-scale relief efforts started only in 1973, five years after drought and famine had begun. The FAO announced late in 1982 that Ethiopia would need large quantities of food aid the following year. For reasons which were largely political, large scale relief efforts started only in late 1984. One possible solution to such political difficulties is to grant multilateral agencies, especially the World

Food Program, a more prominent role in emergency relief. Currently they handle only between 10 and 20 percent of total emergency aid.

It would be a mistake, however, to assume that a simple increase in food aid would cure starvation. In many cases, aid throws unmanageable burdens onto fragile storage and distribution systems. In Sudan, only 64 percent of the food aid pledged was distributed in 1984-85, although 91 percent was delivered to the ports. In Ethiopia, only three-quarters of the food delivered was actually distributed.

The problem of transport is especially serious for landlocked countries. Imports into Burkina Faso, Chad, Mali, Niger, Zambia, and Zimbabwe must be handled in the ports of neighboring countries. Reports of delays, or worse, are numerous. Take the case of Mali, which can import food through Senegal, Ivory Coast, or Togo. Transportation through Senegal is by rail, and capacity is limited to 435 tons per trip. It is not always possible to obtain trucks for the road through Ivory Coast because Mali may not have a cargo to send back and because, in the busy season from November to June when Ivory Coast's export crops are moving to the ports, trucks are not always available. The route from Togo passes through Niger, and with half of the road unpaved, the going is very slow, especially during the rainy season. Food could be also transported through Nigeria, but Nigeria'a ports are congested and trucks are often broken down.

Food can also be held up on the seas or at the dockside. Estimates of the damage due to delays in shipping and off-loading in Somalia in 1985 vary from 10 to 30 percent of total food aid flows. If aid is delayed, it can actually hinder the recovery from famine. When food that had been promised in late 1984 arrived six months later in Sudan and Ethiopia, the rainy season had begun. Rain makes many roads impassable so the food could not be

distributed. But when the rain finished, the harvest was gathered in and the food aid became not only less urgent but potentially counter-productive, because it forced prices below even the seasonal low point. Kenya did not have enough storage for its own record food crop of 1985, but at the same time, food aid was still arriving in response to 1984's drought. As a result, the Kenyan Marketing Board (the monopoly maize buyer) may have to refuse to buy some maize, delay payments to farmers, and even export maize at a loss.

Chapter 8

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Chapter 8 National and International Priorities in Agriculture

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Chapter 8 National and International Priorities in Agriculture

8.1 One of the major lessons of the last several decades of development is that growth in agricultural production and productivity in developing countries can match or surpass the growth in industrial countries. The record, as discussed in Chapter 1, is clear that agriculture can be a dynamic sector in developing countries, contributing greatly to growth in real incomes, employment, foreign exchange earnings, and the redressal of poverty. Although there remains substantial areas of improvement, the policies and investments increasingly being pursued by governments in many developing countries and the international support and assistance they have received have given rise to guarded optimism about the long-term prospects of increasing food production faster than population growth. This optimism replaces the resurgence of Malthusian pessimism in the wake of the unusual increases in food prices in the early 1970s. With the sharp drop in commodity prices since then, there is now little basis for thinking that a fundamental break has occurred in the long-term trend declines in real food prices.

8.2 Episodes of commodity booms and slumps are nothing new in history, nor are dearths and famines which continue to occur periodically, albeit with much less frequency than in earlier times. Such episodes should not cloud the progress already attained, nor should they divert attention from the interdependence of agricultural programs and policies in different parts of the world. The pricing and trade policies that industrial and developing

countries follow will greatly affect the extent of progress in the future in increasing economic growth and rural incomes and in alleviating poverty and hunger. At stake is the well-being of hundreds of millions of very poor people in the world who depend on agriculture for their livelihood.

8.3 This Chapter begins with a review of the priorities for developing countries in the area of pricing and trade policies. The recommended directions of change in developing countries will benefit them individually and collectively. But their gains--as well as the gains to industrial countries--will be much larger if significant progress is attained in liberalizing trade. The liberalization option is reviewed in the final section.

Priorities in developing countries

8.4 Developing countries are increasingly recognizing the need for policy reforms in agriculture. In some cases, such as in China, broad reforms of pricing and trade policies have been carried out in the context of an overall liberalization of the economy and greater reliance on markets and trade. In others, reforms have focussed on particular programs, crops or public institutions. No generalizations on the specifics of desirable reform processes are possible as their nature, design, and timing are largely determined by country circumstances.

8.5 It is nonetheless worth stressing that the benefits of sectoral policy reforms can be mitigated by adverse movements in exchange rates which are in part determined by macroeconomic policies. The large appreciations of the exchange rates in many countries during the 1970s dominated the effects of

sector-specific policies by making importables appear much cheaper and exportables much more unattractive than otherwise would have been the case. Policy reforms in agriculture should not be divorced from reforms of economy-wide policies and of development strategies based on inefficient import substitution in industry that induce strong anti-export and anti-agriculture biases.

8.6 In many developing country one observes a combination of the following elements: urban food subsidies, lower prices of tradable farm products than their border prices, significant subsidies to farm inputs and to rural credit, interventions in both domestic and foreign marketing, partly for the purpose of stabilizing prices, and measures to promote agriculture through public investments and support services. Of these, reforms of producer prices offer the greatest scope for benefits.

8.7 As discussed in Chapters 4 and 5, the prices of outputs and inputs to producers are typically influenced in a complex manner by government policies. Export taxes and quotas or import tariffs and quotas are only some of the instruments. Very often exports and imports are handled by state marketing institutions and the margins they charge can introduce elements of taxes and subsidies. There can also be many distortions--including in transport pricing--which make ex-farm prices different from what they would be in a competitive economy. Domestic procurement of food crops and their distribution in urban areas are also typically carried out by state agencies, in combination with their monopolies in foreign trade. Procurement prices may be too low--encouraging the use of parallel markets as commonly observed in Africa--or they may be set too high leading to large surplus publically-held stocks. Imports and exports are not infrequently the residual adjustments needed to correct for errors in procurement policies.

8.8 Because the import and export prices represent the alternative costs and returns to products, efficient resource allocation requires that domestic producer prices of tradable farm products should be close to their border prices once account is taken of marketing, transport, and other intermediary costs. Yet border prices are seldom used explicitly as norms for setting pricing policies. The complexities of the process by which farm prices are determined tend not only to make domestic relative prices differ significantly from relative border prices--thus leading to inefficient crop mixes--but also to unpredictable year-to-year fluctuations in the taxes and subsidies that are implicit in the process.

8.9 Export taxes and quotas--whether to exploit 'monopoly' powers in trade, to subsidize agro-processing, to raise revenues, or to promote domestic production of competing crops--are commonplace and often excessive, greatly reducing the benefits that developing countries can attain through trade. On the import side, one would expect the self-sufficiency objective to result in support to domestic producers. But state trading in domestic and foreign markets and the high costs of financing urban food subsidies can lead to lower domestic procurement prices than import prices--an implicit subsidy to imports that have been very high in some cases.

8.10 In contrast to the suppression of producer prices, production subsidies--either through credit or through subsidized distribution of modern inputs--are extremely common and are often regarded as integral components of crop and farm development programs that accompany public expenditures on infrastructure, research, extension, and other support services. As Chapter 5 made clear, such subsidies--which can absorb large shares of public revenues

--are seldom justified either in theory or in practice. Contrary to their objectives, credit and input subsidies encourage the wrong mix of inputs and, in the case of subsidized credit and farm machineries, inhibit the growth of rural employment. Moreover, the excess demand at subsidized prices leads to rationing and much higher effective prices than officially sanctioned prices.

8.11 Policies on farm output prices have far greater impact on farm incentives than input subsidies. Changes in output prices affect all farmers while the incidence of production subsidies is restricted. Thus, the combined effect of producer taxation and production subsidies is harmful not only for growth but also often for equity. The preferred policy should be to eliminate production subsidies and to use the revenues thus saved to finance productive investments.

8.12 The costs in terms of economic growth and rural welfare of these types of policies are typically underestimated by governments. One reason for this is the still-prevalent idea that farmers are not price responsive, especially in low-income countries. As shown in Chapter 4, the evidence suggests, however, that crop outputs respond significantly to prices. Also, it should be noted that producer prices can be greatly different from what they should be--even by orders of magnitudes of 100 percent so crop response can be substantial. Moreover, a policy of taxing producers will have much greater adverse effects if sustained over a period of years as capital and labor will abandon the agricultural sector.

8.13 As pointed out in Chapter 4, one possible way of mitigating the adverse effects of agricultural taxation is to use direct taxation of agricultural incomes or of land values. Even though many countries have been

reluctant to proceed in that direction, the economic costs of the indirect tax systems commonly observed may far exceed the likely administrative costs of a well-functioning direct tax system. A re-evaluation of the political and administrative requirements of such taxation is needed.

8.14 Another objective that influences pricing and trade policies in developing countries is that of stabilization of prices faced by both producers and consumers. As pointed out in Chapter 5, price stabilization is a very complex task for public sector agencies to perform well, and not infrequently greater instability has been observed in domestic prices than in international prices. Public sector storage programs tend to displace private sector arbitrage activities because of the subsidies given to public operations and the uncertainties created by erratic changes in public policies. Generally, the high costs of public stabilization efforts suggest that governments would do better to encourage the growth and efficient functioning of private markets.

Trade liberalization

8.15 This Report has argued that the barriers to trade that complement domestic programs--especially in industrial countries--constitute a fundamental policy issue for the international community. This is not only because trade liberalization will help developing countries attain faster rates of economic growth, but also because the benefits to the industrial countries themselves will be high.

8.16 No firm estimates are possible for the total gains in world income that will occur if trade in agricultural and agro-industrial products is fully

liberalized. The estimates cited in Chapter 6 refer only to selected sets of commodities and do not take into consideration long-term gains achievable in both industrialized and developing countries from allocating investment funds and research activity in directions consistent with each country's comparative advantages, nor the gains in manufacturing as well as in agricultural trade that will result from faster world income growth under liberalization. The estimates are nonetheless significant in that they suggest that the potential gains can be very large indeed and would, in the first instance, accrue mostly to countries with the highest levels of protection. While some developing countries may lose on account of a higher import bill for some commodities, the losses are likely to be offset by gains in exports of other commodities --especially if the developing countries reform their domestic policies simultaneously with the OECD countries.

8.17 Freer trade will also result in more stable international prices and assist both industrial and developing countries better attain their common objective of stability in farm incomes and prices. Compared to liberal trade, international commodity agreements and compensatory financing--discussed in Chapter 7--are often costly and inefficient international responses to the problems caused by the variability of international prices.

8.18 As also shown in Chapter 7, the rising protectionism in agriculture have not been mitigated by the Generalized System of Preferences or by regional schemes such as the European Community's Lome Convention or the U.S. Caribbean Initiative. Examination of the expansion of trade that has resulted from such schemes indicates that the effects have been very limited, especially for the very poorest countries. The thirty-seven least developed countries benefited from no more than 1 percent of the OECD preference imports

while just four relatively high income developing countries have had about two-fifths of all OECD preference trade. And as shown in Chapter 6 preference trade in some instances has actually been reduced world incomes. Also, the preference schemes appear to erode the interest of the beneficiaries of such schemes in promoting general trade liberalization. A reduction in protection generally reduces the special benefits from preferences.

8.19 While full liberalization is unlikely to be attained for several years, there is justification for moving forward now with partial and gradual liberalization. One approach to partial liberalization for agricultural products would be for each country to review how it could make protection more uniform across products. A large part of the net losses caused by agricultural protection, as well as a large share of taxpayer and consumer costs, are concentrated upon a small number of products with substantially higher than average rates of protection. In the United States the farm products with the highest rates of deviations from border prices are sugar, cotton, rice, wheat, and peanuts; in the European Community the products are milk, beef, sugar, and grains generally. Particular efforts should be made to lower rates of protection for these products, accompanied by alternative means of providing income support to farmers during the transition to lower levels of protection.

8.20 As in developing countries, many governments in industrial countries are considering policy reforms. This is particularly so in the European Community, the United States, Canada, and Japan, where farm programs currently involve very large costs for their citizens in their roles as consumers and taxpayers. The United States has cut its milk support prices and Japan has been gradually reducing its rice price support relative to its

avowed objective, namely that of covering the full cost of production. Still, as evidenced by the U.S. Food Security Act of 1985, which keeps most producer incentives roughly at current levels through 1990, the necessary reforms have barely begun.

8.21 Without policy changes in the direction of lower protection, these costs will continue to rise in the years ahead, whatever means are chosen for handling the growing excess supplies that maintaining agricultural protection will entail. Alternatives to reform are unattractive because:

o Adding to stocks, as the United States and the European Community have done for cereals and dairy products, becomes increasingly costly and eventually unsustainable as stocks grow larger in relation to annual domestic use, or exhaust the available storage capacity;

o Restricting output through direct interventions, such as the milk quotas in the European Community or acreage restriction programs in the United States, is unattractive, economically and politically. Compulsory measures are unpopular with producers. If the measures are voluntary, U.S. experience indicates that the budget and economic cost of obtaining even a modest output reduction are great.

o Encouraging consumption domestically or abroad via subsidies will require even more budgetary outlays.

8.22 One rationale for agricultural protection is to improve the incomes of farm families, especially those under financial stress. But the benefits of protection typically go primarily to the better-off farmers, while the burden of higher food prices is borne disproportionately by the poorer consumers. Moreover, most of the benefits of the programs become capitalized into the price of the land at the time the programs are inaugurated. Farmers

who buy land once the programs are in effect benefit little, if at all, from their continuation but, unfortunately, face substantial losses if agricultural protection is reduced or abandoned.

8.23 The domestic and trade policies followed by the industrial countries have the effect of lowering international market prices for the temperate zone farm products of those countries. For some heavily protected products, such as beef and dairy products, full trade liberalization by the OECD countries would increase world market prices substantially--by 16 percent for beef and 27 percent for dairy products according to estimates presented in Chapter 6. These price rises will ease the adjustment costs of liberalization and mean that joint liberalization by all of the OECD countries would be significantly less painful to their producers than unilateral liberalization by any one of them.

8.24 A method of phasing out protection is suggested by the fact that transferable quotas in production-control schemes sell for less than their current rental values would indicate. For example, are exist both rental and purchase markets for U.S. flue-cured tobacco quotas. The annual rental price is observed to be about one-fourth the purchase price. Quota purchase prices are not bid higher because market participants expect the tobacco program's rents to decrease in value. A natural mechanism for reform is to conduct agricultural policy in such a way as to meet the markets' expectations by reducing producers' benefits at the expected rate of depreciation. This would generate no capital losses--indeed maintaining current protection indefinitely would generate further windfall gains. The announcement of such a phased program of reduced protection will also be helpful in providing a stable policy environment in which to make the transition away from current protection.

8.25 Farmers have concerns about stability of returns that could be met while phasing out protection. Established prices below expected market prices could be used to trigger indemnity payments--a form of price insurance--if prices unexpectedly plunge well below their trend path. Such an established price is equivalent to the strike price of a put option as currently traded on U.S. exchanges for corn, soybeans, wheat, cotton, sugar, cattle, and hogs. Put options give their owner the right but not the responsibility to sell at the strike price. The options sell at a premium that reflects their expected value when exercised. In countries where farmers do not have access to options markets, or when commercially available options expire before the farmer's growing and marketing period is over, governments could themselves sell this price insurance to farmers. A transition program could begin by charging a low price for the options, with increases annually until the options sell at their market value.

Achieving liberalization: GATT negotiations

8.26 Preparations are under way for negotiations on agricultural protection in a new round of GATT negotiations. There seems to be increasing recognition in Western Europe and North America that a continuation of recent trends in the growth of productive capacity and the very slow growth of domestic and international demand will inevitably lead to higher and higher costs of protection. Sooner, rather than later, most OECD members will find it necessary to modify their domestic farm programs to reduce the costs that are incurred.

8.27 The analytical studies reviewed in this Report provide substantive evidence about the costs of existing policies and the benefits that would be realized if the market interventions were reduced. The fact that the various studies come to quite similar conclusions should make it easier for governments to accept these results as an important component of the information base from which negotiations could start.

8.28 The forthcoming negotiations have to deal with extremely complex assessments of the effects of modifications of domestic farm programs. Prior methods of estimating the reciprocal increases in exports and imports resulting from reductions in tariffs are quite inadequate to reflect the combined effects of modifications of domestic policies upon both imports into and exports from a given country. With the increased roles of deficiency payments and direct export subsidies, it is the effect of a change in programs upon the net balance of trade that becomes important. An increase in exports from A to B is of little benefit to A if B expands its exports to C at the expense of exports from A to C. The participants in GATT negotiations on agricultural products must be willing to negotiate about the various features of their domestic programs. This does not mean that any particular set of price and income support programs, such as the variable levies and export subsidies of the EC or the target prices and deficiency payments programs of the United States are to be abandoned. What governments must be willing to negotiate about are the degrees of protection provided by their price and income support programs and the effects that the programs have upon production, consumption, exports and imports and upon international market prices. In other words, there must be a willingness to negotiate about the effects particular domestic measures have upon the markets available to others.