

THE EVOLUTION OF AGRICULTURAL TRADE FLOWS

M. Ataman Aksoy

Despite tremendous change in the past 20 years in global specialization and trade in manufacturing, remarkably little structural change has occurred in global agricultural trade flows. This chapter examines the growth and structure of agricultural trade since the 1980s, looking at the performance of industrial and developing countries and of specific commodity groups. To place arguments about agricultural policies in perspective, it also presents basic statistics on rural income and poverty.

Agriculture and Rural Income

The share of agriculture in global trade has been shrinking, as has its share in global gross domestic product. Most successful developing countries have not relied on agriculture for their exports. Yet for most developing countries, growth in agriculture has a disproportionate effect on poverty because more than half of the people in developing countries reside in rural areas.¹ Some 57 percent of the developing world's rural population lives in lower-middle-income countries, and 15 percent lives in

the least-developed countries (table 2.1). Although most of the world's poor countries are in Sub-Saharan Africa, the region accounts for only about 12 percent of the developing world's rural population. Asia accounts for 65 percent.

Although the share of the population in rural areas is declining, more poor people will live in rural areas than in cities in developing countries for at least a generation. With urbanization, the rural share of poor households will decline, but based on current trends that share will not fall below 50 percent before 2035 (Ravallion 2001).

Poverty

By the international \$1-a-day poverty line, most of the world's poor live in China, India, and "other low-income" countries (see table 2.1). Least-developed countries constitute 15 percent of the world's population but almost 24 percent of the world's poor. National poverty data, which disaggregate information by rural and urban households but are not available for all countries, yield similar results. They

Research support for this chapter was supplied by Baris Sivri, Tarek Souweid, Konstantin Senyut, and Zeynep Ersel. The author would like to thank John Beghin, Donald Mitchell, John Baffes, Steve Jaffee, Ndiame Diop, Sushma Ganguly, Harry De Gorter, and anonymous reviewers for their comments. Some of the preliminary findings of this chapter have been incorporated into Beghin and Aksoy (2003) and World Bank (2003).

TABLE 2.1 Distribution of Poor People in Developing Countries, 1999

Country Category	Population 2001 (millions)				Percentage of Developing World's Rural Population	Poverty Headcount (under \$1/day)	
	National	Rural	Urban			Rate (percent)	Number of Poor People (millions)
Least-developed countries	596	443	153	74	15	49	292
Other low-income countries excluding India	839	501	338	60	17	26	218
Middle-income countries excluding China	1,435	478	957	33	16	8	114
China	1,272	805	467	63	27	18	226
India	1,032	745	288	72	25	35	358
Total	5,175	2,972	2,203	57	100	23	1,209

Source: World Bank data.

TABLE 2.2 Rural Population and Poverty for a Sample of 52 Developing Countries
(percent)

Income Group	Sample Countries		All Developing Countries
	Share of Rural Dwellers	Share of Poor in Rural Areas	Share of Rural Dwellers
Upper-middle-income countries	19	37	22
Lower-middle-income countries	64	72	61
Low-income countries	65	74	60
Least-developed countries	76	82	68
All developing countries	63	73	56

Note: Sample consists of 52 countries for which separate rural and urban income data are available.

Source: World Bank data.

show that four countries—Bangladesh, China, India, and Indonesia—account for 75 percent of the world's rural poor. It is in Asia, therefore, that rural income growth will have the greatest impact on poverty.

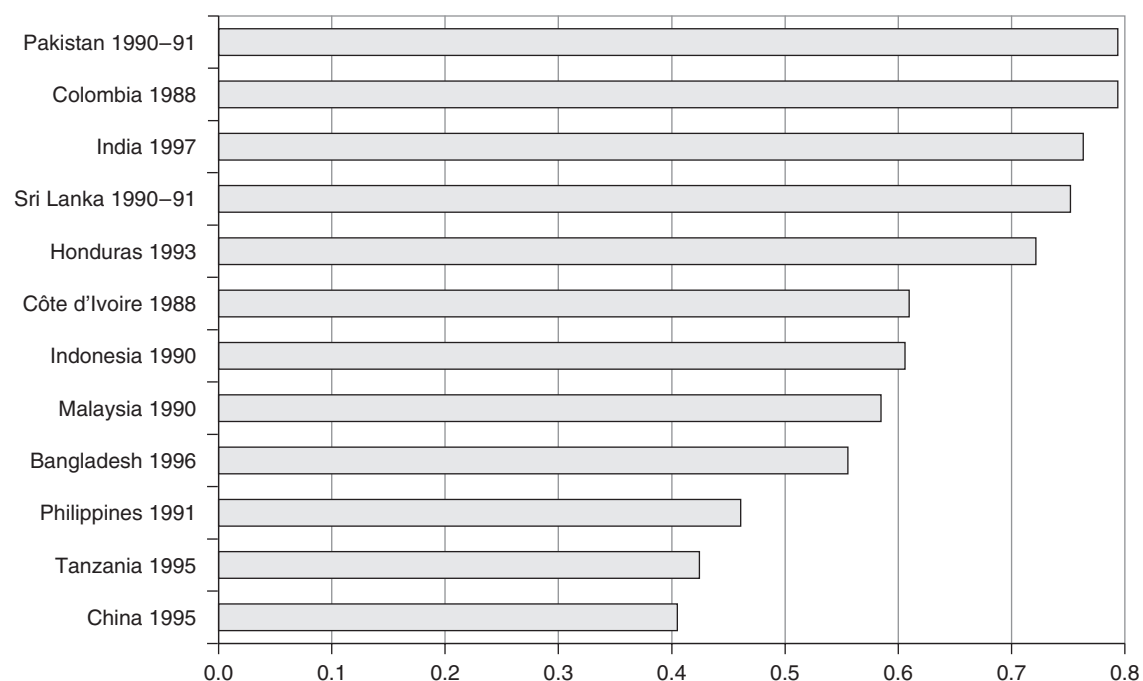
In the 52 countries for which separate rural and urban income data are available, 63 percent of the population lives in rural areas, slightly more than the 56 percent for developing countries as a whole (table 2.2). Some 73 percent of poor people live in rural areas and the incidence of poverty is higher in rural areas in all groups of developing countries, whatever their income level. In the least-developed countries, 82 percent of the poor live in rural areas.

On average, farmers are poorer than nonfarmers in developing countries but are better off than nonfarmers in industrial countries. In almost all devel-

oping countries, rural households have lower average incomes than nonrural households (figure 2.1). The ratio of rural incomes to nonrural incomes ranges from 40 to 75 percent, a relationship that remains consistent across groups of developing countries. The same relationship holds for the middle-income OECD (Organisation for Economic Co-operation and Development) countries, such as Greece, the Republic of Korea, and Turkey.² Farm household incomes are around 75–80 percent of nonfarm incomes.

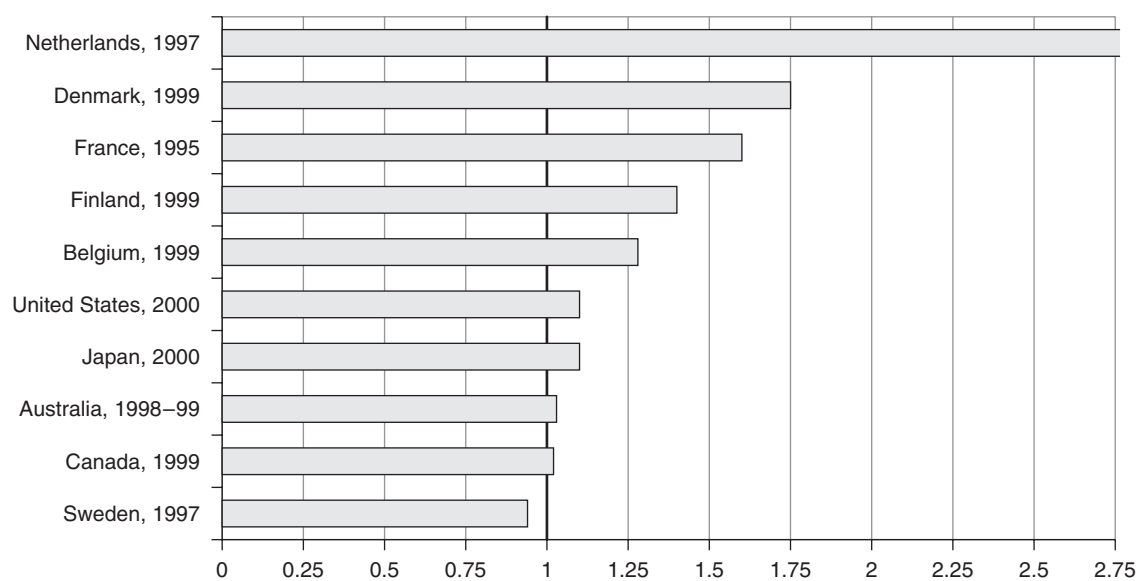
The opposite is true in many high-income OECD countries. Average farm household incomes are higher than average household incomes (figure 2.2). Average farm household incomes are almost 275 percent of average household incomes in the Netherlands, 175 percent in Denmark, 160 percent in France, and 110 percent in the

FIGURE 2.1 Ratio of Farm Household Income to Nonfarm Household Income for Selected Developing Countries, Various Years



Source: Eastwood and Lipton 2000.

FIGURE 2.2 Ratio of Farm Household Income to All Household Income for Selected High-Income Countries



Note: The ratio is for farm household income to all households except in Japan, where it is farm household income to workers' household income.

Source: OECD 2002 and 2003.

United States and Japan. In most other high-income countries, average farm incomes are either equal to or very slightly lower than the average household income (OECD 2002).

Structure of Income Sources

In addition to these differences in relative rural and nonrural income levels between developing and industrial countries, the two groups of countries have different structures of income sources. Most rural households in poor countries are dependent on agriculture. Rural households in Ethiopia, Malawi, and Vietnam, for example, derive about three-quarters of their income from agricultural activities, mainly subsistence farming (table 2.3). Wages are the second-largest income source, with some of the wage income originating in agriculture. For example, in Malawi, where 8 percent of total income is from wages, 3 percentage points of that income is from agriculture. In Mexico, where 40 percent of total income is from wages and only 26 percent is directly from agriculture, 24 percentage points of wage income is from agriculture, bringing agriculture's contribution to almost 50 percent.

As countries develop, the share of nonfarm income in rural households increases, so that agricultural price and output variations have a smaller direct impact on rural households (figure 2.3).³ In most industrial countries, the share of farm income in total household income declines even further, as other sources of income gain a larger share (salaries and wages from other activities; investment income;

and social transfers from health, pension, unemployment, and child-allowance schemes). While ratios of farm to nonfarm income are higher for some European countries, definitional differences make reliable comparisons across countries very difficult (OECD 2002).

Income Distribution

It is often argued that income distribution in rural areas of developing countries is highly unequal and that the gains from global reforms could accrue primarily to the well-to-do rather than to the rural poor. Gini coefficients for a group of developing and industrial countries indicate that despite claims to the contrary, income distribution in most developing countries is more equitable in rural households than in nonrural households (table 2.4). This is true for both low- and middle-income countries. The opposite is true in industrial countries.

In industrial countries the largest farm operations, generally the most profitable and wealthiest, receive most of the benefits of support systems. Subsidy programs are not intended to keep small, struggling family farms in business but to provide large rents to large-scale farmers. Current production-based policies, by increasing land prices, also encourage the creation of larger farms and the elimination of small family farms. The unintended spillover effects of these policies on other countries and on global markets are large and negative.

Agricultural protection in rich countries would appear to worsen global income distribution. Farmers in industrial countries earn more on average

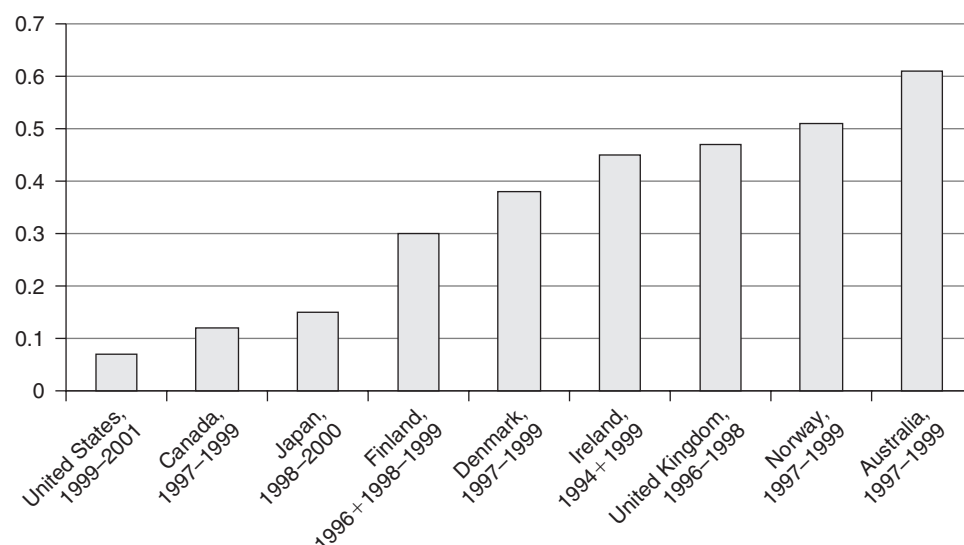
TABLE 2.3 Structure of Rural Household Incomes, Selected Developing Countries
(percent)

Type of Income	Ethiopia 2000	Malawi 1997	Vietnam 1993	Pakistan 1989	Mexico 2000
Total agricultural income	77	76	63	45	26
Agricultural cash income	18	16	—	—	22
Subsistence farming	59	60	—	—	4
Transfers	16	7	1	9	23
Wages	3	8	21	31	40
Other	4	9	15	15	11
Total	100	100	100	100	100

— Not available.

Source: World Bank household data.

FIGURE 2.3 Ratio of Farm Income to Total Income of Farm Households, Selected Countries and Years



Note: Data are averages of three most recent years available.
 Source: OECD 2002.

TABLE 2.4 Urban and Rural Income Inequality, Selected Countries and Years

Low-Income Countries	Rural Gini	Urban Gini	Middle-Income Countries	Rural Gini	Urban Gini	High-Income Countries	Rural Gini	Urban Gini
Bangladesh 1996	0.26	0.36	Mexico 1996	0.34	0.40	Australia 1994/95	0.36	0.31
Pakistan 1991	0.41	0.39	Turkey 1994	0.46	0.58	Canada 1994	0.30	0.29
Sri Lanka 1990/91	0.28	0.35	Colombia 1988	0.47	0.49	Denmark 1992	0.32	0.23
Indonesia 1990	0.26	0.35	Costa Rica 1984	0.41	0.48	Finland 1995	0.26	0.22
Lesotho 1993	0.55	0.58	Peru 1994	0.37	0.35	France 1994	0.29	0.29
Madagascar 1980	0.44	0.49	India 1997	0.30	0.36	Ireland 1987	0.37	0.32
Tanzania 1993	0.35	0.42	China 1995	0.34	0.28	Italy 1995	0.43	0.34
Uganda 1992	0.35	0.44	Rep. of Korea 1987	0.12	0.42	Netherlands 1994	0.31	0.26
Malawi 1997-98	0.33	0.52	Thailand 1986	0.45	0.46	Norway 1995	0.20	0.24
Nigeria 1996	0.42	0.50	Malaysia 1987	0.42	0.43	Spain 1990	0.28	0.31
Burkina Faso 1995	0.40	0.45	Philippines 1991	0.39	0.47	United States 1994	0.37	0.37

Source: OECD 1999 for the high-income countries; National Statistics Office for Malawi; World Bank data for Nigeria; Ozmuur and Silber 2000 for Turkey; and Eastwood and Lipton 2000 for the remaining countries.

than the national income average, and most farm aid goes to the largest and wealthiest farmers. At the other end of the global income spectrum, more poor people in developing countries tend to live in rural areas. Agricultural support in industrial countries tends to depress world prices and demand for the agricultural products of developing countries and to lower rural incomes. Global trade reforms, to the extent that they transfer resources from well-to-do farmers in industrial countries to poorer farmers

in developing countries, will thus improve global income distribution while reducing global poverty.

Broad Trends in Agricultural Trade

The last two decades have been a period of very rapid export growth from developing countries, aided by the growth of the world economy and the lowering of trade barriers, as well as by increasing supply capabilities in developing countries. The

resulting increased import and export shares in total output have been a key source of growth in many developing countries. This growth has been fastest in manufacturing, where global levels of protection have been reduced significantly. Growth has been slower in agriculture, where significant protection still remains.⁴

While the 1990s were a period of rapid trade reform in developing countries and of implementation of Uruguay Round commitments, the Uruguay Round seems not to have yielded any meaningful reduction in protection in industrial countries (see chapter 3). Protection in OECD countries increased during the 1960s and 1970s, reaching its peak in the late 1980s. There is little evidence that protection decreased significantly in the 1990s. In many cases, protection might even have increased in the 1990s through “dirty tariffication” (Nogues 2002; Ingco 1997).

Growth in Agricultural Trade

World agricultural trade in 2000–01 was \$467 billion, up from \$243 billion in 1980–81.⁵ Real manufacturing and agriculture trade expanded at similar rates during the 1980s (5.7 and 4.9 percent a year), but real manufacturing export growth accelerated to 6.7 percent a year during the 1990s, while agricultural export growth decelerated to 3.4 percent (table 2.5).

The picture is similar for developing countries. Their manufacturing export growth accelerated and agricultural export growth stagnated during the 1990s. Manufacturing export growth rates

increased both to other developing countries and to industrial countries, while agricultural export growth rates increased to other developing countries but decreased to industrial countries.

These differential growth rates are reflected in the shares of exports in world trade in developing countries (table 2.6). Their share in manufacturing exports rose dramatically, from 19 percent in 1980–81 to 33 percent in 2000–01, with higher exports to both developing countries and industrial countries. In agricultural trade, developing countries lost market shares during the 1980s and barely recovered during the 1990s to their 1980–81 level of around 36 percent. All of this gain in the 1990s came from expansion of exports to other developing countries. Despite these changes in the shares, nearly half of world agricultural trade takes place among industrial countries.

The deceleration in growth of world agricultural trade reflects the decline in real import growth rates of industrial countries, from 4.8 percent a year in the 1980s to 2.3 percent in the 1990s.⁶ Over that same period, real import growth rates for developing countries accelerated from 4 percent to 6.1 percent a year.

Two explanations have been proposed for the decline in import growth in industrial countries: a lower elasticity of demand for agricultural products in industrial countries and the decline in commodity prices in the 1990s. Gross domestic product (GDP) growth slowed from 3.0 percent a year in the 1980s to 2.3 percent a year during the 1990s in industrial countries, while rising from 3.1 percent to 3.7 percent in developing countries. Unless there

TABLE 2.5 Average Annual Real Export Growth Rates, 1980s and 1990s
(percent)

Sector	World		Developing Countries					
			Total		Developing to Developing Countries		Developing to Industrial Countries	
	1980–81/ 1990–91	1990–91/ 2000–01	1980–81/ 1990–91	1990–91/ 2000–01	1980–81/ 1990–91	1990–91/ 2000–01	1980–81/ 1990–91	1990–91/ 2000–01
Agriculture	4.9	3.4	5.3	5.3	4.2	7.2	5.9	4.4
Manufacturing	5.7	6.7	7.4	10.9	7.1	12.1	7.5	10.3

Note: Manufacturing imports are adjusted by the manufactures' unit value. World agricultural trade is adjusted by commodity price index with world trade weights, and developing country exports are adjusted by the same index with developing country trade weights.

Source: COMTRADE.

TABLE 2.6 Shares of Developing and Industrial Countries in World Exports, 1980–81 to 2000–01
(percent)

Sector by Destination	Developing Countries			Industrial Countries		
	1980–81	1990–91	2000–01	1980–81	1990–91	2000–01
<i>Agriculture</i>						
Total	37.8	33.0	36.1	62.2	67.0	63.9
To developing countries	13.4	10.5	13.7	18.9	14.5	15.6
To industrial countries	24.3	22.4	22.4	43.4	52.5	48.3
<i>Manufacturing</i>						
Total	19.3	22.7	33.4	80.7	77.3	66.6
To developing countries	–6.6	7.5	12.3	21.7	15.2	19.0
To industrial countries	12.7	15.2	21.1	59.0	62.1	47.6

Source: COMTRADE.

TABLE 2.7 Changes in Agriculture Price Indices, 1980s and 1990s
(percent)

Item	1980–81/1990–91	1990–91/2000–01
U.S. farm products (producer price index)	4.7	–6.8
Raw commodities (world trade weights)	–8.3	–6.6
Raw commodities (developing countries' weights)	–22.7	–15.2

Source: World Bank.

was a significant change in income elasticities between 1980s and 1990s, however, these changes in GDP growth rates are not large enough to explain the declines in real import growth rates. Faster liberalization in developing countries can explain some of the increases in their faster import growth rates. However, experience in the last two decades also shows that the correlation between demand and trade growth is not very high over the medium and short run, when changes in trade regimes and competitiveness will have bigger impacts (box 2.1 shows the relationship between demand and import growth for selected products in industrial countries).

As for the decline in commodity prices, these were greater during the 1980s than the 1990s and so could not have been the cause of the decline in growth rates (table 2.7).

In the absence of specialization, slowing demand growth will lead to slowing import growth if output growth does not also slow. Agricultural production indexes show a slight acceleration of production

growth rates for industrial countries and no change for developing countries (table 2.8). Thus the deceleration in import growth rates is not reflected in a deceleration in supply, and a significant component of demand is met by domestic supply.

Agricultural Trade Shares

The evidence that the agricultural trade shares of developing countries have not increased is

TABLE 2.8 Average Annual Agricultural Output Growth Rates, 1980s and 1990s
(percent)

Period	Industrial Countries	Developing Countries
1980–81/1990–91	0.88	3.67
1990–91/2000–01	1.13	3.68

Source: FAO Agriculture Production Index.

BOX 2.1 Role of Demand and Changes in Market Share

Low income elasticities for agricultural products, especially in industrial countries, are identified as the primary reason for the slowdown in global agricultural trade growth. These low income elasticities are contrasted with higher income elasticities for manufactured products. While trade and demand growth are highly correlated in the long run, it is not clear whether they are in the medium run. Variables such as level and changes in protection and the degree of comparative advantage play an important role.

If world trade expands primarily because of increases in demand, then slower agricultural trade can be explained by lower income elasticities and lower income growth in industrial countries. But if the primary cause of trade expansion over the medium run is restructuring of production and changes in both imports and exports, without commensurate changes in total demand,

then changes in trade regimes can explain a significant part of trade growth. Since the mid-1970s merchandise trade has expanded much faster than demand, showing the importance of production restructuring. Unfortunately, the systemic information that is necessary to decompose the determinants of export growth exists only for manufacturing. The information for agriculture is very limited.

When manufacturing (including food processing) import growth to industrial countries (Canada, Germany, Japan, and the United States) is decomposed between demand and market share changes, demand growth accounted for 32 percent of import growth and changes in market share for 68 percent. For imports from developing countries, growth contributed only 21 percent while changes in market share contributed 79 percent (Aksoy, Ersel, Sivri 2003).

Demand and Import Growth in Selected Industrial Countries, 1991–99
(percent)

Sectors	Industrial Country Demand Growth ^a	Import Growth from the World	Import Growth from Developing Countries	1991 Market Shares	
				World	Developing Countries
Food processing	15.82	26.65	14.46	6.41	2.42
Garments	14.35	57.29	73.08	43.19	33.80
Glass products	13.06	63.54	71.99	14.24	4.30

a. Includes Canada, Germany, Japan, and the United States.

Source: Aksoy, Ersel, Sivri 2003.

The examples of food processing, garments, and glass products illustrate the lack of a strong relationship between import and demand growth. The three subsectors have similar demand growth rates but very different import growth rates. The import growth rates are differ-

ent not only for imports from developing countries but for imports from the rest of the world as well. Depending on policy regimes and changes in policy regimes, trade growth rates can be very different from growth rates in demand.

consistent with other partial findings. Within a narrower definition of agriculture, and focusing mostly on key commodities, OECD (2001) data show that import shares of these agricultural commodities in key industrial countries have not increased since 1986. For many agricultural commodities, imports as a share of world consumption stagnated. For some commodities, such as sugar and wheat, there has been significant import substitution since the 1960s and 1970s, when the OECD countries greatly increased their protection.

A trade flow matrix for the years 1980–81, 1990–91, and 2000–01 shows the details of nominal agricultural trade flows among different groups of countries (table 2.9). The European Union is the largest trader, with exports of \$181 billion and imports of \$197 billion. Developing countries as a block are the second largest trader, with exports of \$162 billion and imports of \$128 billion.

Trade among industrial countries dominates global agricultural trade, most of it within the trade blocs such as the European Union and NAFTA

TABLE 2.9 Global Agricultural Trade Flows
(US\$ billion)

<i>Exporters</i>		Low- Income Countries	Middle- Income Countries ^a	Developing Countries	EU-15	Japan	NAFTA	Other Industrial Countries	Total Imports
Low- income countries	1980–81	0.86	2.16	3.03	2.19	0.20	1.42	0.63	7.47
	1990–91	0.81	2.52	3.33	1.17	0.06	1.22	0.73	6.52
	2000–01	1.50	4.48	5.98	2.01	0.06	1.99	1.78	11.82
Middle- income countries ^a	1980–81	3.05	25.73	28.78	14.55	1.02	20.03	6.51	70.88
	1990–91	4.05	29.72	33.77	17.41	1.32	19.30	7.18	78.99
	2000–01	9.20	48.44	57.64	22.85	1.74	23.42	10.71	116.36
Developing countries	1980–81	3.91	27.89	31.80	16.74	1.21	21.45	7.14	78.34
	1990–91	4.85	32.25	37.10	18.59	1.39	20.52	7.92	85.51
	2000–01	10.70	52.92	63.63	24.86	1.80	25.41	12.49	128.18
EU-15	1980–81	7.20	22.89	30.09	53.82	0.24	15.44	5.55	105.15
	1990–91	7.66	33.76	41.42	116.81	0.28	9.99	9.42	177.92
	2000–01	9.65	37.81	47.46	131.33	0.15	9.57	9.38	197.89
Japan	1980–81	1.13	6.64	7.77	1.22	—	9.20	2.56	20.74
	1990–91	1.85	14.61	16.47	3.78	—	14.65	4.32	39.23
	2000–01	2.52	19.21	21.73	4.83	—	17.61	5.11	49.28
NAFTA	1980–81	2.62	11.67	14.30	4.42	0.37	8.86	2.78	30.73
	1990–91	2.06	15.02	17.08	7.96	0.42	15.52	3.54	44.53
	2000–01	3.72	21.95	25.67	12.60	0.54	34.80	4.77	78.38
Other industrial countries	1980–81	0.47	1.68	2.14	3.79	0.06	1.53	0.62	8.15
	1990–91	0.40	2.31	2.71	7.01	0.07	1.66	1.09	12.54
	2000–01	0.54	3.24	3.79	7.22	0.08	2.15	1.70	14.94
Total exports	1980–81	15.33	70.77	86.10	79.99	1.89	56.48	18.64	243.10
	1990–91	16.81	97.95	114.77	154.16	2.15	62.35	26.29	359.72
	2000–01	27.14	135.13	162.27	180.84	2.57	89.55	33.45	468.67

— Not available.

Note: All data are import-based and all the exports and imports are evaluated at c.i.f. (cost, insurance, and freight) prices.

a. Includes China and India.

Source: COMTRADE.

(North American Free Trade Agreement). This intrabloc trade accounts for more than a third of global agricultural trade. In 2000–01 industrial country agricultural exports to other industrial countries totaled \$226 billion. Of that, \$131 billion was intra-EU trade (almost 58 percent) and \$35 billion was intra-NAFTA trade. Agricultural trade among industrial countries excluding intra-EU and intra-NAFTA was only \$60 billion.

Agricultural trade within trade blocs as a share of total trade is not only high, but it has increased during the last 20 years. Intra-EU agricultural imports increased from 51 percent of total agricultural imports in 1980–81 to 66 percent in 2000–01; intra-NAFTA imports rose from 29 percent to 44 percent. This increase shows how removing tariff barriers can stimulate trade.

Trade among developing countries is also increasing, with more than 50 percent of their agricultural imports coming from other developing countries. Only 39 percent of their agricultural exports are to other developing countries, however, showing the continuing importance of industrial-country markets for their exports. Other developing countries accounted for 39 percent of exports from low-income countries and 51 percent of imports in 2000–01, increases from 26 percent and 41 percent, respectively, in 1980–81. Shares for middle-income countries were similar, with other developing countries accounting for 39 percent of their exports and 50 percent of their imports in 2000–01. Developing countries have become major players in the world agricultural trade, especially if intra-EU and intra-NAFTA trade is excluded.

TABLE 2.10 Agricultural Trade Flows (excluding Intra-EU and Intra-NAFTA Trade), 1980–81 to 2000–01
(US\$ billion)

Country Group and Period	Exports	Imports	Net Imports
<i>Low-income developing countries</i>			
1980–81	15.33	7.47	–7.86
1990–91	16.81	6.52	–10.30
2000–01	27.14	11.82	–15.32
<i>Middle-income developing countries^a</i>			
1980–81	70.77	70.88	0.11
1990–91	97.95	78.99	–18.96
2000–01	135.13	116.36	–18.77
<i>EU-15</i>			
1980–81	26.17	51.32	25.16
1990–91	37.34	61.10	23.76
2000–01	49.51	66.56	17.06
<i>NAFTA</i>			
1980–81	47.62	21.86	–25.75
1990–91	46.83	29.01	–17.82
2000–01	54.75	43.57	–11.17
<i>Japan</i>			
1980–81	1.89	20.74	20.74
1990–91	2.15	39.23	39.23
2000–01	2.57	49.28	49.28
<i>Other industrial countries</i>			
1980–81	18.64	8.15	–10.49
1990–91	26.29	12.54	–13.76
2000–01	33.45	14.94	–18.51

a. India and China are included under the middle-income developing countries.

Source: COMTRADE and computations by the author.

Since 1980–81 the biggest change in net agricultural trade flows has been the relative decline in EU imports from the rest of the world and the increase in its export share (table 2.10). In 1980–81 the European Union was the largest importer in the world, accounting for 32 percent of world imports. By 2000–01 its import share had dropped to 23 percent and its export share had increased to 16 percent (from 13 percent). Its trade deficit declined as well, from \$25 billion in 1980–81 to \$19 billion in 2000–01. The opposite has happened in NAFTA, whose trade surplus has decreased. Japan has been the world's largest net importer of agricultural products since 1990–91, and Australia and New Zealand combined have surpassed NAFTA as net exporters.

The combined trade surplus of developing countries increased to \$34 billion in 2000–01, from \$8 billion in 1980–81. They have a trade surplus with all groups of countries except Australia and New Zealand.

Distribution of the Trade Expansion

A contentious issue in the literature has been the trade performance of low-income countries. Many analysts have argued that the low-income countries have not benefited from the expansion in global trade. This is only partially true in agriculture. Low-income countries' share of world exports fell from 6.3 percent in 1980–81 to 4.3 percent in 1990–01 and barely recovered to 5.8 percent in 2000–01.

However, if intra-EU and intra-NAFTA trade are excluded, their share increases from 8.5 percent in 1980–81 to 8.9 percent in 2000–01. As measured by export and import performance, the 1980s were a period of decline for low-income countries, while the 1990s were a period of major expansion.

Their overall trade surpluses, however, have risen throughout the period, from \$7.8 billion in 1980–81 to \$15 billion in 2000–01. Low-income developing countries have a trade surplus with industrial countries and with middle-income developing countries, and both of these surpluses have increased since 1980. Their exports have increased as well, primarily to other developing

countries. In 2000–01 low-income countries exported more to other developing countries than to the European Union, while in 1980–81 they exported only half as much. Some analysts have argued that it is primarily small low-income countries that have performed poorly, but the results do not change if the low-income countries are divided into small and large countries. Trade expanded for both groups during the 1990s, and both have increased their trade surpluses in agriculture (table 2.11). Smaller low-income countries did perform much worse than large low-income countries during the 1980s, however, when their exports and imports declined.

TABLE 2.11 Agricultural Trade Flows of Developing Countries, by Groups, 1980–81 to 2000–01
(US\$ billion)

Group and Period	Exports	Imports	Net Imports
<i>Low-income, small</i>			
1980–81	10.63	3.26	–7.37
1990–91	10.06	2.39	–7.67
2000–01	14.95	4.45	–10.5
<i>Low-income, large^a</i>			
1980–81	4.7	4.21	–0.49
1990–91	6.75	4.13	–2.62
2000–01	12.19	7.38	–4.81
<i>Middle-income, large exporters^b</i>			
1980–81	20.26	17.73	–2.53
1990–91	25.94	18.47	–7.47
2000–01	38.4	18.11	–20.29
<i>Middle-income, Asian importers^c</i>			
1980–81	5.28	12.62	7.34
1990–91	9.54	22.77	13.23
2000–01	7.22	28.49	21.27
<i>China and India</i>			
1980–81	7.14	5.87	–1.27
1990–91	15.13	6.56	–8.57
2000–01	23.67	14.12	–9.55
<i>Other middle-income</i>			
1980–81	38.09	34.65	–3.44
1990–91	47.34	31.19	–16.15
2000–01	65.85	55.64	–10.21

a. Bangladesh, Ethiopia, Indonesia, Nigeria, and Pakistan.

b. Argentina, Brazil, and Thailand.

c. Republic of Korea, Hong Kong (China), Singapore, Taiwan (China).

Source: COMTRADE and World Bank calculations.

Middle-income countries, however, performed worse during the 1990s, becoming smaller net exporters, with a shrinking trade surplus with the rest of the world. There are large differences in agricultural trade performance among the middle-income countries. Argentina, Brazil, and Thailand are becoming major exporters (see table 2.11). These countries, which do not have highly distorted agricultural trade regimes, are frequently cited as potential gainers from global liberalization. The upper-middle-income manufacturing exporters in East Asia, another group of developing countries, are becoming major importers of agricultural commodities, along with Japan. Of these, the Republic of Korea and Taiwan (China) have distorted trade regimes, while Hong Kong (China) and Singapore have liberal trade regimes. With liberalization, China and India, with one-third of the world's population, could emerge as major global exporters and importers. While they have trade surpluses, the surpluses did not increase significantly during the 1990s. The remaining middle-income countries experienced rapid trade growth during the 1990s, but their trade surpluses shrank considerably during this period. The significant trade liberalization among developing countries since the 1980s, especially among middle-income countries, could explain some of the expanding imports of these countries.

Disaggregated Export and Import Performance

To get an accurate sense of changes in trade, it is important to measure the contributions of different product groups to those changes.⁷ Many analysts argue that the markets for traditional exports to industrial countries are static because of both low income elasticities and product substitution. For example, coffee and tea have been partially displaced by soft drinks, cotton by synthetic fibers, and sugar by high-fructose corn syrup (see commodity chapters).

To examine the detailed flows, agricultural products were separated into four groups. One group consists mainly of developing-country tropical products, such as coffee, cocoa, tea, nuts, spices, textile fibers (mostly cotton), and sugar and confectionary products. A second is made up of highly protected temperate zone products of industrial countries, such as meats, milk and milk products,

grains, animal feed, and edible oil and oilseeds. A third category consists of dynamic nontraditional products, such as seafood, fruits, vegetables, and cut flowers, for which global protection rates are lower. A fourth group consists of other products, including processed agricultural products such as tobacco and cigarettes, beverages, and other processed foods.

Import growth rates in industrial countries have declined across all these agricultural product groups (table 2.12). The decline does not originate with price declines, which were greater during the 1980s than the 1990s, or with slower import growth of tropical products, whose share was only 16 percent in 1990–91. Industrial countries' growth in imports from both developing and other industrial countries declined during the 1990s, while developing countries' import growth rates accelerated in all four product groups. Again, the differences in import growth rates of developing countries between the 1980s and the 1990s are striking, suggesting a significant role for the trade liberalization of the late 1980s and 1990s (see chapter 3).

Changes in Trade Structure

The structure of world trade in agriculture has changed since the 1980s along with overall trade growth rates. Expanding groups include fruits and vegetables, which now have the largest share of world exports at 19 percent; fish and seafood, at 12 percent; and alcoholic and nonalcoholic beverages, at almost 9 percent (table 2.13). While these product groups tend to have high income elasticities, they also have low rates of protection in industrial and large developing countries.

Product groups that show significant declines are grains, from 17 percent to 10 percent; coffee, cocoa, and tea, from 8.5 percent to 5.4 percent; sugar and confectionary products, from 6.4 percent to 3.1 percent; and textile fibers, from 5.9 percent to 2.8 percent. These declines result from a combination of price declines, low demand elasticities, and, in the case of sugar and grains, expanded production in industrial countries.

For developing countries the biggest decline in export shares has come in their traditional tropical products, such as coffee and cocoa, while the biggest gains have come in nontraditional exports, such as seafood and fruits and vegetables. For protected products, such as grains, the increase in export

TABLE 2.12 Annual Import Growth Rates for Four Classifications of Agricultural Products, 1980s and 1990s
(percent)

Product Classification	Developing Countries		Industrial Countries	
	1980–81/ 1990–91	1990–91/ 2000–01	1980–81/ 1990–91	1990–91/ 2000–01
<i>Tropical products</i>				
Coffee, cocoa, and tea, raw and processed	1.9	5.1	–0.6	1.6
Nuts and spices	1.4	4.7	5.0	3.8
Textile fibers	3.8	0.8	0.2	–5.9
Sugar and confectionary	–5.7	3.7	0.4	0.2
Subtotal	–0.3	2.9	0.2	0.1
<i>Temperate products</i>				
Meats, fresh and processed	2.2	2.9	6.1	1.2
Milk and milk products	1.9	3.0	6.3	1.8
Grains, raw and processed	–1.3	1.6	0.4	1.8
Animal feed	5.3	5.9	3.8	1.2
Edible oil and oil seeds	2.0	6.8	1.3	1.0
Subtotal	0.7	3.5	3.6	1.4
<i>Seafood, fruits, and vegetables</i>				
Seafood, fresh and processed	8.8	7.7	10.4	3.3
Fruits and vegetables, fresh and processed	2.8	6.4	8.3	1.9
Subtotal	4.4	6.8	9.0	2.4
<i>Other processed products</i>				
Tobacco and cigarettes	8.5	4.1	6.6	3.3
Beverages, alcoholic and nonalcoholic	4.9	6.6	8.8	4.6
Other processed food	5.6	11.9	13.6	4.9
Other	–2.0	2.6	0.2	0.6
Subtotal	3.9	6.0	7.4	4.0
Total	1.4	4.3	5.1	2.0

Source: COMTRADE.

shares during the 1990s are due exclusively to expanding trade among developing countries; these products lost shares in industrial-country markets and gained them in developing-country markets. Market share gains for beverages come primarily from expanding exports of wine and beer to both developing- and industrial-country markets.

Whatever the causes for these changes, analysis of agricultural trade for developing countries now needs to focus on the new commodities, such as seafood, fruits, vegetables, and cut flowers, and on

other processed products, which together constitute almost 50 percent of the exports of developing countries. Temperate zone products constitute another 28 percent, while the traditional products that have received most of the attention in the literature now constitute only 19 percent of the exports of developing countries. Attention also has to be placed on further expanding trade within developing countries in temperate zone products such as milk, grains, and meats, whose trade within developing countries has already increased significantly.

TABLE 2.13 The Structure of Agricultural Exports, 1980–81 to 2000–01
(percent of total world trade)

Product Classification	Developing-Country Exports			Industrial-Country Exports			World Exports		
	1980–81	1990–91	2000–01	1980–81	1990–91	2000–01	1980–81	1990–91	2000–01
<i>Tropical products</i>									
Coffee, cocoa, and tea, raw and processed	18.3	11.0	8.5	2.5	2.9	3.6	8.5	5.6	5.4
Nuts and spices	2.4	2.7	2.8	0.7	0.7	0.8	1.3	1.3	1.5
Textile fibers	8.0	6.2	3.3	4.5	3.9	2.6	5.9	4.7	2.8
Sugar and confectionary	10.5	4.6	4.3	3.9	2.8	2.3	6.4	3.4	3.1
Subtotal	39.2	24.4	18.9	11.6	10.3	9.3	22.0	14.9	12.7
<i>Temperate products</i>									
Meats, fresh and processed	7.2	8.3	6.0	14.8	15.7	15.4	11.9	13.2	12.0
Milk and milk products	0.3	0.7	1.1	7.9	7.9	7.6	5.0	5.5	5.2
Grains, raw and processed	9.3	4.9	7.0	21.6	13.8	11.6	16.9	10.9	9.9
Animal feed	7.5	7.9	8.5	7.7	5.1	5.3	7.7	6.0	6.4
Edible oil and oil seeds	4.6	5.7	5.5	4.8	4.4	4.4	4.7	4.8	4.8
Subtotal	28.8	27.5	28.1	56.9	46.8	44.2	46.3	40.4	38.3
<i>Seafood, fruits, and vegetables</i>									
Seafood, fresh and processed	6.9	15.9	19.4	5.5	8.2	8.0	6.0	10.8	12.2
Fruits, vegetables, and cut flowers	14.7	22.2	21.5	13.1	17.2	17.3	13.7	18.9	18.9
Subtotal	21.6	38.2	41.0	18.7	25.5	25.4	19.8	29.7	31.0
<i>Other processed products</i>									
Tobacco and cigarettes	2.6	3.1	3.3	3.0	4.2	4.8	2.8	3.8	4.2
Beverages, alcoholic and nonalcoholic	1.1	1.8	3.6	6.9	9.5	11.5	4.7	6.9	8.6
Other products and processed food	6.7	5.0	5.2	3.0	3.8	5.0	4.4	4.2	5.1
Subtotal	10.4	9.9	12.1	12.8	17.5	21.2	11.9	15.0	17.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: COMTRADE.

These developments show that many developing countries can compete in the product categories historically dominated by industrial countries and that trade reforms in industrial sectors could lead to a large expansion of exports from these developing countries.

Industrial-country export structures have also changed, with a decline in exports of protected products and expansion in exports of beverages and fruits and vegetables (including intra-EU trade). Greater domestic production of sugar, grains, and other protected products has made many industrial countries more self-sufficient and reduced their exports to each other.

Degree of Processing

Despite significant tariff escalation in processed products, trade has moved toward processed (final) agricultural products and away from raw material and intermediate products.⁸ In 1980–81 final products made up slightly more than a quarter of world exports, and raw and intermediate products made up two-thirds. By 2000–01 the share of final products had increased to 38 percent of total exports (table 2.14). The share of final products in exports increased for both developing and industrial countries, but in 2000–01 final products still constituted only 10 percent of the exports from low-income

TABLE 2.14 Share of Agricultural Final Products in Exports, 1980–81 to 2000–01
(percent)

Years	World	Developing Countries	Developing Low-Income Countries	Developing Middle-Income Countries ^a	Industrial Countries
1980–81	27.3	15.5	6.6	17.4	33.8
1990–91	33.2	19.1	7	21.2	39.8
2000–01	38.3	24.8	10.4	27.8	45.6

a. Includes China and India.

Source: COMTRADE.

countries, compared with 46 percent from industrial countries.

Tariff escalation has slowed the growth of trade in final products. Shares of final products are much higher within trading blocs, where there are no tariffs, than as shares of exports to the rest of the world. For example, in 2000–01 final products constituted 49 percent of intra-EU exports but 39 percent of EU exports to the rest of the world. For NAFTA final products constituted 38 percent of intra-NAFTA exports but 32 percent of NAFTA exports to the rest of the world. For developing countries, however, the share of final products in 2000–01 exports was the same (around 25 percent) for exports to developing countries and to industrial countries (table 2.15).

More detailed disaggregation of export flows by degree of processing does not yield much more information than the aggregate flows. The export share of final products increased for tropical and temperate product groups. For seafood and fruits and vegetables, the shares of final product stayed the same because of the higher value of fresh produce. In tropical products trade among industrial countries is now primarily trade in final products.

Export Shares by Product and Region

Developing countries lost agricultural market shares during the 1980s, mainly because the increase in their shares of seafood and fruit and vegetable exports was not great enough to compensate for the decline in tropical product exports (table 2.16). During the 1990s developing countries increased their export shares for most product groups, while the loss of market share in tropical products slowed.

The geographical structure of developing-country exports has changed little since the 1980s.

Sub-Saharan Africa is the only region that has not made up the market share losses of the 1980s. Despite preferential access, Africa's export share in industrial-country markets has halved. The other regions made a comeback in the 1990s.

Conclusion

The incidence of poverty is much higher in rural areas than in urban areas in developing countries, the average incomes are much lower, and even with rapid urbanization, the rural share of the poor will not fall below 50 percent before 2035. In industrial countries average farm household incomes are higher than average household incomes. The shares of nonfarm income in total farm household incomes are much higher in industrial countries than in developing countries, partially shielding farmers from price and supply shocks. Finally, the distribution of income is more equitable in rural areas in developing countries than in urban areas, while the opposite is true for industrial countries.

Remarkably little structural change has occurred in global agricultural trade since the early 1980s, unlike the significant changes in global specialization and trade in manufacturing. Unlike the case with manufacturing, developing countries have not been able to increase their export shares in agriculture. They have maintained their global trade shares by expanding exports to other developing countries. Again unlike the case with manufacturing and services, trade-to-output ratios in agriculture have not increased. Import growth rates accelerated in developing countries and decelerated in industrial countries during the 1990s. These results are consistent with significant trade liberalization in manufacturing in both developing and industrial countries and reforms in agricultural trade regimes only in developing countries. Developing countries

TABLE 2.15 Export Shares by Level of Processing, 1980–81 to 2000–01
(percent of world trade)

Product	Industrial to Developing Countries			Industrial to Industrial Countries			Developing to Developing countries			Developing to Industrial Countries			Total Exports		
	1980–81	1990–91	2000–01	1980–81	1990–91	2000–01	1980–81	1990–91	2000–01	1980–81	1990–91	2000–01	1980–81	1990–91	2000–01
<i>Tropical products</i>															
Raw	1.45	1.31	1.33	3.02	2.74	1.61	3.77	2.14	2.16	8.86	4.83	3.39	17.10	11.03	8.49
Final	0.96	0.56	0.50	1.40	1.91	2.09	0.65	0.38	0.48	1.09	0.17	0.26	4.10	3.02	3.33
Total	2.41	1.87	1.83	4.42	4.64	3.69	4.42	2.52	2.64	9.95	5.01	3.66	21.20	14.05	11.82
<i>Temperate products</i>															
Raw	10.10	6.73	5.68	15.31	14.64	12.53	4.79	3.62	4.45	4.67	3.72	3.19	34.88	28.71	25.85
Final	2.61	2.07	2.74	7.40	7.90	7.22	0.56	0.69	1.30	0.86	1.05	1.23	11.44	11.71	12.49
Total	12.71	8.80	8.42	22.72	22.54	19.75	5.36	4.31	5.75	5.53	4.78	4.42	46.32	40.42	38.34
<i>Seafood, fruits, and vegetables</i>															
Raw	1.11	1.18	1.87	7.62	11.81	10.23	1.56	1.89	2.56	5.21	8.19	9.15	15.50	23.07	23.81
Final	0.65	0.39	0.63	2.61	4.05	3.82	0.44	0.47	0.76	1.39	2.56	2.91	5.08	7.47	8.12
Total	1.75	1.58	2.50	10.22	15.86	14.05	2.00	2.36	3.32	6.60	10.75	12.05	20.58	30.54	31.93
<i>Other processed products</i>															
Raw	0.60	0.39	0.49	1.39	1.32	0.96	1.33	0.84	0.99	1.89	1.41	1.05	5.22	3.96	3.49
Final	1.37	1.85	2.42	4.63	8.16	9.67	0.33	0.51	1.04	0.36	0.51	1.29	6.69	11.03	14.42
Total	1.97	2.24	2.91	6.02	9.49	10.63	1.66	1.35	2.03	2.25	1.92	2.35	11.91	14.99	17.91
<i>Total food and agriculture</i>															
Raw	13.26	9.61	9.36	27.35	30.51	25.33	11.45	8.49	10.16	20.63	18.16	16.78	72.69	66.77	61.63
Final	5.59	4.87	6.29	16.03	22.01	22.80	1.98	2.05	3.58	3.70	4.29	5.69	27.31	33.23	38.37
Total	18.85	14.48	15.65	43.38	52.52	48.12	13.43	10.54	13.75	24.33	22.45	22.47	100.00	100.00	100.00

Note: "Raw" includes both raw and intermediate goods, because their movements are highly correlated.
Source: COMTRADE.

TABLE 2.16 Export Shares by Product and Region, 1980–81 to 2000–01
(percent of world trade)

Item	Exports to Developing Countries			Exports to Industrial Countries			Total Exports		
	1980 –81	1990 –91	2000 –01	1980 –81	1990 –91	2000 –01	1980 –81	1990 –91	2000 –01
<i>Tropical products</i>									
Industrial countries	2.4	1.9	1.8	4.4	4.6	3.7	6.8	6.5	5.5
Developing countries	4.4	2.5	2.6	10.0	5.0	3.7	14.4	7.5	6.3
Americas	1.8	0.7	0.8	4.9	2.2	1.5	6.7	2.9	2.4
East Asia And Pacific	1.1	0.7	0.6	1.5	0.9	0.8	2.5	1.6	1.3
Europe and Central Asia	0.4	0.1	0.3	0.3	0.2	0.2	0.7	0.4	0.5
Middle East and North Africa	0.1	0.1	0.2	0.1	0.1	0.1	0.3	0.1	0.2
South Asia	0.5	0.5	0.3	0.4	0.2	0.2	0.9	0.8	0.5
Sub-Saharan Africa	0.5	0.3	0.5	2.8	1.4	0.9	3.2	1.7	1.4
Subtotal	6.8	4.4	4.5	14.4	9.6	7.4	21.2	14.0	11.8
<i>Temperate products</i>									
Industrial countries	12.7	8.8	8.4	22.7	22.5	19.8	35.4	31.3	28.2
Developing countries	5.4	4.3	5.8	5.5	4.8	4.4	10.9	9.1	10.2
Americas	2.2	1.3	2.7	2.1	2.3	2.2	4.3	3.7	4.9
East Asia And Pacific	1.7	1.9	1.7	2.0	1.4	1.2	3.7	3.2	3.0
Europe and Central Asia	0.7	0.5	0.5	0.7	0.7	0.6	1.3	1.2	1.2
Middle East and North Africa	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.3	0.3
South Asia	0.4	0.3	0.4	0.1	0.1	0.1	0.5	0.4	0.6
Sub-Saharan Africa	0.3	0.1	0.1	0.5	0.2	0.1	0.8	0.3	0.3
Subtotal	18.1	13.1	14.2	28.2	27.3	24.2	46.3	40.4	38.3
<i>Seafood, fruits, and vegetables</i>									
Industrial countries	1.8	1.6	2.5	10.2	15.9	14.0	12.0	17.4	16.5
Developing countries	2.0	2.4	3.3	6.6	10.7	12.1	8.6	13.1	15.4
Americas	0.4	0.4	0.8	2.2	3.8	4.3	2.6	4.1	5.1
East Asia And Pacific	0.8	1.3	1.4	2.3	3.8	4.3	3.0	5.1	5.7
Europe and Central Asia	0.2	0.2	0.4	0.7	1.2	1.3	0.9	1.4	1.7
Middle East and North Africa	0.3	0.2	0.3	0.4	0.6	0.5	0.7	0.9	0.8
South Asia	0.2	0.2	0.2	0.4	0.5	0.6	0.6	0.6	0.8
Sub-Saharan Africa	0.1	0.1	0.2	0.7	0.8	1.0	0.8	0.9	1.2
Subtotal	3.8	3.9	5.8	16.8	26.6	26.1	20.6	30.5	31.9
<i>Other processed products</i>									
Industrial countries	2.0	2.2	2.9	6.0	9.5	10.6	8.0	11.7	13.5
Developing countries	1.7	1.4	2.0	2.3	1.9	2.3	3.9	3.3	4.4
Americas	0.1	0.1	0.5	0.4	0.5	0.9	0.5	0.6	1.4
East Asia And Pacific	1.2	0.9	1.0	1.3	0.8	0.8	2.5	1.7	1.8
Europe and Central Asia	0.2	0.1	0.2	0.2	0.3	0.2	0.4	0.4	0.4
Middle East and North Africa	0.1	0.1	0.2	0.0	0.0	0.0	0.1	0.1	0.2
South Asia	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1
Sub-Saharan Africa	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4
Subtotal	3.6	3.6	4.9	8.3	11.4	13.0	11.9	15.0	17.9
<i>Total</i>									
Industrial countries	18.9	14.5	15.7	43.4	52.5	48.1	62.2	67.0	63.8
Developing countries	13.4	10.5	13.7	24.3	22.4	22.5	37.8	33.0	36.2
Americas	4.6	2.6	4.8	9.5	8.8	9.0	14.1	11.4	13.8
East Asia And Pacific	4.7	4.8	4.8	7.1	6.9	7.1	11.8	11.7	11.9
Europe and Central Asia	1.4	0.9	1.4	2.0	2.4	2.4	3.4	3.3	3.7
Middle East and North Africa	0.7	0.6	0.9	0.6	0.8	0.7	1.3	1.4	1.5
South Asia	1.2	1.1	1.0	0.9	0.9	1.0	2.1	2.0	2.0
Sub-Saharan Africa	0.9	0.7	0.9	4.2	2.6	2.3	5.1	3.3	3.3
Total	32.3	25.0	29.4	67.7	75.0	70.6	100.0	100.0	100.0

Source: COMTRADE.

lost export market shares during the 1980s, mainly because of the collapse in the value of tropical products, and made up the loss during the 1990s by increasing their shares of other commodities.

Trade among industrial countries still dominates world agricultural trade flows, with much of the trade taking place within trading blocs, such as the European Union and NAFTA. Trade among developing countries has expanded, especially during the 1990s, when most developing countries grew faster than they had in the past and liberalized their trade regimes. The middle-income developing countries have now become the biggest single market for the exports of low-income developing countries. Despite the belief of many to the contrary, low-income countries have increased their trade surplus in agricultural commodities over the last two decades, especially during the 1990s.

Some change has taken place in the product mix of global agricultural trade. The shares of nontraditional products, such as seafood, fruits, and vegetables, have increased, and the shares of traditional tropical products have decreased. Seafood, fruits, and vegetables, and processed foods now constitute about 50 percent of the agricultural exports of developing countries. Temperate zone products, such as grains, dairy, and meats, constitute another 28 percent. Traditional exports, such as tea, coffee, cocoa, sugar, cotton, nuts, and spices, now constitute a very small share of exports. This suggests the need for more attention to global and country policies for nontraditional product groups.

There is also a move toward greater trade in final products. However, most of this trade takes place within trade blocs, such as the European Union and NAFTA, primarily because of steeply escalating tariffs. Despite significant reforms, the European Union has become more self-sufficient in agriculture, and its net trade deficit has shrunk. During the 1990s, Japan became the biggest net importer of agricultural commodities, followed by the Asian Tigers: the Republic of Korea, Taiwan (China), Hong Kong (China), and Singapore. Sub-Saharan Africa is the only developing-country region that has not regained the market share lost during the 1980s.

Although linking this lack of change to trade policies is not straightforward, the next chapter shows that agricultural trade policies tend to be much more restrictive than manufacturing policies. This very high protection in agriculture has slowed the move-

ment of production to more competitive producers and created much more static global trade flows.

Notes

1. Global poverty rates estimated on a consistent international poverty line of \$1 a day are not disaggregated by rural and urban populations. Such disaggregated data are available only for national poverty rates, which vary across countries, and the country coverage of these surveys is limited. Data here are from 52 country household surveys conducted between 1990 and 2001.

2. The information and data are not identical, however. There is a difference between rural households and farm households. One is a locational definition, while the other is defined by the sources of income.

3. Of course, in most regions where agriculture is the primary activity, income from nonfarm sources is also related to agriculture. In regions where there are other nonfarm-related activities, or other transfers, the relationship between off-farm income and farm income will not be so close.

4. Annex 2 in the attached CD-ROM has detailed product coverage by degree of processing, description of the commodity groups, the concordance between nomenclatures, the country coverage, country income and geographic classifications, and detailed trade flows by more detailed commodity groups.

5. This study uses a broad definition of the agricultural sector that includes fisheries as well as raw agricultural commodities and processed food products. This classification includes all stages of processing and results in economically consistent data series. See the CD-ROM for the details of the coverage and definition of subgroups. Data for the European Union-15 have been used for all periods. Mexico is included in NAFTA and not in developing countries. For comparability over time, trade within the Commonwealth of Independent States is excluded from developing-country trade data for 1990–2001, as is trade within the former Yugoslavia and within the Southern African Customs Union. Data on imports are used in most cases, but export data are used for the following countries and years: United Arab Emirates 2000–01, Bulgaria 1980–81 and 1990–91, German Democratic Republic 1980–81, Iran 1980–81 and 1990–91, Kuwait 2000–01, Lebanon 1980–81 and 1990–91, Libya 2000–01, Romania 1980–81, Sudan 1990–91, Soviet Union 1980–81, South Africa 1990–91, China 1980–81, and intra-EU flows for 2000–01.

6. The deceleration of the world trade growth rates was not caused by price declines in the 1990s. In nominal terms, import growth declined from 5.1 percent a year in the 1980s to 2.1 percent in the 1990s in industrial countries, while rising from 1.4 percent to 4.3 percent in developing countries.

7. The price series are not consistent with the trade categories so the disaggregated flows discussed in this section are based on nominal trade data.

8. To have consistent data going back to 1980, this analysis uses Standard International Trade Classification (SITC 1), which is not as precise as the Harmonized System in separating the products by degree of processing. Thus the results are not as precise as they are under the Harmonized System classification.

References

Aksoy, M. Ataman, Z. Ersel, and B. Sivri. 2003. "Demand Growth versus Market Share Gains: Decomposing Export Growth in the 1990s." World Bank, Washington, D.C.

- Beghin, John C., and M. Ataman Aksoy. 2003. "Agricultural Trade and the Doha Round: Preliminary Lessons From the Commodity Studies." Paper presented at the Annual World Bank Conference on Development Economics Europe Conference, May 15–16, Paris.
- Eastwood, R., and M. Lipton. 2000. "Rural-Urban Dimensions of Inequality Change." University of Sussex, Brighton, United Kingdom.
- Ingo, M. 1997. "Has Agricultural Trade Liberalization Improved Welfare in the Least-Developed Countries? Yes." Policy Research Working Paper 1748. World Bank, Washington, D.C.
- Nogues, Julio J. 2002. "Comment to 'Trade, Growth, and Poverty—A Selective Survey' by Andrew Berg and Anne Krueger, and 'Doha and the World Poverty Target' by L. Alan Winters." Commentary presented at the Annual World Bank Conference on Development Economics, May 10–11, Brussels.
- OECD (Organisation for Economic Co-operation and Development). 1999. "Low Incomes in Agriculture in OECD Countries." Directorate for Food, Agriculture, and Fisheries, Committee for Agriculture, Paris.
- . 2001. *The Uruguay Round Agreement on Agriculture: An Evaluation of Its Implementation in OECD Countries*. Paris.
- . 2002. "Farm Household Income Issues in OECD Countries: A Synthesis Report." Directorate for Food, Agriculture, and Fisheries, Committee for Agriculture, Paris.
- . 2003. *Farm Household Income: Issues and Policy Responses*. Paris.
- Ravallion, Martin. 2001. "On the Urbanization of Poverty." World Bank, Country Economics Department, Washington, D.C.
- Silber, J., and S. Ozmuur. 2000. "Decomposition of Income Inequality: Evidence from Turkey." Topics in Middle Eastern and North African Economics, Electronic Journal 2. Economic Association and Loyola University, Chicago.
- World Bank. 2003. *Global Economic Prospects 2004: Realizing the Development Promise of the Doha Agenda*. Washington, D.C.