FOREIGN ECONOMIC DEVELOPMENT AND AGRICULTURAL TRADE

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Agriculture's Interest in Foreign Economic Growth

American agriculture has a big stake in larger overseas markets for farm products resulting from foreign economic development and growth. In recent years, farm products from 65 million harvested acres -- about 1 acre in 5 -- have been exported. Value of agricultural products shipped abroad totaled a little over $5 billion in both 1961 and 1962. This is about 15 percent of the total value of U.S. farm marketings.

Traditionally, the best markets for agricultural products have been the highly-developed countries. For example, Japan, the United Kingdom, West Germany, Canada, and the Netherlands have been the largest importers of U.S. farm products. Trade with these countries can be expected to increase as they achieve still higher incomes.

But over the long term, less-developed countries are potential markets for much larger quantities of products from the United States and other developed countries. How rapidly markets expand in low-income countries will depend upon how rapidly these countries achieve economic growth and increase their foreign exchange earnings. Economic and technical aid programs can be very important in helping low-income countries achieve higher growth rates.

Food aid programs also can make important contributions to economic growth. Under these programs, unemployed people in the less-developed countries are paid with food for work in improving resources and building up productive capacity.

If the various aid programs help improve income levels in the low-income countries, commercial markets for farm products as well as other products will be increased. Italy, Greece, and Japan, for example, are countries where economic growth has led to expanded commercial export markets for U.S. farm products. 2/

1/ Chief and International Agricultural Economist, respectively, of the Economic Development Branch, Development and Trade Analysis Division, ERS.

2/ See Johnson, Sherman E., "The Strategy of Food Aid," Econ. Res. Ser., U.S. Dept. Agr., paper presented at the 39th Annual Agricultural Outlook Conference, Washington, D. C., November 14, 1961.

The complementary relationship between economic growth and trade has long been recognized. In 1580, for example, Richard Hakluyt, an English historian and geographer, said to English merchants:

> "If you find any island or maine land populous and the same people hath need of cloth, then you are to advise what commodities they have to purchase the same withal. If they be poore, then you are to consider the soile and how by any possibilities the same may be made to enrich them, that hereafter they may have something to purchase the cloth withal." 1/

Economic growth in less-developed countries depends on improving output and productivity of their agriculture as well as their other industries. Although demand for food may not go up as much as demand for industrial products as countries grow, total demand for agricultural products does expand, and international trade in these products increases as countries achieve higher income levels.

This paper compares the relationship of economic development and agricultural trade with associated levels of total and agricultural trade in developed and less-developed countries. Total and per capita incomes are used as measures of economic growth. Special attention is given to how economic growth and incomes abroad influence exports of U.S. agricultural products.

Income and trade data for three groups of countries are examined:

(1) Developed countries of the free world, including countries of Western Europe, Canada, Australia, New Zealand, Republic of South Africa, Japan, and the United States.

(2) Less-developed countries of the free world.

(3) Eastern Trade Area, including countries of Eastern Europe, the Soviet Union, Mainland China, Mongolia, North Korea, and North Vietnam.

World Population and Income Patterns

About two-thirds of the world's population is in the free world and about one-third in the Communist, referred to as the Eastern Trade Area (table 1). Within the free world, about one-third lives in developed countries and about two-thirds in less-developed areas.

Income estimates of the less-developed countries, where much production is for subsistence, have many limitations. However, available data indicate that the (1) developed countries (excluding the Eastern Trade Area) had about two-thirds of total world income in 1959-60 (average of calendar years 1959 and

1/ Quoted by Black, Eugene, R., "The Diplomacy of Economic Development" Harvard University Press, Cambridge, Mass. 1960, p. 40.

Table 1.--Estimates of population and income, by major regions, 1959-60 averages 1/

Region 2/	Population	Income: Total	Income: Agricultural	Percentage distribution: Population	Percentage distribution: Total income	Percentage distribution: Agricultural income	Agricultural income as share of total income
	Million	Billion dollars		-- Percent --			
Developed	669	730	69	23	67	39	9
United States	179	409	16	6	38	9	4
Other countries	490	321	53	17	29	30	17
Less-developed	1,294	142	51	44	13	29	36
Eastern Trade Area	981	214	57	33	20	32	27
World total	2,943	1,086	177	100	100	100	16

1/ Value data are U.S. dollars. Data on agricultural income are preliminary estimates. Estimates of income and population were computed from data given in the United Nations Statistical Yearbook, 1961 and 1962.

2/ Other developed countries include Belgium-Luxembourg, Netherlands, West Germany, France, Italy, Denmark, United Kingdom, Norway, Sweden, Switzerland, Ireland, Austria, Portugal, Finland, Greece, Iceland, Spain, Turkey, Yugoslavia, Canada, Australia, New Zealand, Republic of South Africa, and Japan. Less-developed countries include Africa (all countries except Republic of South Africa), Latin America, Asia less Japan, China Mainland, North Vietnam, North Korea, and Mongolia. Eastern Trade Area includes U.S.S.R., Eastern Europe, China Mainland, North Vietnam, and North Korea.

1960), (2) less-developed countries had about one-eighth, and (3) Eastern Trade Area about one-fifth (table 1). These data indicate the relative importance of total production and economic activity in the different regions. There may be some underestimating of income in the less-developed countries because of difficulties in placing values on subsistence production, which accounts for a large part of total income in these areas. But even with upward revision of income data for the less-developed countries to allow for this, developed countries would still account for the major part of world production and income.

Agriculture is more important in the less-developed countries and in the Eastern Trade Area than in the developed countries. For example, agricultural income accounted for only 9 percent of total income in the developed countries in the 1959-60 period, compared with 36 percent in the less-developed countries and 27 percent in the Eastern Trade Area. But this does not mean the less-developed countries account for most of the world's agricultural production. According to preliminary estimates, developed countries earned about 39 percent of world agricultural income in 1959-60, the less-developed countries had 29 percent, and the Eastern Trade Area about 32 percent.

The United States accounts for the major part of the total income and economic activity of developed countries outside the Eastern Trade Area. With only 27 percent of the population, the United States accounted for 56 percent of total income and 23 percent of agricultural income of the developed region in 1959-60.

World Trade in Agricultural and Other Products

It would not be correct to say that low-income countries are not developed because they do not trade enough. In 1959 and 1960, total exports and imports of the less-developed countries amounted to 19 percent of the total value of all production and income in these countries (table 2). The comparable percentage was also 19 percent for developed countries, excluding the United States. Exports took only 5 percent and imports 4 percent in the United States. But the United States covers a large area with much specialization in production and trade among regions within the country. One-third or more of total production enters world trade channels in many small developed countries such as Norway and Sweden.

Total Agricultural Trade and Income

Agricultural products account for nearly one-third of total world trade. For less-developed countries in 1959-60, 54 percent of all exports were agricultural. The proportion was 23 percent for the United States and 25 percent for other developed countries. It was 28 percent for the Eastern Trade Area. These data suggest that agricultural exports become a smaller proportion of total exports as countries develop and achieve higher incomes. But the absolute volume of agricultural exports of most countries continues to increase with economic growth and rising incomes.

Total value of exports for a country or region approximately equals total value of imports over a period of years, although exports may not equal imports in any one year.

Developed countries as a group import more agricultural products than they export (table 2). However, total value of agricultural exports from the United States was about 10 percent larger than agricultural imports in 1959-60. Other developed countries imported about $8 billion more agricultural products than they exported. Countries in Western Europe and Japan are large net importers.

In contrast, less-developed countries as a group export more agricultural products than they import. Less-developed countries rely heavily upon agricultural exports as a source of foreign exchange earnings and employment. In 1959 and 1960, total value of agricultural products exported by these countries averaged nearly $8 billion more than value of agricultural imports. The Eastern Trade Area imports slightly more agricultural products than it exports.

This relationship of agricultural imports to development suggests that imports of agricultural products become a larger proportion of total imports as countries achieve higher incomes. The opposite relationship is suggested by data

Table 2.--Foreign trade, total and agricultural, by major regions, 1959-60 averages 1/

Region 2/	Total		Agricultural		Share of total income		Share of total exports		Share of total agric. income 4/	
	Exports	Imports	Exports	Imports	Total exports	Total imports	Agri. exports	Agri. imports	Agri. exports	Agri. imports
	-- Billion dollars --				-- Percent --					
Developed.......	80.0	77.1	19.9	27.5	11	10	25	36	29	40
United States.	18.9	15.0	4.4	4.0	5	4	23	27	27	25
Other countries.......	61.1	62.1	15.5	23.5	19	19	25	38	29	44
Less-developed..	26.5	27.5	14.3	6.5	19	19	54	24	28	13
Eastern Trade Area..........	14.5	14.7	4.1	4.3	7	7	28	29	7	7
Unspecified 3/..	---	1.7	---	---	---	---	---	---	---	---
World total.....	121.0	121.0	38.3	38.3	11	11	32	32	22	22

1/ Data are preliminary estimates. Export and import data are current values in U.S. dollars. Sources: United Nations Statistical Yearbook, 1961 and 1962; GATT International Trade, 1961. Geneva. September 1962; and "U.S. Foreign Agricultural Trade by Commodities, Calendar Year 1962," supplement to the monthly Foreign Agricultural Trade of the United States, ERS, USDA, June 1963.

2/ See footnote 2 of table 1 for countries in each region.

3/ Undistributed exports of special categories from the United States.

4/ Agricultural income is net contribution of agriculture to national income and much less than total value of agricultural production. Therefore, the percentage indicates only the relative importance of agricultural exports to agricultural sectors in each region.

on agricultural and total exports. For less-developed countries, 24 percent of all imports were agricultural. The proportion was 27 percent for the United States, but 38 percent for the other developed countries. The high proportion of agricultural products to total imports of developed countries suggests that as the less-developed countries achieve higher levels of development, they will become larger markets for U.S. agricultural exports.

One can express the value of agricultural exports as a percentage of agricultural income to show the relative importance of agricultural exports to the agricultural sectors of each region. However, this percentage does not indicate the proportion of agricultural production exported. Agricultural incomes herein referred are values added by agriculture to the national income. Total value of agricultural production is larger than agricultural income because it includes value of products and resources purchased from other economic sectors for use in farm production. Agricultural income represents only product value of agricultural labor and land.

Agricultural exports are almost as important to agriculture in the developed countries as in less-developed countries. In both groups, agricultural export values in 1959 and 1960 amounted to nearly 30 percent of total agricultural income (table 2). However, in the Eastern Trade Area the comparable figure was only 7 percent.

Per Capita Income and Trade

The relation between levels of economic development and trade also is shown by per capita income and trade data (table 3). Income, exports, and imports per capita of all products were 6 times larger for developed countries than for less-developed countries in 1959-60. Agricultural exports were only 3 times larger, but agricultural imports were about 9 times larger in the developed than in less-developed countries in 1959-60. The relationship between income and total trade is more uniform than for agricultural trade. The high dependency of less-developed countries on agricultural exports is reflected in the relatively high level of exports per capita at this level of income. The relatively low level of agricultural imports per capita probably reflects greater use of their foreign exchange earnings for capital imports needed to finance industrial and general economic development. These data suggest that even in the low-income countries agricultural imports would be increased with higher levels of income and economic development.

U.S. Share of World Trade

U.S. exports accounted for 12 percent of all agricultural products and for 13 percent of all goods and services entering world trade channels in 1959-60. These percentages are based on total exports, including exports by foreign countries to the United States.

Table 3.--Estimates of income and foreign trade, by major regions, 1959-60 averages 1/

Region 2/	Total income	Per capita estimates of Total: Exports	Total: Imports	Agricultural: Exports	Agricultural: Imports
	-- Dollars --				
Developed	1,091	119	115	30	41
United States	2,285	105	84	25	22
Other countries	655	125	127	32	48
Less-developed	110	20	21	11	5
Eastern Trade Area	218	15	15	4	4
World total	369	41	41	13	13

1/ Computed from data in tables 1 and 2.
2/ See footnote 2 of table 1 for countries in each region.

Table 4 shows the share of total imports of foreign countries supplied by the United States. In 1959-60, U.S. exports accounted for the following percentages of total imports by foreign countries:

	Developed countries (Percent)	Less-developed countries (Percent)
Agricultural products	12	23
All goods and services	17	22

These data indicate that the United States is less important as a source of agricultural products than as a source of other products. They also indicate the United States accounts for a much larger share of imports for the less-developed countries than for the developed countries.

Obviously, U.S. exports are influenced by exports of other countries as well as by incomes in importing countries. But U.S. exports are distributed between developed and less-developed countries (excluding countries in the Eastern Trade Area and the United States) approximately the same way as income. This is evident from the following 1959-60 percentage distribution data:

	Developed countries (Percent)	Less-developed countries (Percent)
Population	27	73
Income	69	31
U.S. exports		
Total	61	39
Agricultural	65	35

Table 4.--Estimates of total and per capita incomes and imports from the United States and other countries, by major regions, 1959-60 averages 1/

Income and imports	Developed countries 2/	Less-developed countries	Eastern Trade Area
	-- Billion dollars --		
Total estimates			
Income	321.0	142.0	214.0
Total imports	62.1	27.5	14.7
From United States 3/	10.8	6.2	.2
From other countries	51.3	21.3	14.5
Agricultural imports	23.5	6.5	4.3
From United States 3/	2.8	1.5	.1
From other countries	20.7	5.0	4.2
	-- Dollars --		
Per capita estimates			
Income	655.00	110.00	218.00
Total imports	126.73	21.25	14.98
From United States	22.04	4.73	.20
From other countries	104.69	16.46	14.78
Agricultural imports	47.96	5.02	4.38
From United States	5.71	1.16	.10
From other countries	42.24	3.86	4.28

1/ Preliminary estimates in U.S. dollars. See tables 1 and 2 for source of data.
2/ Excludes the United States.
3/ Excludes $1.7 billion of special category of U.S. exports which are not distributed among regions.

The developed countries accounted for nearly two-thirds of U.S. exports and the less-developed for a little over one-third. Income was distributed about the same. The number of people apparently has little influence on how exports are distributed. It is purchasing power that counts.

Total imports of foreign countries from the United States and other countries are closely related to income. Agricultural imports, however, are relatively greater in the developed countries. Imports of all goods and services and of agricultural products per $100 of income in 1959-60 were as follows:

	Developed countries (Dollars)	Less-developed countries (Dollars)
All goods and services	19.34	19.37
From United States	3.36	4.37
From other countries	15.98	15.00
Agricultural products	7.32	4.58
From United States	.87	1.05
From other countries	6.45	3.53

The value of goods and services imported per $100 of income is about the same for the less-developed countries as for the developed. As might be expected, the developed countries import much more agricultural products per $100 of income than do the less-developed.

U.S. exports of agricultural products averaged a little over $1 for each $100 of income in the less-developed countries and a little less than $1 for each $100 of income in the developed countries. However, a substantial part of U.S. agricultural exports to the less-developed countries were concessional sales in 1959-60. In 1960, for example, 60 percent of these agricultural exports to the less-developed countries were under the P.L. 480 program compared with 11 percent to the developed countries.

Changes in Income and Trade

Total income and total trade have moved upward together during the last decade.

Considered here are how changes in imports of all products and agricultural products by developed countries (excluding the United States) and by less-developed countries have been associated with changes in income during the 1950-61 period. Also considered are how changes in imports from the United States compare with changes in imports from other countries, and how growth rates for income and imports compare. The growth rates referred to are compound annual rates.

For developed countries, total income and imports increased at the same rate, 6.8 percent a year, during 1950-61 (figure 1). Imports from the United States increased 6.5 percent annually, not quite as much as the rate for all imports. Imports of agricultural products from all countries increased at a rate of 4.7 percent a year while those from the United States increased at a somewhat lower rate, 3.3 percent a year.

For the less-developed countries, total imports from all countries increased 5.1 percent and those from the United States at 3.8 percent. The growth rate of income was 5.2 percent (figure 2). Imports of agricultural products from all countries went up 1.9 percent a year, but those from the United States

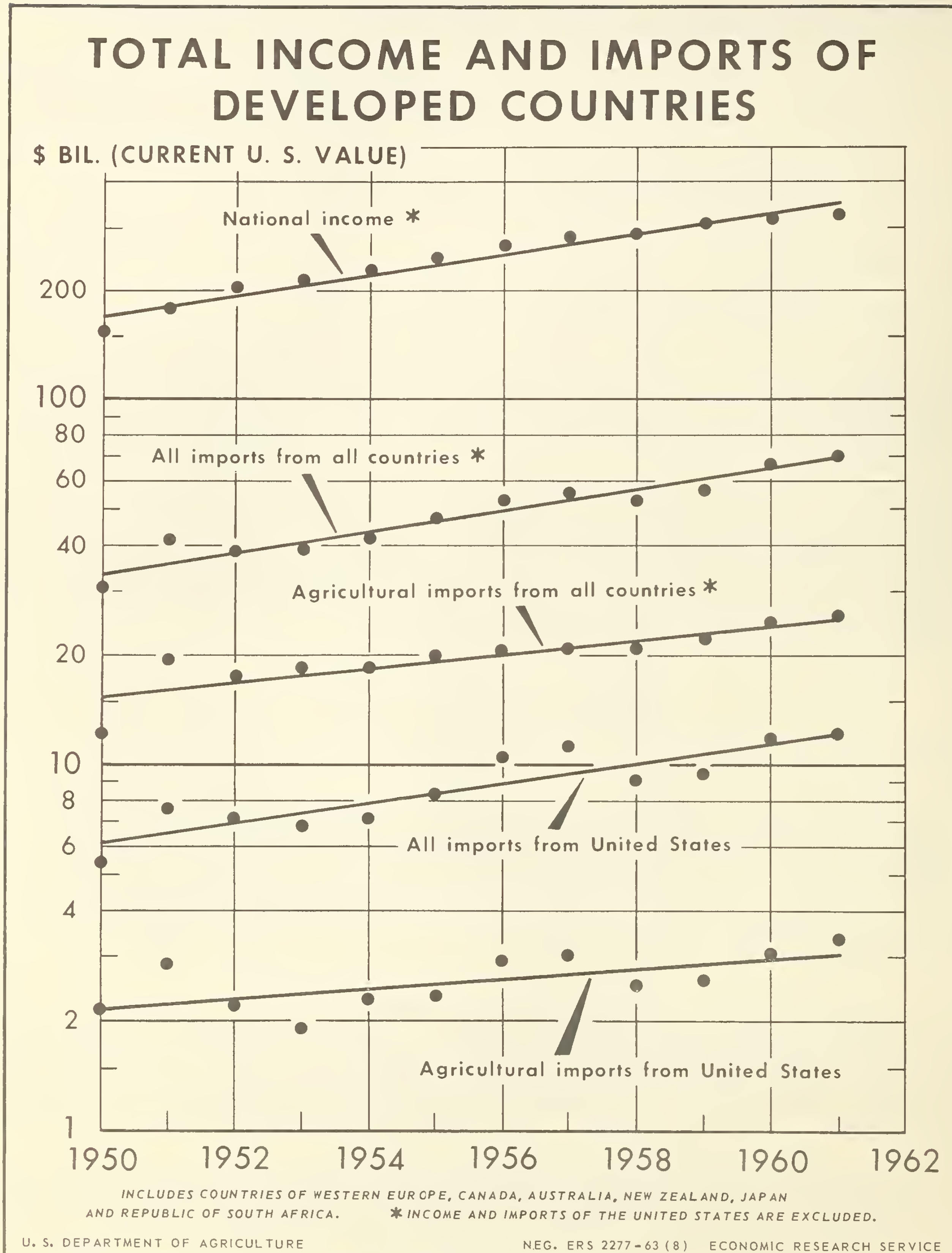
TOTAL INCOME AND IMPORTS OF DEVELOPED COUNTRIES
$ BIL. (CURRENT U. S. VALUE)
National income *
All imports from all countries *
Agricultural imports from all countries *
All imports from United States
Agricultural imports from United States
200
100
80
60
40
20
10
8
6
4
2
1
1950
1952
1954
1956
1958
1960
1962
INCLUDES COUNTRIES OF WESTERN EUROPE, CANADA, AUSTRALIA, NEW ZEALAND, JAPAN AND REPUBLIC OF SOUTH AFRICA.
* INCOME AND IMPORTS OF THE UNITED STATES ARE EXCLUDED.
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FIG. 1

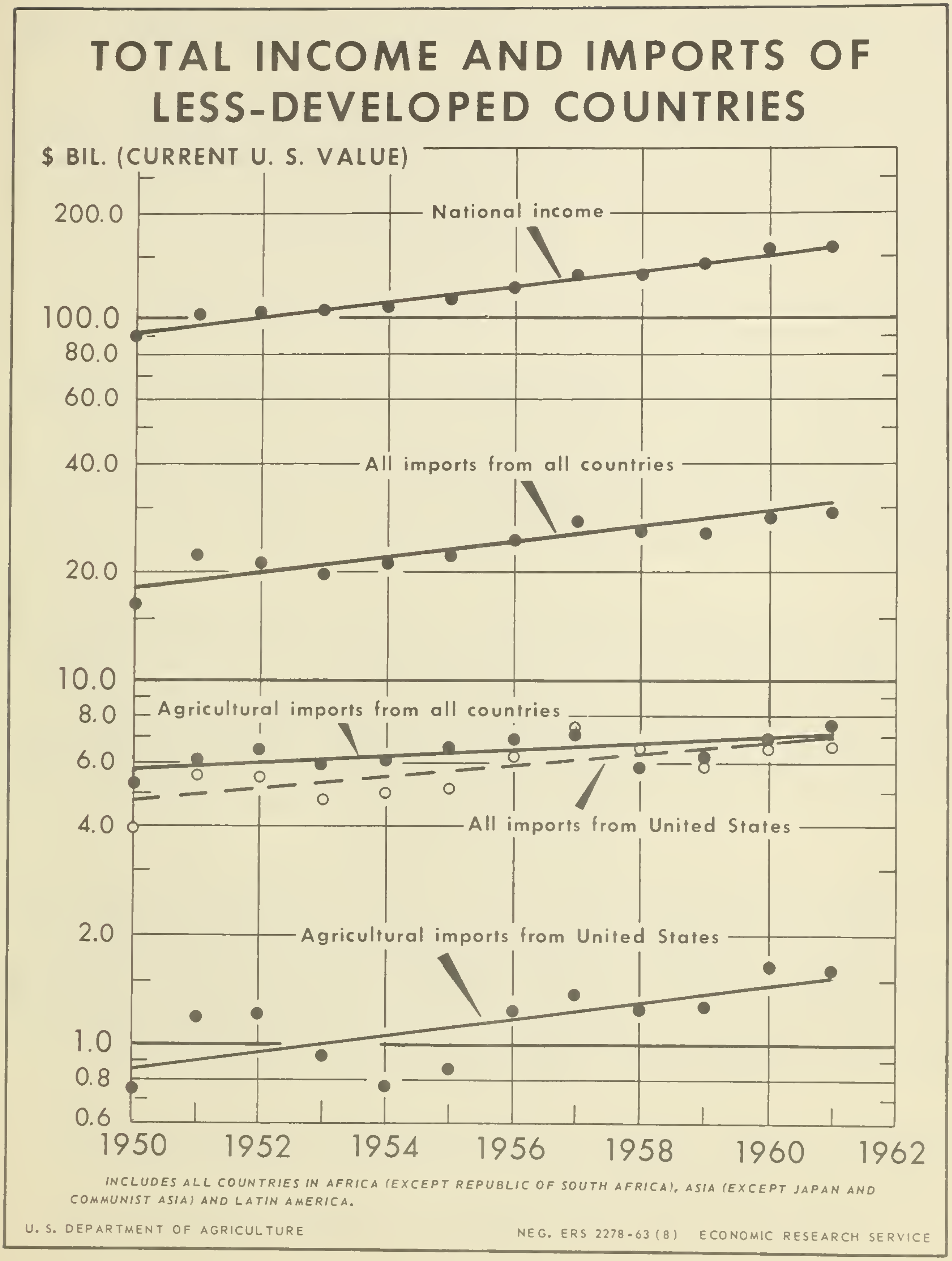
TOTAL INCOME AND IMPORTS OF LESS-DEVELOPED COUNTRIES
$ BIL. (CURRENT U. S. VALUE)
200.0
100.0
80.0
60.0
40.0
20.0
10.0
8.0
6.0
4.0
2.0
1.0
0.8
0.6
National income
All imports from all countries
Agricultural imports from all countries
All imports from United States
Agricultural imports from United States
1950
1952
1954
1956
1958
1960
1962
INCLUDES ALL COUNTRIES IN AFRICA (EXCEPT REPUBLIC OF SOUTH AFRICA), ASIA (EXCEPT JAPAN AND COMMUNIST ASIA) AND LATIN AMERICA.
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FIG. 2

increased at 5.5 percent. Rapid expansion in imports of agricultural products from the United States, of course, was influenced by shipments under P.L. 480 programs.

All data are expressed in values of current U.S. dollars. Purchasing power of the U.S. dollar declined in value by about 26 percent or 2.3 percent a year during the 1950-61 period. On the other hand, the value of imports, measured in constant dollars, declined about 11 percent or 1 percent a year during this time. Therefore, the upward trends shown for income and imports generally reflect real changes in income and physical volume changes in imports. A comparison of growth rates for the developed countries shows that the physical volume of trade grew about as rapidly as income in current dollars but about $1\frac{1}{2}$ times faster in constant dollars. In the less-developed countries, the growth rates of income and all imports were more nearly the same.

The share of U.S. products imported by the developed countries has remained nearly constant since 1950. The proportion was 18 percent in 1950 and 17 percent in 1960. However, the U.S. share of agricultural products imported by the developed countries declined from 17 percent in 1950 to 12 percent in 1960. Of course, U.S. exports to West European countries were relatively large during the early 1950's, when agricultural production had not fully recovered from wartime damages. These conditions probably account for most of the percentage decline of the U.S. share of agricultural imports by the developed countries.

The share of U.S. products imported by the less-developed countries declined slightly during the past decade. It was 25 percent in 1950 compared with 22 percent in 1960. But the U.S. share of the agricultural imports of these countries increased from 14 percent in 1950 to 23 percent in 1960. Large shipments of agricultural products under the P.L. 480 program, beginning in the late 1950's, probably accounts for this change. It also is associated with rapid population growth, expanding demand for food, and inability of the less-developed countries to expand food production quickly.

Future Trade Potential

Judging from experience during the 1950's, foreign economic growth will have a major influence on foreign markets for agricultural products in the years ahead. Of course, U.S. exports also will be influenced by changes in (1) demand for and production of agricultural products in importing countries, (2) supplies made available for export by competing foreign countries, and (3) U.S. capacity for supplying agricultural products for export. Since the United States accounts for about 15 percent of all the agricultural products imported by foreign countries, developments affecting foreign production, consumption, and trade can have large impacts on U.S. agricultural exports.

To provide general indications of how foreign markets for U.S. exports may change in the future, two sets of extrapolations for 1980 have been made, based on the following assumptions:

1. Continuation of 1950-61 growth rates for income and trade measured in current dollars.

2. Continuation of 1950-61 growth rates for income and trade measured in constant dollars.

If the growth rates for income and trade during 1950-61 continue, total value of exports of agricultural products from the United States in current dollars would be 2.3 times larger in 1980 than in 1959-60 (table 5). They would increase from $4.3 billion in 1960 to $9.8 billion in 1980. Exports to the Eastern Trade Area would be additional, but they have been relatively small. Our agricultural exports to developed countries would increase from $2.8 billion in 1960 to $5.4 billion in 1980 while those to the less-developed countries would increase from $1.5 billion to $4.4 billion.

If real growth rates for income and imports during 1950-61 continue, total value of agricultural exports measured in 1959-60 dollars would be about twice as large in 1980 as they were in 1959-60. Removal of the effects of inflation causes growth rates for income to decrease relative to those for imports. The deflated results appear more realistic, however, than those expressed in current dollars.

These estimates suggest that total value of U.S. exports to the developed countries would more than double by 1980; U.S. exports to the less-developed countries would also double, but agricultural exports to these countries would nearly triple.

Agricultural imports for the developed countries likely will account for a declining proportion of total imports. Most developed countries are rapidly improving agricultural technology and production. Moreover, the proportion of income spent for food likely will decrease as per capita incomes increase.

But for the less-developed countries, imports of agricultural products quite likely will increase as rapidly as income. These countries are experiencing rapid population growth and find it difficult to expand their agricultural production quickly. Many densely-populated countries are likely to become large net-importers of agricultural products as they progress economically.

Finally, it is important to note that a large proportion of U.S. agricultural exports to the less-developed countries are financed under P.L. 480 programs. If these countries achieve income growth, an increasing proportion of U.S. sales can be commercial. It is well known that American agriculture has surplus agricultural production capacity. Use of this capacity through food aid programs to help the less-developed countries develop and achieve higher incomes can lead to larger commercial sales of farm products in the future than it is possible to predict with past trends.

Table 5.--Estimates of annual growth rates for income and imports, developed and less-developed countries, 1959-60 average values, and 1980 extrapolated values

Item	1950-61 growth rates measured in 1/		1959-60 average values	1980 values assuming 1950-61 growth rates for income and imports	
	Current dollars	Constant dollars		Current dollars	1959-60 dollars
	-- Percent --		-- Billion dollars --		
Developed countries 2/					
Total income........	6.8	4.5	321.0	1,196.5	774.1
Total imports					
From all countries	6.8	6.4	62.1	231.5	214.7
From United States	6.5	6.2	10.8	38.1	36.0
Agricultural imports					
From all countries	4.7	4.2	23.5	58.9	53.5
From United States	3.3	2.9	2.8	5.4	5.0
Less-developed countries					
Total income........	5.2	2.9	142.0	391.4	251.5
Total imports					
From all countries	5.1	4.2	27.5	74.4	62.6
From United States	3.8	3.4	6.2	13.1	12.1
Agricultural imports					
From all countries	1.9	1.6	6.5	9.5	8.9
From United States	5.5	5.2	1.5	4.4	4.1
Imports from U.S. 3/					
Total..............	---	---	17.0	51.2	48.1
Agricultural........	---	---	4.3	9.8	9.1

1/ Compound annual growth rates. Current values were converted to 1954 dollars to obtain growth rates in constant dollars.
2/ Excludes United States.
3/ Excludes imports by Eastern Trade Area.