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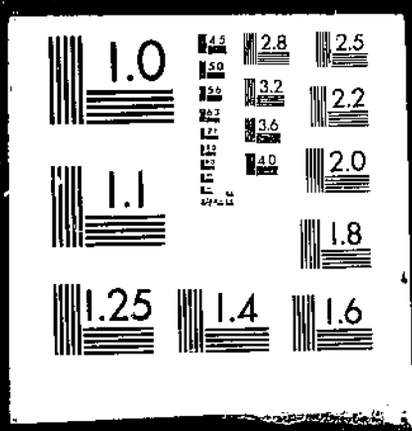

FOREIGN AGRICULTURAL ECONOMIC REPORT NO. 64

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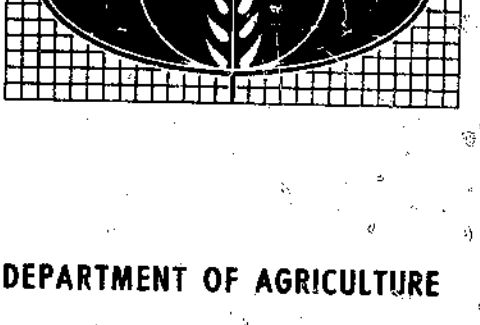
# EASTERN EUROPE'S AGRICULTURAL DEVELOPMENT AND TRADE

## PATTERNS AND PERSPECTIVES



ECONOMIC RESEARCH SERVICE • U.S. DEPARTMENT OF AGRICULTURE

# ABSTRACT

Long-term output trends show substantial growth in agricultural output for Eastern Europe. Wheat has made the strongest gains among the field crops. Gains in livestock output are related to the increased use of wheat for feed. Higher incomes and shifts in consumer demands have led to increased imports of vegetable oils, cotton, fruits, and tobacco. Trade for the area also shows that agricultural exports have increased faster than imports, but the import demand for Czechoslovakia and East Germany is still high. U.S. agricultural exports to the area have moved downward since 1964.

Key Words: Eastern Europe, Agricultural production, Consumption, and Trade

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# FOREWORD

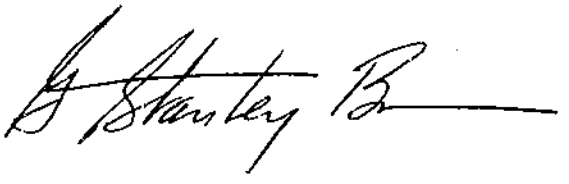
Interest in East-West trade heightens the need for a review of the resource potential and agricultural development of Eastern Europe. Although many individual country studies have been written, there is no composite survey that would allow policymakers to review critically the economic factors affecting the trade of agricultural products in this area of the world.

This report analyzes the agricultural production, consumption, and trade of Eastern Europe, and uses the results of this research to evaluate the agricultural growth, self-sufficiency, and commodity composition of trade for the area. It attempts to review the past in light of recent data and to identify problems and the direction of future growth and trade in the agricultural and consumer sectors.

Considerable attention is given to developing estimates of feed requirements for each country to explain the upward shift of wheat utilization for feed. No attempt is made to calculate income elasticity coefficients for major major food products, since price regulation is still in effect in most countries.

Trade data are analyzed for trends and shifts in the total value and quantity of agricultural purchases. A brief analysis of U.S. agricultural sales focuses on expanding trade with the area rather than on the commodity trade of individual countries. The latter would be a study in itself and adequate data are not available for all countries. Policy decisions affecting U.S. trade are also introduced.

Persons assisting in the preparation of this study include Razvigor Bazala, Carolyn Miller, and Paul Danyluk.



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Division

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In this report, Eastern Europe includes Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Romania, and Yugoslavia. Important political differences exist between Yugoslavia and the other countries of the region, and the United States does not recognize East Germany as a separate country; however, these countries can be usefully studied as a group.

The year 1955 is used as the base year for annual comparisons. Data since 1955 are more representative of economic change and less subject to political bias than those of earlier years. Cutoff date for statistical data was June 1969.

Metric tons and U. S. dollars are used throughout this report.


Washington, D.C. 20250 July 1970

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# HIGHLIGHTS

Agriculture in Eastern Europe has undergone the full transition from a privately operated farm sector to a socialized one. Only Poland and Yugoslavia maintain sizable areas of private farms. The development of a socialized agriculture has not been smooth. Erratic supplies, low productivity, and a weak infrastructure still exist. Between 1963 and 1968, the countries of Eastern Europe made the greatest strides in agricultural development. The results are reflected in this study's analysis of long-term growth, increased consumption, and shifts in trade patterns.

Eastern Europe's agricultural production in 1968 increased 30 percent from the 1957-59 base. Preliminary forecasts for 1970 indicate that new peaks will be reached for all countries except Czechoslovakia and East Germany. Technological improvements since 1960 have been important in this upswing. Fertilizer use in the area has increased at an annual rate of 10 percent and tractor numbers, 12 percent.

Wheat and sugarbeets have made the strongest gains among the field crops. Livestock products have also improved, but at a somewhat slower rate. Achieving a more rapid rate of growth for livestock products will require a more intensive use of protein feed supplements.

Along with the growth of agricultural production there has been a corresponding rise in consumer demand for livestock products, particularly meat. High-income-producing countries—Czechoslovakia and East Germany—are already identified as the highest consumers of these products. Low-income-producing countries—Bulgaria, Romania, and Yugoslavia—are still major consumers of staples.

To meet the growing demand for livestock products, a substantial share of the higher wheat output has been used for feed. Where wheat output has lagged, imports under favorable concessional sales have been used to supplement food shortages.

Higher incomes have also effected increases in the consumption of nongrain commodities—vegetable oils, cotton, fruits, and tobacco. The higher import of these commodities is reflected in the total trade of East European agricultural products. Of the $3.5 billion in total agricultural imports in 1967, three-quarters were nongrain products.

Surprisingly, exports have been increasing faster than imports—10.4 percent a year as against 6.4 percent for imports. East Germany and Czechoslovakia are the chief importers; Romania, Poland, and Hungary lead in exports. The U.S. share of East European agricultural

trade is still small, averaging less than 8 percent of the total during 1960-67. Although Poland and Yugoslavia are the major markets for U.S. exports, the share of other countries has increased.

Food and raw materials complementing domestic production will probably increase faster than primary products in Eastern Europe's future agricultural imports. Competition for this market will intensify as economic and political impediments to trade are lifted.

# Eastern Europe's Agricultural Development and Trade: Patterns and Perspectives

by

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## INTRODUCTION

Eastern Europe, while still a major agricultural area in the world, is rapidly moving away from its primary economic dependence on agriculture to a higher stage of economic development. What was called the breadbasket of Europe in the pre-World War II period is now a growing industrial area. This economic transition is not only affecting the use of each country's agricultural resource base, but it is causing incomes and consumption levels to rise also.

The postwar economic growth of Eastern Europe has been accompanied by a marked change in the trade pattern of agricultural products. Through the early sixties, Eastern Europe showed evidence of becoming a strong importer of grains from the West. But since 1965, an upward shift in grain exports has occurred. Accompanying this reverse in grain trade has been a growing import demand for feed supplements, tropical fruits, hides and skins, cotton, tobacco, meat and meat products, and processed agricultural products.

## AGRICULTURAL GROWTH IN EASTERN EUROPE DURING 1955-68

During most of the 1950's, the political decision to collectivize the resources of agriculture and to advance industry at the expense of agriculture transcended the economic decisions needed to achieve maximum agricultural growth in Eastern Europe. Apparently satisfied that no serious shortages or continued downward trends in production developed, area governments gave modest support to agriculture only when political pressures demanded such attention, as in 1953 and 1956. But significant and more consistent Party interest appeared in the sixties,

and has been especially pronounced since the mid-sixties. This increased economic support of agriculture is associated with completion of collectivization programs in Bulgaria, Czechoslovakia, East Germany, Hungary, and Romania, satisfaction with the stage of collectivization in Poland and Yugoslavia, and the subsequent shift from organizational objectives to the economic priorities needed to increase output.

While the sharpest annual fluctuations in production can be attributed to weather, technological changes in the area appear to have diminished the adverse effects of the elements on year-to-year production changes. This breakthrough is more noticeable in the southern countries of the area—Bulgaria, Hungary, Romania, and Yugoslavia—where droughts are more frequent than in the northern countries of Czechoslovakia, East Germany, and Poland.

Measuring the influence of the variables—weather, technology, management, and investments—on output is difficult and imprecise, but by aggregating production data in value terms and presenting the data in index form, some judgment of agricultural stability, growth rates, and direction of change can be made for individual countries and for the area. Each nation in Eastern Europe publishes an index of gross agricultural output that is calculated either in fixed or current prices and includes the value of total output of all crops and livestock products. Some countries also publish a net agricultural index that adjusts for double counting of feed for livestock and for purchases from the nonfarm sector. But there is no uniformity in the price weights used in the calculation of any of the indexes. To allow for inter- and intra-area comparisons, the U.S. Department of Agriculture has constructed a net agricultural output index that is calculated in fixed prices and adjusts for double counting of feed, but does not deduct purchases from the nonfarm sector (6).[1]

On the basis of this index, net agricultural output in Eastern Europe in 1968 increased 30 percent over the 1957-59 base, or at an annual rate of 2.7 percent, and appears to reflect a favorably balanced performance over a long period of time. Conversely, less stability in output is suggested by the erratic year-to-year changes noted for individual countries. Such fluctuations can be partially explained by the adversities of weather, but in some years they are more closely identified with policy measures.

The sharp decline in output in 1961 for East Germany followed the mass collectivization drive carried out in that country the previous year and was compounded by an unusually dry spring. Collectivization drives and the delayed impact of new policy decisions were also primary factors causing the downturn of production in Hungary in 1961 and in Romania during 1962. The significant upturn in production for all countries

[1] Underscored numbers in parentheses refer to items in the literature cited, p. 60.

in 1966 can be attributed to optimum weather conditions, but the surprising stability of output maintained in 1967 and 1968 under less than optimal weather conditions can be explained only by the continued efforts to raise material inputs, farm investment, and the level of farm management.

Along with this emphasis on technology, all countries showed shifts to high-value commodities—livestock products, oilseeds, and fruit. The growing importance of these commodities in the total output not only introduced a more balanced growth, but also explains the shifts in agricultural trading patterns that have developed since 1955. For example, East Germany and Czechoslovakia—the two countries of Eastern Europe with the largest percentage share of high-value livestock products in total agricultural output—are heavy importers of grain. This reflects to a degree a longstanding decision to import low-value grain products for conversion into meat and other livestock products. How both of these countries and others in the area have shaped their agricultural production during 1955-68 can be judged from the direction of the agricultural index (table 1).[2]

Strong rates of growth varying from 3.1 percent to 4.4 percent a year during 1955-68 were achieved by Bulgaria, Romania, Poland, and Yugoslavia; rates of growth of 2.0 percent or less were attained by Czechoslovakia, East Germany, and Hungary. The higher rates of growth for Bulgaria, Poland, Romania, and Yugoslavia can be attributed to the low level of factor inputs through 1965. The simultaneous rise in output and inputs in subsequent years lends strong support for predicting continued growth (at least through the first half of the 1970's). The Czechoslovak and East German growth rates of 0.9 and 1.6 percent a year, however, reflect near maximum growth rates. Both countries showed a relatively high level of factor inputs during this time, suggesting that future growth may be difficult to achieve. Hungary's position is not clearly defined, but evidence on the availability and use of factor inputs suggests that future growth may also be slow.

If aggregated data are used to measure actual per capita food production in each country, as shown in table 2, similar general conclusions about potential growth emerge. Czechoslovak data again show the greatest weakness in growth prospects. While there is some improvement noted for East Germany, the higher annual rate of change in per capita food index, compared with the production index, reflects the decline in population through 1964. However, the reversal of this trend after 1964 may make East Germany's long-term position less favorable than the current data show.

Preliminary U.S. Department of Agriculture forecasts of agricultural output for 1970 follow the patterns molded by long-term trends. New peaks in production are expected for all countries except Czechoslovakia and East Germany. On a per capita food basis, the forecast shows a decline for Czechoslovakia, East Germany, and Poland. While

Table 1.--Eastern Europe: Index of total agricultural production, 1955-68
(1957-59=100)

| Item | Bulgaria | Czecho-slovakia | East Germany | Hungary | Poland | Romania | Yugo-slavia | Total, Eastern Europe |
|---|---|---|---|---|---|---|---|---|
| 1955 | 86 | 100 | 94 | 93 | 86 | 103 | 86 | 92 |
| 1956 | 79 | 107 | 96 | 84 | 98 | 80 | 68 | 89 |
| 1957 | 95 | 102 | 100 | 99 | 99 | 103 | 102 | 100 |
| 1958 | 93 | 99 | 103 | 92 | 101 | 86 | 84 | 95 |
| 1959 | 112 | 98 | 97 | 109 | 100 | 111 | 114 | 105 |
| 1960 | 110 | 104 | 113 | 101 | 109 | 107 | 102 | 107 |
| 1961 | 106 | 101 | 86 | 96 | 121 | 111 | 98 | 106 |
| 1962 | 110 | 98 | 99 | 101 | 109 | 103 | 102 | 104 |
| 1963 | 111 | 108 | 100 | 104 | 118 | 107 | 109 | 110 |
| 1964 | 127 | 110 | 105 | 107 | 121 | 112 | 117 | 115 |
| 1965 | 132 | 95 | 111 | 110 | 123 | 123 | 108 | 116 |
| 1966 | 155 | 111 | 111 | 117 | 129 | 141 | 131 | 127 |
| 1967 | 152 | 113 | 122 | 119 | 135 | 139 | 126 | 130 |
| 1968 | 134 | 120 | 121 | 119 | 142 | 134 | 119 | 130 |
| Projected 1970 1/ | 158 | 113 | 119 | 123 | 145 | 142 | 133 | 135 |
| | | | | Percent | | | | |
| Annual rate of change, 1955-68 2/ | 4.4 | 0.9 | 1.6 | 2.0 | 3.1 | 3.1 | 3.1 | 2.7 |
| Planned rate of growth, 1965-70 3/ | 5.4 | 2.8 | 2.6 | 2.9 | 2.4 | 5.1 | 4.6 | n.a. |

n.a. = not available.

1/ Projected increase computed by least squares according to a linear formula.
2/ Compound rate of increase computed from linear trend.
3/ Calculated from planned percentage increases of gross agricultural production.

Table 2.--Eastern Europe: Index of per capita food production 1955-68 (1957-59=100)

| Item | Bulgaria | Czecho-slovakia | East Germany | Hungary | Poland | Romania | Yugo-Slavia | Total, Eastern Europe |
|---|---|---|---|---|---|---|---|---|
| 1955 | 89 | 101 | 91 | 93 | 90 | 105 | 84 | 92 |
| 1956 | 82 | 108 | 94 | 83 | 99 | 79 | 67 | 89 |
| 1957 | 97 | 104 | 99 | 100 | 100 | 103 | 101 | 101 |
| 1958 | 94 | 99 | 103 | 92 | 101 | 86 | 83 | 95 |
| 1959 | 110 | 97 | 97 | 107 | 99 | 111 | 117 | 104 |
| 1960 | 109 | 103 | 115 | 102 | 106 | 106 | 104 | 106 |
| 1961 | 106 | 99 | 87 | 96 | 115 | 110 | 97 | 104 |
| 1962 | 108 | 94 | 100 | 101 | 101 | 100 | 98 | 101 |
| 1963 | 107 | 102 | 101 | 102 | 110 | 104 | 106 | 106 |
| 1964 | 119 | 103 | 107 | 103 | 111 | 108 | 110 | 110 |
| 1965 | 127 | 90 | 113 | 106 | 111 | 119 | 100 | 110 |
| 1966 | 147 | 106 | 113 | 113 | 117 | 135 | 122 | 120 |
| 1967 | 146 | 107 | 124 | 115 | 119 | 132 | 118 | 122 |
| 1968 | 128 | 114 | 123 | 115 | 124 | 128 | 113 | 122 |
| Projected 1970 1/ | 148 | 104 | 123 | 118 | 125 | 135 | 124 | 130 |
| | | | | Percent | | | | |
| Annual rate of change, 1955-68 2/ | 3.6 | 0.2 | 1.9 | 1.7 | 1.8 | 2.6 | 2.5 | 2.0 |
| Annual population rate of increase 1955-67 3/ | .8 | .7 | -.4 | .3 | 1.2 | .8 | 1.0 | .7 |

1/ Projected increase computed by least squares according to a linear formula.
2/ Compound rate of increase computed from linear trend.
3/ Compound rate of increase computed from midyear data.

these forecasts are only for a short duration, long-term projections through 1980 would probably show the same trend.

Official plans for agricultural production through 1970 reflect the same trend as the USDA index of net agricultural output. Strong rates of growth varying from 4.6 percent to 5.4 percent were planned for Romania, Bulgaria, and Yugoslavia, while lower rates of 2.5 to 2.9 percent were called for by Czechoslovakia, East Germany, Hungary, and Poland. The plans, although on a gross output basis, appear to take into consideration the economic capabilities of each country and suggest continued optimism in the former group and some limitation and restraint in the latter. The lower official planned growth rates of East Germany and Czechoslovakia support the previous observation that imports of supplementary agricultural commodities may be increased or at least maintained in these countries if a rise in the standard of living is to be achieved. This might also be true for Poland and Yugoslavia if population gains continue at prevailing rates (table 2).

## FACTORS AFFECTING THE PRODUCTION OF AGRICULTURAL PRODUCTS

Collectivization is now firmly rooted in all countries of Eastern Europe except Yugoslavia and Poland. Yugoslavia is currently experiencing its most liberal economic period under communism, but the Yugoslav League of Communists is still trying to win over the peasant and actively endorses a long-term program to socialize all agricultural resources. Poland, after making a bold decision to decollectivize in 1956, has again regressed to a more rigid policy position toward inefficient peasant farming. Early in 1968, the Government enacted legislation permitting state takeover of land that it considered underutilized, or land that when planted to crops did not achieve the minimum norms of output per hectare. These programs give the Government first option to purchase such land or distribute it to more efficient producers. More specifically, they are intended to prohibit the further fragmentation of private farms and to encourage farmers to use cooperatively held machinery. The long-term objective of this policy is to eliminate inefficient small farms, but the emphasis on use of state-owned machinery does not preclude full socialization of agricultural resources at a later date.

Hard-line communism asserts that in the long run collectivization will improve agricultural production through the consolidation of small farms, the mass introduction of material inputs, and the universal application of modern farm technology. That it has been slow to achieve these objectives can be attributed to political dogmatism, military and economic priorities, and the lack of nonfarm inputs. As an economic program, collectivization can also be criticized for its failure to

motivate farmers, its uneconomic use of basic resources, and its deliberate low returns to labor.

But even under the economic stress of low production, full socialization continues to be a paramount political goal in most countries. Differing views as to the means of achieving this goal are reflected in the wide variations in the production changes, consumption patterns, and trade developments of each country.

## Changes in Land Use and Population

During 1955-67, agricultural land declined in Czechoslovakia, East Germany, Hungary, Poland, and Yugoslavia, but increased in Bulgaria and Romania.[2] Upward and downward shifts also occurred in arable land throughout the area.[3] The net result was a 724,000-hectare decrease in arable land, compared with a 398,000-hectare decrease in agricultural land (table 3) (5). This greater decline in arable land affected the shortrun potential for growing crops more than the potential for raising livestock, since the inputs necessary for raising yields were not immediately available. The primary factors causing this shift in land use were the movement of people from confiscated and marginal farmland in some cases, the conversion of large estates to pastureland in others, and the increased use of land for nonagricultural purposes in all countries.

It is more than coincidental that the largest decreases in arable land occurred in Czechoslovakia, East Germany, Hungary, and Poland. All of these countries experienced a mass out-migration of German settlers, derive less than 25 percent of total national income from agriculture, and are the largest importers of agricultural products. Conversely, Romania and Yugoslavia increased the amount of arable land relative to total land resources. In both countries, however, the rate of increase was less than the rate of increase of population for the same time period. Bulgaria's ratio of arable to total land remained virtually constant.

Because of the upward shift in population in all countries of Eastern Europe except East Germany during 1955-67, the pressure on land reduced the land/man ratio for the area from 0.50 hectares of arable land per capita in 1955 to 0.45 in 1967. East Germany's population decline produced a more favorable land/man ratio through 1964, but in subsequent years the ratio reverted to the 1955 relationship, as shown in table 4. Data in the same table show that East Germany, Czechoslovakia, and Yugoslavia were also below the area average of 0.45 hectare per capita,

[2] Agricultural land includes arable land, permanent meadows, and pastures.
[3] Arable land includes cultivated land, gardens, orchards, and vineyards.

Table 3.--Eastern Europe: Distribution of land resources, 1955 and 1967

| Country | 1955 | | | 1967 | | | Net change | | |
|---|---|---|---|---|---|---|---|---|---|
| | Agricultural land 1/ | Arable land 2/ | Pastures | Agricultural land 1/ | Arable land 2/ | Pastures | Agricultural land 1/ | Arable land 2/ | Pastures |
| | 1,000 hectares | | | | | | | | |
| Bulgaria | 5,592 | 4,545 | 804 | 5,863 | 4,534 | 1,052 | +271 | - 11 | +248 |
| Czechoslovakia | 7,414 | 5,458 | 856 | 7,132 | 5,362 | 790 | -282 | - 96 | - 66 |
| East Germany | 6,482 | 5,218 | 390 | 6,351 | 4,911 | 582 | -131 | -307 | +192 |
| Hungary | 7,246 | 5,775 | 912 | 6,913 | 5,626 | 874 | -333 | -149 | - 38 |
| Poland | 20,403 | 16,223 | 1,790 | 19,819 | 15,518 | 1,833 | -584 | -705 | + 43 |
| Romania | 14,112 | 10,058 | 2,693 | 14,839 | 10,527 | 2,949 | +727 | +469 | +256 |
| Yugoslavia | 14,753 | 8,192 | 4,651 | 14,687 | 8,267 | 4,490 | - 66 | + 75 | -161 |
| Total, Eastern Europe | 76,002 | 55,469 | 12,096 | 75,604 | 54,745 | 12,570 | -398 | -724 | +474 |

1/ Agricultural land includes arable land, permanent meadows, and pastures.
2/ Arable land includes cultivated land, gardens, orchards, and vineyards.

Table 4.--Eastern Europe: Land resources and material inputs, averages 1955 and 1967 1/

| Country | 1955 | | | 1967 | | |
|---|---|---|---|---|---|---|
| | Arable land per capita | Arable land per tractor | Fertilizer per hectare of arable land | Arable land per capita | Arable land per tractor | Fertilizer per hectare of arable land |
| | Hectares | | Kilograms | Hectares | | Kilograms |
| Bulgaria..... | 0.61 | 234.1 | 7.8 | 0.55 | 60.0 | 133.9 |
| Czechoslovakia..... | .42 | 133.8 | 59.7 | .37 | 27.5 | 173.0 |
| East Germany..... | .29 | 122.9 | 147.2 | .29 | 28.2 | 275.7 |
| Hungary..... | .59 | 243.9 | 9.4 | .55 | 57.3 | 91.4 |
| Poland..... | .59 | 274.6 | 33.5 | .49 | 84.6 | 101.9 |
| Romania..... | .58 | 329.9 | 2.2 | .55 | 67.6 | 41.9 |
| Yugoslavia..... | .47 | 186.3 | 7.6 | .41 | 58.6 | 62.5 |
| All Eastern Europe.. | 0.50 | 213.4 | 32.6 | 0.45 | 53.5 | 108.5 |

1/ Computed data. Population data used for calculation are midyear estimates. Tractors in 15-hp. units; fertilizer in terms of active plant nutrients.

suggesting the existence of a relationship between population pressure and grain imports in these three countries after 1955 (table 5).

In addition to population pressure on available land resources, all countries in the area have experienced relatively rapid urban growth. While this growth was expected, and was in fact one of the policy objectives of collectivization, the excessive rate at which young people have been leaving farms has created an imbalance in the age structure of the remaining farmers and farmworkers. An increasingly large share of the total farm labor force is in the age group 45-65 and older (10, 19). This population shift has accelerated the need for more farm machinery and other capital equipment as a substitute for labor. In effect, the decline of young farmworkers has transferred the problem of underemployment from the countryside to urban areas.

## Capital Formation

The competing claims for available capital, and the deliberate policy of holding back agricultural investments as long as a strong private sector existed, slowed the development of capital formation in all the countries of Eastern Europe. This economic lapse has been partially corrected where full collectivization has been attained, but it has placed a heavy and continuing financial burden on the collective farms.

Before the introduction of major agricultural reforms, capital for agriculture was supplied principally from the state budget of each country. Allocation of funds was a function of state planning and was under rigid central control. Under economic reform programs as early as 1956, the respective governments began to reduce the direct state contribution of capital to agriculture and to transfer this obligation to the farm enterprises—a move toward decentralization.

The earliest example of this capital shift occurred in most countries by mid-1958 with the transfer of machinery from state-owned machine tractor stations to collective farms. To enable collective farms to accumulate capital for the purchase of old and new equipment, procurement prices of agricultural products were repeatedly adjusted upward after 1958. In addition, governments canceled the indebtedness on some farms entirely or extended long-term credits at low interest rates to others. These policy changes, coupled with the continued shifting of decisionmaking from the top command to collective and state farm managers, were important economic steps in the collectivization programs. In some instances, they provided the economic stimulus for raising output.

## Agricultural Inputs

It would be misleading to attribute all the upward changes of agricultural production in Eastern Europe to the addition of fixed capital

Table 5.--Eastern Europe: Total wheat and rye imports, 1955-67

| Year | Bulgaria | Czecho-slovakia | East Germany | Hungary | Poland | Romania | Yugo-slavia | Total, Eastern Europe |
|---|---|---|---|---|---|---|---|---|
| | 1,000 tons | | | | | | | |
| 1955 | 40 | 915 | 742 | 541 | 1,154 | 302 | 975 | 4,669 |
| 1956 | 9 | 742 | 1,088 | 348 | 973 | 44 | 1,322 | 4,526 |
| 1957 | 183 | 1,036 | 1,420 | 350 | 1,795 | 456 | 1,096 | 6,335 |
| 1958 | 23 | 1,025 | 1,499 | 101 | 876 | 193 | 739 | 4,456 |
| 1959 | 172 | 1,299 | 1,542 | 260 | 1,315 | 6 | 1,007 | 5,601 |
| 1960 | 139 | 1,205 | 1,754 | 316 | 1,808 | 101 | 67 | 5,390 |
| 1961 | 8 | 1,186 | 1,495 | 437 | 2,052 | --- | 745 | 5,923 |
| 1962 | 120 | 1,099 | 1,686 | 227 | 1,751 | 15 | 733 | 5,616 |
| 1963 | 193 | 1,427 | 1,305 | 400 | 2,082 | 401 | 1,438 | 6,860 |
| 1964 | 408 | 1,530 | 1,404 | 356 | 2,211 | --- | 602 | 6,912 |
| 1965 | 174 | 956 | 1,226 | 125 | 1,378 | --- | 1,193 | 5,052 |
| 1966 | 315 | 1,085 | 1,461 | 152 | 1,637 | --- | 1,357 | 5,986 |
| 1967 | 13 | 1,204 | 1,184 | 217 | 1,353 | --- | 409 | 4,421 |

investment, since a large share of capital used to increase production in agriculture is operating or working capital. Generally, working capital is used for the purchase of fertilizer, seeds, animal vaccines, herbicides, insecticides, and other inputs that are consumed in a single agricultural year. Except for the calculated rates of fertilizer application, as shown in table 4, none of the other inputs can be easily quantified. However, this does not preclude making judgments about the rate of transition from peasant operations to more advanced farm techniques or about the impact that continued application of fixed and working capital inputs may have on future farm output and farm efficiency.

During 1955-67, fertilizer use and tractor inventories in Eastern Europe increased at annual rates of 10 percent and 12 percent, respectively (table 6). This upward movement has not only been consistent over time, but it has been greatest in countries with good growth potential—Romania, Poland, and Yugoslavia. The 1967 application rates of 276 kilograms of plant nutrients per hectare of arable land in East Germany and 173 kilograms in Czechoslovakia, compared with 42 kilograms in Romania, 63 in Yugoslavia, and 91 in Hungary, also indicate the wide variation of inputs among countries and account in part for the significant difference in yields in the area (tables 4 and 10).

This comparative data can be used to make some preliminary judgments about potential self-sufficiency in grains. East Germany and Czechoslovakia, for example, are already heavy users of fertilizer and have a high population density per unit of arable land. The high probability of diminishing returns from additional inputs suggests that a program to attain self-sufficiency of grains in these countries would be highly questionable. Conversely, the low fertilizer inputs in Poland and Yugoslavia, also importers of grain, suggest a greater probability for attaining self-sufficiency. For Romania, currently an exporter of grains and other agricultural products, the low use of fertilizer and the potential for increasing output from larger inputs raise important questions about the future direction of agricultural production. A shift to high-value livestock products and industrial and specialty crops could change the current export pattern in that country from grains to these types of commodities. A somewhat similar commodity shift could develop in Bulgaria and Hungary, neither of which has reached the high level of input use of East Germany and Czechoslovakia.

Although increased availability of selected inputs and investments and higher procurement prices (government-determined) reflect positive measures for improving agricultural output, it cannot be presumed that all measures have been applied efficiently and that optimum conditions for their continued use will prevail. Improved technology cannot resolve the variable factor of weather, and there are many unresolved labor problems that have emerged from the introduction of a more capital intensive agriculture. Management, a weak link between the planning stage and the market, is also an indeterminate factor in evaluating the agricultural potention of each country.

Table 6.--Eastern Europe: Fertilizer consumption and tractor numbers, 1955 and 1967

| Country | Fertilizer 1/ | | | Tractors 2/ | | |
|---|---|---|---|---|---|---|
| | 1955 | 1967 | 1967 as a percentage of 1955 | 1955 | 1967 | 1967 as a percentage of 1955 |
| | Tons | | Percent | Number | | Percent |
| Bulgaria ..... | 35,427 | 607,100 | 1,714 | 19,411 | 75,600 | 389 |
| Czechoslovakia ..... | 3/325,734 | 3/927,800 | 285 | 40,804 | 195,200 | 478 |
| East Germany ..... | 767,900 | 1,354,100 | 176 | 4/42,449 | 5/174,000 | 410 |
| Hungary ..... | 54,340 | 514,000 | 945 | 23,675 | 98,200 | 415 |
| Poland ..... | 3/543,900 | 3/1,581,700 | 291 | 59,075 | 183,400 | 310 |
| Romania..... | 21,900 | 440,700 | 2,012 | 30,488 | 155,700 | 511 |
| Yugoslavia ..... | 62,600 | 516,400 | 825 | 5/6/43,947 | 141,000 | 321 |
| Total, East Europe | 1,811,801 | 5,941,800 | 326 | 259,876 | 1,023,100 | 393 |

1/ Plant nutrients.
2/ 15-horsepower units.
3/ Reported on a split-year basis.
4/ Inventory of machine tractor stations only.
5/ Converted to 15-horsepower units from reported physical units.
6/ 1956 data.

From a review of past policy decisions, it is clear that the agricultural sector has changed under collectivization. Programs have been implemented faster in some countries than in others, but in all countries production has increased, consumption has improved, and the trade of agricultural products has become more diversified, compared with the early fifties. Although the momentum generated in the late sixties probably will be carried into the seventies, the evidence at this time suggests that a renewed emphasis will be placed on examining the costs of production and evaluating more critically the domestic and foreign demand for agricultural products. Specialization of production may accelerate, and the trend to increase livestock products, already in evidence, should move ahead more rapidly.

## COMMODITY OUTPUT

Of the changes carried out under collectivization, shifts in commodity output and land utilization have probably been analyzed the least. Both had high priorities and were considered essential for the successful and economical implementation of planned innovations in farm technology and land use under collectivization. During the active period of collectivization, however, none of these programs could be implemented effectively, and data show that commodity production declined.

Upward movements in commodity output did not begin to emerge until the completion of collectivization, suggesting that the economic programs needed to raise output were delayed until the political objectives were reached. In this context, the major production shifts in commodities that have become significant under communism are the strong growth of grains, industrial crops, and livestock products.

Under the centrally planned programs, the broad agricultural policy aims of each country were first guided by the concept of self-sufficiency to be attained by complete socialization of resources, strong central control over farm programs, and rigid pricing. These programs were dominant until about 1955. Subsequently, new economic directives, including upward shifts in prices, were implemented. The intent was to diversify the agricultural sector by reducing the area planted to grain crops, expanding the area of important commercial crops, and concentrating on the production of high-value livestock products.

A simultaneous expansion of livestock numbers and a reduction in grain area placed a high premium on increasing grain yields to meet the growing feed requirements of the livestock sector. The use of more domestic wheat for feed—a frequently overlooked adjunct to the planned program—had a strong impact on the total grain export capabilities of Eastern Europe during the fifties and early sixties.

## Crop Reduction

Between 1955-57 and 1966-68, approximately 3 million hectares of arable land were taken out of grains and put into fruits, vegetables, forage, or industrial crops or were reverted to pasture, industrial, or urban use. This shift is reflected in the decline—64 percent to 59 percent—in the share of arable land planted to grain (table 7).

The rate of decline in the planted area of grains was not consistent in all countries, but throughout Eastern Europe there was a decrease in the area planted to rye, oats, and corn. Wheat and barley areas increased 2 and 6 percent, respectively. While this long-term trend in land use is a fixed part of planning, year-to-year changes will undoubtedly be introduced in some or all countries to meet short-term plans or to offset shortages due to poor crops.

Table 7.--Eastern Europe: Cultivated area of major crops, averages 1955-57 and 1966-68

| Commodity | Average 1955-57 | Average 1966-68 | 1966-68 as a percentage of 1955-57 |
|---|---|---|---|
| | 1,000 hectares | | Percent |
| Wheat..... | 10,065 | 10,272 | 102 |
| Rye..... | 7,626 | 5,885 | 79 |
| Barley ..... | 3,174 | 3,365 | 106 |
| Oats..... | 3,690 | 2,660 | 72 |
| Corn..... | 8,355 | 7,695 | 92 |
| Total grain 1/ | 33,666 | 30,575 | 91 |
| Potatoes..... | 4,968 | 4,687 | 94 |
| Oilseeds 2/ .... | 1,199 | 1,660 | 138 |
| Sugarbeets ..... | 1,170 | 1,282 | 110 |
| Tobacco ..... | 246 | 273 | 111 |
| Other crops 3/ . | 11,755 | 13,284 | 113 |

1/ Includes miscellaneous grains.
2/ Includes all types of oilseeds.
3/ Flax, hemp, cotton, vegetables, fodder beets, clover, and other miscellaneous crops.

Excluding the immediate short-term objectives, it is significant that the decline in grain area has been counterbalanced by a long-term upward shift in yields (table 8). The outstanding achievements are the 67-percent gain in wheat and the 45-percent increase in barley and corn production. Part of the production gain for wheat and barley can be accounted for by an increase in the planted area—2 and 6 percent, respectively—but the gains for corn were made on a smaller planted area. Somewhat surprising is the fact that corn yields increased less than wheat despite the reported wider use of hybrid seed.

Declines in the production of rye and oats counter the favorable position of wheat and barley. The drop in rye can be accounted for by the shift in acreage to higher yielding wheat varieties. The downward

Table 8.--Eastern Europe: Output of major agricultural products and number of livestock units, averages 1955-57 and 1966-68

| Commodity or unit | Average 1955-57 | Average 1966-68 | 1966-68 as a percentage of 1955-57 | Rate of change 1/ |
|---|---|---|---|---|
| | 1,000 tons | | Percent | |
| Wheat | 14,303 | 23,952 | 167 | 4.8 |
| Rye | 11,347 | 11,230 | 99 | neg. |
| Barley | 5,498 | 7,993 | 145 | 3.4 |
| Oats | 5,580 | 5,028 | 90 | -1.0 |
| Corn | 14,266 | 20,707 | 145 | 3.4 |
| Total grain 2/ | 52,140 | 70,128 | 134 | 2.7 |
| Potatoes | 63,330 | 76,005 | 120 | 1.7 |
| Oilseeds | 1,209 | 2,599 | 215 | 7.2 |
| Sugarbeets | 24,830 | 41,662 | 168 | 4.8 |
| Tobacco | 233 | 310 | 133 | 2.6 |
| Meat 3/ | 6,746 | 9,916 | 147 | 3.6 |
| Milk | 25,590 | 35,462 | 139 | 3.0 |
| Eggs | 14,043 | 22,655 | 161 | 4.4 |
| Livestock units. | 65,120 | 71,107 | 109 | .9 |

neg. = negligible

1/ Compound annual increase determined from midyear of 3-year moving average beginning 1955-57, ending 1966-68.
2/ Includes miscellaneous grains.
3/ Liveweight.

shift in the area sown to oats is partially attributed to the sharp decrease in horse numbers in many countries. Significantly, the total area of both rye and oats declined by 2.8 million hectares.

Industrial crops also made strong production gains during 1955-68. Oilseed production increased by more than 115 percent, sugarbeets by 68 percent, and tobacco by 33 percent, reflecting the successful postwar trend to produce crops for export, or alternatively, to reduce dependence on imports. The success of these programs can be attributed to the favorable position of industrial crops under state-supported programs. State farms and special collective farms were not only directed to increase the area of industrial crops, but were also given priority in the allocation of available material inputs. In addition, prices for these crops were relatively more favorable than for other crops.

The 38-percent increase in the area planted to oilseeds and the 10-percent increase in sugarbeet plantings attest to the successful implementation of these programs, and the 4-percent annual rate of increase for both crops reflects the higher use of inputs. Tobacco production did not achieve the same favorable results. Although the planted area was expanded by 11 percent, yields increased only 2 percent annually, compared with the 4-percent gains noted for sugarbeets and oilseeds.

The smallest change in output among the major nongrain crops occurred in potato production. On a reduced acreage—approximately 300,000 hectares between 1955-57 and 1966-68—output increased 20 percent, or 1.7 percent a year. This more modest growth rate relative to industrial crops and wheat reflects the declining importance of potatoes as a food crop in the major producing countries of Czechoslovakia, East Germany, and Poland. It may also portend a further shifting of acreage from potatoes to other higher yielding feed crops, particularly since less attention has been given to breeding new varieties of potatoes than to wheat, corn, and oilseeds.

## Factors Affecting Changes in Crop Production

While long-term gains in commodity output are indicative of real growth, it is important to identify the time period when growth began to emerge and to recognize the policy decisions that influenced this change. Production data for all crops show erratic annual variations since 1955. In some years, the downward movement can be associated with collectivization drives and in others with adversities of weather. Upward gains over time also suggest varying relationships to changes in farm structure, added material inputs, and priority programs aimed toward improving hard currency earnings. Limited data preclude a statistical measure of the influence of these independent variables on output, but the respective country data on production, yields of selected crops, and rates of change permit some judgment of the effectiveness of known measures over a 12-year time span (tables 9 and 10).

The annual rate of change in the production of wheat shows a long-term gain of 4 percent or more per year for all countries except

Table 9.--Eastern Europe: Rates of change in production of selected commodities, averages 1955-57 and 1966-68 1/

| Commodity | Bulgaria | Czecho-slovakia | East Germany | Hungary | Poland | Romania | Yugo-slavia | Total, Eastern Europe |
|---|---|---|---|---|---|---|---|---|
| | | | | Percent | | | | |
| Wheat | 3.7 | 5.2 | 4.2 | 2.4 | 5.8 | 5.0 | 6.2 | 4.8 |
| Rye | -12.3 | -2.4 | -1.9 | -7.4 | 1.4 | -6.8 | -3.8 | neg. |
| Barley | 7.5 | 3.0 | 6.7 | 1.0 | 1.0 | 2.1 | 2.6 | 3.4 |
| Oats | - 2.9 | 1.1 | -2.0 | -7.6 | 1.0 | -7.3 | - .5 | -1.0 |
| Corn | 3.4 | .7 | 15.1 | 2.9 | -28.6 | 2.7 | 5.0 | 3.4 |
| Potatoes | 2.4 | -3.8 | .2 | -2.9 | 3.4 | 1.8 | 1.0 | 1.7 |
| Oilseeds | 6.3 | -7.7 | 4.8 | -3.0 | 12.3 | 8.6 | 10.6 | 7.2 |
| Sugarbeets | 6.7 | 2.3 | 1.8 | 4.9 | 6.7 | 6.9 | 8.0 | 4.8 |
| Tobacco | 4.9 | -1.8 | n.a. | -2.9 | 4.2 | 2.7 | 1.0 | 2.6 |
| Meat | 5.3 | 2.9 | 2.8 | 4.5 | 3.1 | 3.8 | 4.4 | 3.6 |
| Milk | 6.1 | 1.6 | 2.8 | 1.7 | 3.1 | 4.4 | 3.6 | 3.0 |
| Eggs | 6.0 | 4.5 | 4.7 | 5.5 | 3.7 | 4.7 | 3.7 | 4.4 |

neg. = negligible

1/ Compound annual increase determined from midyear of 3-year moving average, beginning 1955-57, ending 1966-68.

Table 10.--Eastern Europe: Rates of change in yields of selected commodities, averages 1955-57 and 1966-68 1/

| Commodity | Bulgaria | Czecho-slovakia | East Germany | Hungary | Poland | Romania | Yugo-slavia | Total, Eastern Europe |
|---|---|---|---|---|---|---|---|---|
| | | | | Percent | | | | |
| Wheat | 6.1 | 2.7 | 1.7 | 4.5 | 3.8 | 4.8 | 5.8 | 4.6 |
| Rye | 1.4 | 1.0 | 1.6 | neg. | 2.6 | .2 | 2.0 | 2.3 |
| Barley | 3.4 | 2.4 | 1.8 | 1.0 | 3.0 | 4.7 | 2.7 | 3.0 |
| Oats | .7 | 2.0 | 3.4 | -3.3 | 2.2 | .7 | -1.7 | 1.7 |
| Corn | 6.3 | 2.3 | 4.7 | 3.0 | 7.8 | 3.5 | 5.2 | 4.2 |
| Potatoes | 3.4 | .4 | 1.7 | - .5 | 3.4 | .4 | .4 | 2.2 |
| Oilseeds | 4.1 | 2.3 | 4.2 | - .8 | 5.1 | 4.5 | 5.8 | 4.1 |
| Sugarbeets | 6.3 | 3.2 | 2.0 | 4.8 | 5.2 | 4.1 | 5.5 | 3.9 |
| Tobacco | 3.5 | 1.9 | n.a. | -2.9 | 2.0 | 3.5 | -1.6 | 2.1 |

neg. = negligible n.a. = not available

1/ Compound annual increase determined from midyear of 3-year moving average, beginning 1955-57, ending 1966-68.

Bulgaria and Hungary. More significantly, the most rapid gains have occurred since 1963. Implicit in this change is the favorable response of yields to added fertilizer, new high-yielding soft varieties of wheat, and other inputs. In Bulgaria, Romania, and Yugoslavia, where wheat yield increases have been the highest, the application rate of fertilizers increased more than 20 percent a year (table 6). In addition, both Bulgaria and Romania increased the area of irrigated wheat, and thus softened the impact of drought on yields. Conversely, the lower rate of increase in wheat yields for Czechoslovakia and East Germany may be attributed to the high existing yields and the high application rates of fertilizer. Fertilizer inputs in these two countries have increased at steady rates of 9.1 and 4.8 percent per year, respectively, since 1955, compared with far more rapid gains in Bulgaria, Romania, and Yugoslavia.

Barley production varies more from country to country than wheat, but yield patterns are similar. Higher annual rates of change than the area average were made by Bulgaria, Poland, and Yugoslavia, due to the planting of new varieties and increased availability of fertilizer. Less striking gains were made by Czechoslovakia, East Germany, and Hungary. In these countries higher yields in the base year average account for the slower rates of increase.

Corn and potato production show the greatest contrasts among the countries in the study area, reflecting a comparative advantage position on the one hand and weather influences on the other. Since corn is the major feed grain in Bulgaria, Hungary, Romania, and Yugoslavia, the output of these countries determines the average for the area. The extremely high rate of change in corn yields in East Germany and Poland in table 10 can be explained by the relatively small acreages planted to corn in these countries.

Potato production is the highest in the northern countries of Eastern Europe—Czechoslovakia, East Germany, and Poland. Consequently year-to-year changes in these countries strongly influence area yields. The variability in the rates of increase in potato yields may be attributed to several factors: lower yields in the 1955-57 base period for Poland, the major producer, the decline in seed stock and farmer resistance to farm policy in Czechoslovakia, and the already high yields in East Germany in the base period. All causes for the shifts in the yields and production of oilseeds, sugarbeets, and tobacco in Eastern Europe cannot be isolated, but it appears that rapid gains in yields occurred simultaneously with significant increases in fertilizer use.

Because the East European countries have demonstrated their capability to increase output through higher yields, new technology, and mass education programs, growth in output of field crops is less a problem today than in the early and mid-fifties. More critical than the attainment of higher production is the need to solve the problems of collection, storage, and distribution. These service-related problems, along with the interrelated problems of production and trade, point to the growing gaps between the producer and the consumer.

## Livestock Production

The upward trend in grain yields supplies an economic criterion for explaining the strong gains in livestock numbers and livestock products in the area. All countries increased poultry and hog holdings, with gains for the area amounting to 39 and 19 percent, respectively, over the 1955-57 base period (table 11). In addition, cattle numbers rose 13 percent over the base period and sheep numbers, 7 percent. But a decline in cattle numbers developed in Bulgaria and Hungary, and pronounced declines of sheep occurred in Czechoslovakia and Poland.

The decrease of cattle numbers in Bulgaria and Hungary can be partially attributed to the impact of collectivization, which when fully implemented restricted private ownership to one cow per household plot. This decrease occurred in other countries of Eastern Europe, but, generally, the declines in private holdings were offset by increases in the collective herds. Sheep numbers started a decline in Czechoslovakia and Poland in 1956. In Czechoslovakia, the decline was partly due to the exodus of farmers from the mountainous border areas. For Poland, numbers probably declined because the annexed western territories were less intensively farmed than under the Germans who formerly held them. A decline in sheep numbers more modest than that of Czechoslovakia and Poland occurred in Yugoslavia and is attributed to overgrazing and drought conditions in recent years.

When livestock numbers are related to arable and agricultural land, the results show where growth has been most intensive and where future problems may develop (tables 11 and 12). Cattle numbers in the area, for example, show a 13-percent absolute increase over the base period, but a 16-percent increase per unit of arable land. Hog and poultry numbers also increased more rapidly per unit of arable land than absolutely, further accentuating the pressure on existing land resources to supply extra feed or on planners to import more feed. The increase in yields of major feed crops during 1955-68 suggests that domestic programs to increase the total feed supply played a larger role in the upward movement of the livestock sector than import programs. But both programs were necessary to meet the higher feed needs of the expanded livestock sector.

The long-term impact of higher feed inputs is reflected in the following reported increases in production between 1955-57 and 1966-68: meat (liveweight), 47 percent; eggs, 61 percent; milk, 38 percent; and total animal units, 9 percent (table 8). That these gains were made during a period of strong political pressure against private ownership of livestock reflects peasant initiative, government restraint against peasant ownership, and a slow improvement in breeding stock. As late as 1967, peasant farmers of Eastern Europe still held a sizable share of livestock on their household plots or withheld livestock from collective management under statutes permitting some farmers to manage their own herds. The latter group included farmers who had not contributed all their farm

Table 11.--Eastern Europe: Livestock numbers and percentage change, average 1966-68

| Country | Average 1966-68 | | | | Average 1966-68 as a percentage of average 1955-57 | | | |
|---|---|---|---|---|---|---|---|---|
| | Cattle | Hogs | Sheep | Poultry | Cattle | Hogs | Sheep | Poultry |
| | 1,000 head | | | | Percent | | | |
| Bulgaria ..... | 1,399 | 2,333 | 10,072 | 24,069 | 89 | 167 | 130 | 174 |
| Czechoslovakia ..... | 4,392 | 5,476 | 685 | 29,475 | 107 | 106 | 69 | 127 |
| East Germany..... | 4,899 | 9,148 | 1,903 | 37,678 | 130 | 107 | 105 | 136 |
| Hungary..... | 1,979 | 6,453 | 2,383 | 32,024 | 95 | 115 | 118 | 138 |
| Poland ..... | 9,868 | 14,485 | 2,700 | 78,200 | 121 | 125 | 65 | 144 |
| Romania ..... | 5,155 | 5,506 | 13,871 | 43,733 | 110 | 125 | 128 | 135 |
| Yugoslavia ..... | 5,663 | 5,503 | 10,181 | 34,270 | 110 | 126 | 90 | 134 |
| Total, Eastern Europe | 33,354 | 48,904 | 41,795 | 279,449 | 113 | 119 | 107 | 139 |

Table 12.--Eastern Europe: Livestock and poultry numbers per 100 hectares of agricultural and arable land, averages 1955-57 and 1966-68 1/

| Livestock and Poultry | Average 1955-57 | | Average 1966-68 | | Average 1966-68 as a percentage of average 1955-57 | |
|---|---|---|---|---|---|---|
| | Agricultural land | Arable land | Agricultural land | Arable land | Agricultural land | Arable land |
| | Numbers | | | | Percent | |
| Cattle ..... | 38 | 53 | 44 | 60 | 116 | 113 |
| Hogs..... | 54 | 74 | 65 | 89 | 120 | 120 |
| Sheep ..... | 52 | 70 | 55 | 76 | 106 | 109 |
| Poultry ..... | 263 | 361 | 369 | 509 | 140 | 141 |

1/ Calculated data.

holdings—in particular pastureland—to collective farms and who for definitional purposes belonged to a lower type of collective farm.

But even without full state control over these resources, a continued expansion of the livestock sector is projected through 1970. For some countries—Bulgaria, Romania, and Yugoslavia—improvement can be achieved principally from expected higher feed yields. For others—Czechoslovakia, East Germany, and Hungary—the planned increase in livestock numbers and products will depend on the efficient use of available feed inputs or the increase of feed and feed supplement imports, or both.

The long-range potential for raising livestock and livestock products from a further intensification of agricultural inputs is less favorable for Czechoslovakia and East Germany than for other countries in Eastern Europe. Population and livestock numbers per unit of land resources are already higher in Czechoslovakia and East Germany than the average for the area. A more economical approach to a higher standard of living in these two countries may be through further industrialization and increased imports of feed rather than through continued intensification of agricultural production.

For the remaining countries, evidence suggests that a further growth in the output of major feed commodities is attainable. Increasing the availability of inputs, expanding reclamation and irrigation programs, and maximizing the utilization of land resources are only some of the ways to increase output. But achieving a more rapid rate of growth of livestock products in these countries may also require greater emphasis on feeding efficiency and more intensive use of protein supplements than in the past. All East European countries are thus reshaping their agricultural programs for this head-on test and are in the process of implementing new economic incentives. These include higher prices, a more efficient use of all resources, programing for new investments, and reviewing the costs of supplementary food and feed products needed to expand the livestock sector. This effort reflects a beginning shift to meet consumer demand on one hand, and the economic advantage of exporting high value products on the other.

## FACTORS AFFECTING THE DEMAND FOR AGRICULTURAL PRODUCTS

The most consistent economic program carried out by Communist planners in Eastern Europe has been the industrialization of each nation as quickly as possible. Under this first order of priority, industrial growth was strong through most of the fifties, somewhat weaker in the early sixties, but again moved forward after 1965. One major outgrowth of this development has been the migration of rural labor into urban areas. This redistribution of the population and labor force, when combined with the higher earning power of industrial labor, has generated a stronger demand for processed foods, textiles, and other consumer goods. During the initial phase of industrialization, much of this demand

was restrained by the heavy turnover tax placed on these products. [4] But with an improving economic position this restraint is being questioned and reexamined concomitantly with a review of the existing price structure.

## Income and Population Changes

Some measure of the strength of the new demand for consumer goods can be drawn from the observed rise in the per capita gross national product (GNP) since 1960. The estimated per capita level of $1,783 a year for Czechoslovakia and East Germany in 1967 exceeded that of several West European countries. Estimates varying from $1,012 to $1,265 for Hungary, Poland, and Bulgaria were not far behind. Romania's per capita level of $937 was 23 percent higher than Yugoslavia's $760, the lowest in order of rank among the East European countries (table 13).

Table 13.--Eastern Europe: Per capita gross national product and percentage share of national income spent on food and beverages, 1967

| Country | Population 1/ | Per capita GNP 2/ | Expenditures for food 3/ |
|---|---|---|---|
| | Millions | U.S. dollars | Percent |
| Bulgaria | 8.3 | 1,012 | 4/44 |
| Czechoslovakia | 14.3 | 1,783 | 5/42 |
| East Germany | 17.1 | 1,783 | 5/37 |
| Hungary | 10.2 | 1,265 | 5/44 |
| Poland | 31.9 | 1,112 | 5/42 |
| Romania | 19.3 | 937 | 5/42 |
| Yugoslavia | 19.9 | 6/760 | 7/41 |

1/ Midyear population.
2/ Based on estimates published in (15).
3/ Percentage share based on surveys of expenditure and income of industrial and white-collar workers with a family of three or four.
4/ 1964 data.
5/ 1965 data. Tobacco, alcohol, and luxury food products are included in the data for East Germany, Hungary, and Yugoslavia.
6/ Calculated from estimated GNP for 1967 in fixed 1960 prices.
7/ 1966 data.

[4] The turnover tax was an indirect tax placed on agricultural and consumer products to offset the low direct taxes on income. This tax represented a substantial markup of the low producer prices paid to the farmer for food and agricultural products used by light and consumer industries. In effect, the tax served as a source of funds for capital formation, acted as a form of rationing of scarce commodities, and reflected the rigid control over prices in a command society.

While population growth for the area is increasing, it is not dynamic. The 0.7-percent annual rate of increase during 1960-67 was well below the more rapid increases of developing countries and less than the 1.1-percent increase of the countries of the European Community (EC) and the European Free Trade Association (EFTA). This slower population growth, combined with some improvement in labor productivity, accounts in part for the rise in the standard of living during a time when only minimum investments were made in the consumer and light industries. Of the East European countries, Poland had the highest annual rate of population increase, 1.2 percent, followed by Yugoslavia's 1 percent. Hungary and East Germany ranked the lowest. Sociological, economic, and religious factors have influenced population growth differently in each country. The present low average for the area suggests that future market opportunities for agricultural products in this part of the world will be more responsive to income changes and accompanying shifts in consumer preferences than to population growth.

However, the strong upward growth of national income and industrial wage earners has exerted new pressure on the respective governments to expand consumer goods production. This response to consumer demand is in sharp contrast to the strict command system of the immediate postwar period which regulated supplies through rationing and the turnover tax. Food products, for example, were relatively scarce during most of the fifties, but with improving agricultural developments, governments are attempting to adjust slowly to consumer demands.

The leader in the move toward a more market-oriented economy is Yugoslavia. But the many reform programs introduced in recent years by all countries also suggest that serious thought has been given to the introduction of free market prices for bringing supply and demand into balance, particularly for food and agricultural products.

## Measuring Consumer Demand

Measuring consumer response to price changes in East European countries is imprecise, since there are no real base lines for a beginning study. One test of the response of consumer demand to price changes might be made from the free market prices of food products sold in the peasant markets. These markets are the main outlets for quality foods—meat, milk, and eggs. Both Czechoslovakia and Hungary have introduced the concept of free market prices in state stores for a limited number of commodities since 1957. Price reforms under the New Economic Mechanism in Hungary and the continued interest in the economic role of prices in Czechoslovakia may allow further studies of market demand to develop in future years.

At the present time, the best estimate of shifts in the demand for food products can be judged from the income elasticity coefficients published in a 1966 FAO study (8). For the area as a whole excluding

Yugoslavia but including the Soviet Union, the study shows an extremely low income coefficient of 0.07 for cereals. Alternatively, high coefficients of 0.64 for meat, 0.70 for fish, 0.66 for fats and oils, and 0.54 for fruits and vegetables tend to support East European economists who have inferred that the rise in income in the urban areas and the decline in the rural population have been instrumental in the shift to processed and quality foods.

High wages in urban centers and population declines in rural areas have had a profound impact on per capita food consumption levels, as observed in table 14. The high-income countries of Czechoslovakia and East Germany are readily identified as the highest per capita consumers of meat and livestock products. Conversely, the low-income-producing countries—Bulgaria, Romania, and Yugoslavia—are still the highest consumers of major staples—bread, potatoes, and corn. Although not an unexpected phenomenon, it is significant that in the low-income countries there has also been a sharp rise in the consumption of wheat and a decrease in the consumption of corn. Evidence of this shift is especially striking in Romania and Yugoslavia, both of which are major producers of corn. Rising incomes, therefore, have not only influenced the demand for high-protein livestock products but have also accelerated consumer preference for wheat over corn.

Studies of consumer spending habits in selected countries further reveal that expenditures for food in East European countries range from 37 percent of gross income for a family of three in Czechoslovakia to 44 percent in Hungary and Bulgaria (table 13). While these percentage shares of total income spent on food are still high when compared with the average of approximately 32.8 percent for the EC and EFTA countries, it should be noted that rent, health insurance, and other services are heavily subsidized in Eastern Europe (17). This subsidization tends to inflate the percentage share of expenditures on foods and other consumer goods relative to services.

Apart from these diffused statistics, it is clear that Eastern Europe has improved the amount and availability of quality food products within its economic potential. It is also evident from the current and short-term programs that one way of furthering this improvement is through an increase in agricultural production. As a means of meeting demands over time, trade must not be underestimated. However, the long-term influence of trade will be more important in the high-income-producing countries—Czechoslovakia and East Germany—where the agricultural growth potential is limited than in the low-income countries—Yugoslavia, Bulgaria, and Romania—where growth and resources have not been used to the optimum. Hungary and Poland lie somewhere in between the two extremes.

## DEMAND FOR GRAINS

Eastern Europe's agricultural economy depends heavily on grain to sustain its long-term agricultural goals. Grain is the major commodity

Table 14.--Eastern Europe: Comparative per capita consumption of selected foods, 1955 and 1967

| Commodity | Bulgaria | | Czecho-slovakia | | East Germany | | Hungary | | Poland | | Romania 1/ | | Yugoslavia | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1955 2/ | 1967 | 1955 | 1967 | 1955 | 1967 | 1955 | 1967 | 1955 | 1967 | 1955 | 1967 | 1955 | 1967 |
| | Kilograms | | | | | | | | | | | | | |
| Wheat and rye 3/ | 242.6 | 241.6 | 172.1 | 159.3 | 160.4 | 128.7 | 205.6 | 179.9 | 238.0 | 186.8 | 130.0 | 173.0 | 168.3 | 198.4 |
| Corn 3/ | 14.4 | 14.4 | neg. | neg. | neg. | neg. | neg. | neg. | neg. | neg. | 80.8 | 64.0 | 54.0 | 26.7 |
| Rice | 2.9 | 3.7 | 2.4 | 4.7 | 1.3 | 2.2 | 1.6 | 3.7 | n.a. | 1.9 | neg. | neg. | 1.6 | 1.0 |
| Potatoes | n.a. | n.a. | 121.2 | 121.4 | 174.6 | 156.3 | 119.9 | 84.6 | 229.0 | 207.0 | 70.2 | 70.3 | 60.3 | 66.0 |
| Sugar 4/ | 11.6 | 25.2 | 33.7 | 39.4 | 27.4 | 31.6 | 24.4 | 32.0 | 24.0 | 35.5 | 8.7 | 20.2 | 10.8 | 24.5 |
| Vegetable oils and margarine | 5/11.2 | 5/17.3 | 6.9 | 8.3 | 12.0 | 13.8 | 2.6 | 2.0 | 1.9 | 5.5 | 2.7 | 13.5 | 2.1 | 7.1 |
| Slaughter fats | n.a. | n.a. | 6.7 | 7.4 | 7.0 | 6.4 | 18.4 | 22.3 | 6.1 | 7.1 | 4.8 | 5.7 | 7.5 | 7.4 |
| Meat and meat products 6/ | 26.6 | 43.4 | 44.8 | 62.7 | 41.6 | 61.4 | 28.0 | 51.6 | 37.7 | 52.3 | 27.3 | 32.5 | 19.9 | 23.5 |
| Poultry | n.a. | n.a. | 3.9 | 5.4 | 3.4 | 4.4 | 8.9 | 12.2 | n.a. | n.a. | 2.3 | 5.2 | 2.5 | 4.7 |
| Milk 7/ | 81.0 | 118.8 | 143.5 | 113.3 | 90.7 | 94.1 | 86.7 | 105.1 | 204.0 | 250.0 | 104.0 | 150.0 | 65.0 | 76.5 |

n.a.=not available. neg.=negligible

1/ Preliminary estimates.
2/ 1956 data.
3/ In terms of whole grain equivalent. Includes small quantities of barley and oats for Poland.
4/ Refined basis.
5/ Includes animal slaughter fats.
6/ Includes beef, veal, mutton, other meat, and edible offals.
7/ Liters. Includes buffalo milk in Romania.

produced, imported, consumed directly as food, and utilized indirectly by the livestock sector. Success or failure of agricultural programs still revolves around supply and demand for grain.

Complexities in measuring the demand for grain in a command system are manifold. Lacking precise data on family incomes, retail prices, and farm purchases, the criteria used in this study to estimate demand are official per capita consumption data for wheat, rye, and corn and feed utilization computations derived from the residual supply after deducting amounts for food consumption, industrial use, and seed. By adhering to official published data on production, trade, and per capita consumption and by using acceptable feed coefficients, a reasonable supply and demand balance for grain has been determined for the area and for each country in the area. [5]

## Food Grain Consumption

Consumption patterns vary considerably in Eastern Europe. Decreases after 1955 in the per capita consumption of food grain—wheat and rye—occurred in Czechoslovakia, Hungary, East Germany, and Poland; increases developed in Bulgaria, Romania, and Yugoslavia. The increased utilization of wheat and rye for feed, however, is a universal phenomenon. Economic decisions which have shaped this pattern are not easily discernible, but the low procurement prices of wheat and rye relative to the high procurement prices paid for livestock products may have been a major causative factor.

Rationing of foods existed in one form or another in some or all of the countries of Eastern Europe at least through 1961. Rationing was controlled by both coupon and price. Market forces played only a minimum role in the distribution and purchase of grains until Yugoslavia's decision to permit private farm sales direct to large consumers was implemented in the mid-sixties. Throughout the remainder of the area, grain is procured principally through government organizations. Prices are fixed by the government and sales are made either under a contract or as an obligatory delivery. Until the mid-sixties, the price of grain was well below the cost of production and in many years the heavy obligations placed on the farmer to deliver grain left little for use as feed. But official policy also kept the price of bread very low, and during the period of trial and error it was not unusual for peasant farmers to purchase low-cost bread for feed as a substitute for the grains delivered to government procurement organizations. Such irrational use of resources and prices in the command system is only one example of the managerial gap that existed during collectivization.

The era of collectivization was also rife with other decisions that encouraged the wasteful use of limited farm resources or denied them

[5] Methodological concepts taken from (2).

to efficient users. These abuses reflected an economic accommodation to collectivization rather than a permanent intent to forestall agricultural development.

Despite collectivization, 36 million tons of wheat and rye were produced in 1967—an increase of 39 percent over the 1955 output. In contrast, total wheat and rye consumption for food rose only 1.2 million tons during the same period (table 15). This represents an annual rate of increase of 0.5 percent which, in comparison with the population growth of 0.7 percent for the area, reflects the low-income elasticity of demand for grains in an economic setting of rising incomes and growing supplies of livestock products. For the same period, net imports of wheat and rye varied from a high of 6.8 million tons in 1964 to a low of 2.7 million tons in 1967 (table 16).

The paradox of higher production and imports and lower consumption may be attributed to previously unrecognized long-term shifts in the consumption and utilization of grain, not to statistical inconsistencies as first believed.

During 1955-67, consumption of wheat and rye for food declined in East Germany, Hungary, and Poland; increased slightly in Czechoslovakia; but shifted upward from 20 to 48 percent in Bulgaria, Romania, and Yugoslavia (table 15). In the latter three countries, the increased consumption of wheat was accompanied by a decrease in the consumption of corn. However, the upward trend in consumer demand for wheat throughout the area only accounted for 1.2 million tons of the 10-million-ton increase in production during 1955-67. The weight of economic evidence derived from these preliminary statistics suggests that as food grain production in Eastern Europe increased in successive years, a larger share of the total output was shifted to feed use.

## Feed Uses of Food Grains

The use of food grain for feeding livestock was a major factor in the strong continuing import demand for wheat and rye throughout Eastern Europe during 1955-67 (table 16). Food and feed balances, constructed from published data, confirmed a high use of wheat for feed in the major importing countries of Czechoslovakia and East Germany for the entire 12-year period. The use of wheat for feed also became more pronounced in Poland after 1959, and in Yugoslavia and Bulgaria after 1964. The Hungarian position is less easily identified, but there is evidence to suggest that more wheat was used for feed during 1961-67 than in earlier years. Romania was more self-sufficient in feed grains during the fifties and sixties, and the increase in wheat production apparently did not influence feeding rates significantly.

The probable use of wheat for feed can also be judged from tables 17 and 18. Table 17 shows wheat and rye consumption for food as a

Table 15.--Eastern Europe: Consumption of wheat and rye for food, 1955-67 1/

| Year | Bulgaria | Czecho-slovakia | East Germany | Hungary | Poland 2/ | Romania | Yugo-slavia | Total, Eastern Europe |
|---|---|---|---|---|---|---|---|---|
| | 1,000 tons | | | | | | | |
| 1955 | 1,729 | 2,253 | 2,878 | 2,024 | 6,493 | 2,252 | 3,008 | 20,637 |
| 1956 | 1,747 | 2,282 | 2,716 | 2,061 | 5,841 | 1,847 | 2,812 | 19,306 |
| 1957 | 1,714 | 2,143 | 2,648 | 1,800 | 6,058 | 2,603 | 3,073 | 20,039 |
| 1958 | 1,790 | 2,097 | 2,702 | 1,759 | 5,668 | 2,528 | 3,069 | 19,613 |
| 1959 | 1,806 | 2,127 | 2,423 | 1,818 | 5,848 | 2,898 | 3,336 | 20,256 |
| 1960 | 1,847 | 2,167 | 2,279 | 1,817 | 5,971 | 2,907 | 3,560 | 20,548 |
| 1961 | 1,854 | 2,194 | 2,200 | 1,825 | 6,113 | 2,842 | 3,725 | 20,753 |
| 1962 | 1,870 | 2,305 | 2,271 | 1,811 | 6,247 | 3,010 | 3,933 | 21,447 |
| 1963 | 1,885 | 2,312 | 2,173 | 1,816 | 6,107 | 2,986 | 3,930 | 21,209 |
| 1964 | 1,900 | 2,310 | 2,207 | 1,822 | 6,107 | 3,007 | 3,991 | 21,344 |
| 1965 | 1,958 | 2,319 | 2,225 | 1,827 | 6,173 | 3,250 | 4,012 | 21,764 |
| 1966 | 2,062 | 2,278 | 2,204 | 1,829 | 6,023 | 3,270 | 3,970 | 21,636 |
| 1967 | 2,075 | 2,289 | 2,200 | 1,845 | 6,037 | 3,329 | 4,030 | 21,805 |
| | Percent | | | | | | | |
| 1967 as a percentage of 1955 | 120 | 102 | 76 | 91 | 93 | 148 | 134 | 106 |

1/ Estimates computed from officially reported or derived per capita consumption data of bread and converted to whole grain equivalent.

2/ Includes small quantities of barley and oats.

Table 16.--Eastern Europe: Total trade of all grains, 1955-67

| Year | Food grains | | | Coarse grains | | | Total grains | | |
|---|---|---|---|---|---|---|---|---|---|
| | Imports | Exports | Net trade | Imports | Exports | Net trade | Imports | Exports | Net trade |
| | 1,000 tons | | | | | | | | |
| 1955..... | 4,670 | 366 | -4,304 | 1,537 | 740 | -797 | 6,207 | 1,106 | -5,101 |
| 1956..... | 4,526 | 438 | -4,088 | 1,508 | 909 | -599 | 6,034 | 1,347 | -4,687 |
| 1957..... | 6,336 | 79 | -6,257 | 1,847 | 334 | -1,513 | 8,183 | 413 | -7,770 |
| 1958..... | 4,456 | 111 | -4,345 | 1,093 | 1,267 | +174 | 5,549 | 1,378 | 4,171 |
| 1959..... | 5,600 | 273 | -5,327 | 1,578 | 513 | -1,065 | 7,178 | 786 | -6,392 |
| 1960..... | 5,390 | 482 | -4,908 | 1,610 | 1,200 | -410 | 7,000 | 1,682 | -5,318 |
| 1961..... | 5,922 | 465 | -5,457 | 1,679 | 1,508 | -171 | 7,601 | 1,973 | -5,628 |
| 1962..... | 5,616 | 103 | -5,513 | 2,232 | 1,261 | -971 | 7,848 | 1,364 | -6,484 |
| 1963..... | 6,860 | 972 | -5,888 | 2,468 | 1,254 | -1,214 | 9,328 | 2,226 | -7,102 |
| 1964..... | 6,912 | 78 | -6,834 | 2,983 | 1,429 | -1,554 | 9,895 | 1,507 | -8,388 |
| 1965..... | 5,052 | 751 | -4,301 | 3,390 | 968 | -2,422 | 8,442 | 1,719 | -6,723 |
| 1966..... | 6,006 | 656 | -5,350 | 1,721 | 983 | -738 | 7,727 | 1,639 | -6,088 |
| 1967 1/... | 4,380 | 1,627 | -2,653 | 1,896 | 2,693 | +797 | 6,235 | 4,319 | -1,956 |

1/ Estimates based on preliminary trade reports.

Table 17.--Eastern Europe: Wheat and rye consumption for food as a percentage of production, 1955-67 1/

| Year | Bulgaria | Czecho-slovakia | East Germany | Hungary | Poland | Romania | Yugo-slavia | Total, Eastern Europe |
|---|---|---|---|---|---|---|---|---|
| | Percent | | | | | | | |
| 1955..... | 82.6 | 92.3 | 81.1 | 75.7 | 71.1 | 69.9 | 111.7 | 80.0 |
| 1956..... | 94.4 | 88.1 | 80.2 | 88.1 | 67.3 | 71.8 | 155.8 | 83.1 |
| 1957..... | 67.9 | 86.6 | 75.9 | 73.6 | 62.1 | 67.6 | 90.9 | 75.7 |
| 1958..... | 73.8 | 91.8 | 72.4 | 94.7 | 58.7 | 83.2 | 114.0 | 76.4 |
| 1959..... | 71.3 | 81.3 | 69.2 | 77.3 | 55.2 | 70.2 | 75.9 | 67.2 |
| 1960..... | 75.1 | 90.4 | 63.6 | 85.6 | 58.6 | 81.8 | 93.6 | 73.1 |
| 1961..... | 88.4 | 82.4 | 86.5 | 81.7 | 54.8 | 69.4 | 110.8 | 73.7 |
| 1962..... | 87.8 | 90.0 | 74.7 | 82.6 | 66.6 | 72.9 | 106.9 | 79.1 |
| 1963..... | 96.8 | 88.1 | 73.5 | 104.5 | 59.9 | 77.0 | 91.5 | 76.8 |
| 1964..... | 87.1 | 85.6 | 68.1 | 78.4 | 60.7 | 76.8 | 103.0 | 75.6 |
| 1965..... | 65.8 | 82.4 | 59.9 | 69.3 | 52.7 | 53.6 | 111.0 | 64.9 |
| 1966..... | 63.5 | 75.0 | 61.0 | 75.1 | 53.3 | 63.3 | 83.1 | 65.3 |
| 1967..... | 64.8 | 70.1 | 55.0 | 62.7 | 51.9 | 55.0 | 80.1 | 60.7 |

1/ Calculated data.

Table 18.--Eastern Europe: Wheat and rye imports as a percentage of consumption, 1955-67 1/

| Year | Bulgaria | Czecho-slovakia | East Germany | Hungary | Poland | Romania | Yugo-slavia | Total, Eastern Europe |
|---|---|---|---|---|---|---|---|---|
| | Percent | | | | | | | |
| 1955..... | 2.3 | 40.6 | 25.8 | 26.7 | 17.8 | 13.4 | 32.4 | 22.6 |
| 1956..... | .5 | 32.5 | 40.0 | 16.9 | 16.7 | 2.4 | 47.0 | 23.4 |
| 1957..... | 10.7 | 48.3 | 53.6 | 19.4 | 29.6 | 17.5 | 35.7 | 31.6 |
| 1958..... | 1.3 | 48.9 | 55.5 | 5.7 | 15.4 | 7.6 | 24.1 | 22.7 |
| 1959..... | 9.5 | 61.1 | 63.6 | 14.3 | 22.5 | .2 | 30.2 | 27.7 |
| 1960..... | 7.5 | 55.6 | 77.0 | 17.4 | 30.3 | 3.5 | 1.9 | 26.2 |
| 1961..... | .4 | 54.1 | 68.0 | 23.9 | 33.6 | neg. | 20.0 | 28.5 |
| 1962..... | 6.4 | 47.7 | 74.2 | 12.5 | 28.0 | .5 | 18.7 | 26.2 |
| 1963..... | 10.2 | 61.7 | 60.0 | 22.0 | 34.1 | 13.4 | 36.6 | 32.3 |
| 1964..... | 21.5 | 66.2 | 63.6 | 19.5 | 36.2 | neg. | 15.1 | 32.4 |
| 1965..... | 8.9 | 41.2 | 56.9 | 6.8 | 22.3 | neg. | 29.7 | 23.2 |
| 1966..... | 15.3 | 47.6 | 66.3 | 8.3 | 27.2 | neg. | 34.2 | 27.7 |
| 1967..... | .6 | 52.6 | 53.8 | 11.2 | 22.4 | neg. | 10.1 | 20.3 |

neg.=negligible

1/ Calculated data.

percentage of total domestic production, and table 18, wheat and rye imports as a percentage of consumption. From these data it can be seen that at present consumption levels all countries currently are self-sufficient in wheat and rye for food. Also, the high percentage share of imports relative to consumption points to alternative uses of food grains by Czechoslovakia, East Germany, and possibly Poland. Hungary and Yugoslavia's position is more difficult to assess, since both countries have imported large quantities of wheat only in particular years. This erratic and unpredictable trading pattern reflects a possible import response to low domestic production in drought years rather than a consistent demand.

While the quantitative trade data in table 16 suggest a strong and rather stable demand for wheat and rye in Eastern Europe during 1955-67, there is no indication whether this demand simply reflected expecially favorable trade opportunities or an actual market need. Where the USSR was the major supplier of wheat, as in Czechoslovakia, East Germany, and Hungary, bilateral trade arrangements, credit terms, and loans were usually favorable to importing countries. The price of wheat under these arrangements was negotiated relative to prices of other goods and could hardly have qualified as a competitive world market price. Where the United States was the major supplier—Poland and Yugoslavia—wheat purchases made under Title I, P.L. 480, could also be considered a response to noncompetitive world prices. In both these instances the favorable terms of sale may have encouraged imports of wheat which were not economically justified. And this demand persisted until stronger internal measures were taken to correct this shortcoming. The recent upward shift in wheat acreage in Czechoslovakia, Hungary, Poland, and Yugoslavia, all major importers, reflects a serious intent to correct the diseconomies that grew out of political concessions, and if continued through the midseventies could narrow all wheat trading opportunities with Eastern Europe.

Whatever ex post judgments are made about the influence of noncompetitive prices on wheat and rye imports by Eastern Europe, the liberal use of both grains for feed furthered growth of livestock and poultry throughout Eastern Europe during 1955-67. Significantly, growth was most rapid in the high feed-concentrate-consuming categories—hogs and poultry. Cattle numbers also increased in East Germany, Poland, and Yugoslavia, and sheep numbers increased in all countries except Czechoslovakia, Poland, and Yugoslavia (table 11).

## Feed Grains

Despite the increase in livestock herds in the area from 1955 to 1967, feed grain imports—barley, oats, corn, and corn sorghum—were considerably less than those of wheat and rye. Average annual imports of feed grains through 1962 remained close to the 1.6-million-ton level (table 16). A stronger upsurge developed through 1965, primarily due to the substitution of feed grains for wheat in USSR exports to the region.

Good feed grain harvests in 1966 and 1967 improved domestic supplies, and the imports of feed grains dropped back to the lower 1955-62 average (table 5). Wheat and rye imports, however, continued at high levels.

In retrospect, the phenomenon of the steady upturn in feed-concentrate-consuming livestock and poultry and the increase in roughage-consuming livestock could not have developed unless substantial quantities of food grain imports were used for feed, or as a substitute for domestic wheat and rye production used for feed.

East Germany, Czechoslovakia, and Poland are the major consumers of wheat and rye for feed, but feed balance data show that both commodities were used for feed in all countries. The analysis of variance was used to test the derived feed inputs per grain-consuming animal unit for each country and the area during 1955-67, and the results showed a significance of means at the 5-percent level for all countries (tables 19, 20, and 21).

## Feeding Efficiency

Although the assembled data on feed utilization are still preliminary, two additional patterns emerge from these estimates. First, the average feed input per animal unit during 1965-67 was higher than either of the preceding 5-year averages in all countries, and second, the higher percentage increase over the 1955-59 average noted for Bulgaria, Poland, and Yugoslavia reflects the strong gains in hog and poultry numbers in these countries.

Noteworthy is the relatively high feed input per animal unit throughout the area. Compared with recent studies in the United States, the East European area average for 1960-64—0.571 tons per grain-consuming animal unit—is approximately 70 percent of the 1959-64 U.S. average (3). Individual country averages compare more favorably, particularly Hungary's 0.657 tons and Poland's 0.594 tons, which are 80 percent and 73 percent, respectively, of the U.S. average in 1959-64. Table 22 indicates that more recent averages in Eastern Europe are even higher.

While these high feed inputs can be supported by the previously reported production gains in field crops and the sustained level of grain imports, there are no meaningful price data available to measure the efficiency of feed inputs relative to output in Eastern Europe. Historical evidence suggests, however, that inefficient feeding practices existed during most of the 1955-67 period. The early agricultural programs in Eastern Europe were influenced by institutional factors which collectivization did not erase, and the accommodation to these institutional factors may have prolonged inefficient feeding practices and indirectly created an artificial demand for grain imports. One of the persistent institutional factors is the peasants' strong hold over a substantial share of the livestock herds.

Table 19.--Eastern Europe: Grain-consuming animal units, 1955-68 1/

| Year | Bulgaria | Czecho-slovakia | East Germany | Hungary | Poland | Romania | Yugo-slavia | Total, Eastern Europe |
|---|---|---|---|---|---|---|---|---|
| | 1,000 units | | | | | | | |
| 1955 | 3,390 | 7,166 | 9,911 | 6,766 | 18,375 | 8,774 | 9,866 | 64,248 |
| 1956 | 3,468 | 7,547 | 10,379 | 7,009 | 19,063 | 9,372 | 9,726 | 66,564 |
| 1957 | 3,452 | 7,607 | 9,879 | 6,222 | 19,787 | 8,582 | 9,023 | 64,550 |
| 1958 | 3,758 | 7,603 | 9,864 | 6,515 | 19,778 | 8,238 | 9,436 | 65,192 |
| 1959 | 3,804 | 7,464 | 9,487 | 7,183 | 19,554 | 8,801 | 10,420 | 66,713 |
| 1960 | 3,963 | 7,715 | 10,166 | 6,463 | 20,629 | 8,972 | 10,965 | 68,873 |
| 1961 | 4,296 | 7,838 | 10,082 | 6,591 | 21,355 | 8,957 | 10,733 | 69,852 |
| 1962 | 5,275 | 7,797 | 10,343 | 6,858 | 21,556 | 9,394 | 10,445 | 70,668 |
| 1963 | 4,027 | 7,714 | 9,642 | 6,068 | 20,207 | 8,694 | 9,980 | 66,332 |
| 1964 | 4,007 | 7,624 | 10,585 | 6,743 | 21,096 | 8,761 | 10,569 | 69,385 |
| 1965 | 4,366 | 7,754 | 10,196 | 7,229 | 21,617 | 9,749 | 11,076 | 71,987 |
| 1966 | 4,184 | 7,282 | 10,282 | 6,327 | 22,186 | 9,452 | 11,026 | 69,739 |
| 1967 | 4,066 | 7,158 | 10,605 | 6,525 | 22,476 | 9,815 | 10,537 | 71,182 |
| 1968 | 4,126 | 7,270 | 10,552 | 7,003 | 22,343 | 10,253 | 10,855 | 72,402 |
| Average: | | | | | | | | |
| 1955-59 | 3,574 | 7,477 | 9,904 | 6,739 | 19,311 | 8,747 | 9,694 | 65,453 |
| 1956-64 | 4,314 | 7,738 | 10,164 | 6,545 | 20,968 | 8,956 | 10,538 | 69,022 |
| 1965-68 | 4,186 | 7,366 | 10,409 | 6,771 | 22,156 | 9,817 | 10,624 | 71,328 |

1/ Determined from numbers of all classes of livestock held on farms on Jan. 1, or nearest census date. Numbers converted into grain-consuming units on the basis of the estimated average quantity of grain and other concentrates consumed per head of livestock. Factors used were adapted from (13). Coefficients used were 1.3 for horses, 1.0 for cows, 0.3 for cattle other than cows, 0.1 for sheep and goats, 0.7 for hogs, and 0.015 for poultry. Concentrates used included wheat, rye, barley, oats, mixed grains, corn, sorghum, and potatoes. Potatoes were converted to grain units at a factor of 1 kilogram equals 0.25 grain units.

Table 20.--Eastern Europe: Utilization of feed concentrates, 1955-67 1/

| Year | Bulgaria | Czecho-slovakia | East Germany | Hungary | Poland | Romania | Yugo-slavia | Total, Eastern Europe |
|---|---|---|---|---|---|---|---|---|
| | 1,000 tons | | | | | | | |
| 1955 | 1,641 | 4,099 | 4,097 | 3,692 | 6,505 | 5,572 | 3,070 | 28,676 |
| 1956 | 1,003 | 4,161 | 4,999 | 2,584 | 8,794 | 3,664 | 2,369 | 27,574 |
| 1957 | 1,877 | 4,186 | 5,549 | 4,847 | 10,114 | 6,841 | 5,690 | 39,104 |
| 1958 | 1,243 | 3,425 | 5,295 | 3,530 | 9,684 | 3,251 | 2,273 | 29,001 |
| 1959 | 2,266 | 4,542 | 5,380 | 4,742 | 10,800 | 6,140 | 6,245 | 40,115 |
| 1960 | 2,072 | 4,773 | 6,648 | 4,568 | 11,151 | 5,186 | 5,253 | 39,651 |
| 1961 | 1,756 | 4,218 | 4,050 | 3,778 | 14,232 | 5,262 | 4,007 | 37,303 |
| 1962 | 1,716 | 3,973 | 6,261 | 4,743 | 10,592 | 4,284 | 4,704 | 36,273 |
| 1963 | 1,955 | 4,656 | 5,315 | 4,404 | 13,892 | 4,867 | 5,383 | 40,472 |
| 1964 | 2,623 | 5,069 | 6,202 | 4,384 | 13,089 | 5,444 | 6,486 | 43,297 |
| 1965 | 2,117 | 4,052 | 6,328 | 4,422 | 13,719 | 5,873 | 5,741 | 42,252 |
| 1966 | 3,093 | 4,640 | 6,014 | 4,980 | 14,256 | 7,703 | 7,340 | 48,026 |
| 1967 | 2,904 | 4,944 | 6,758 | 4,716 | 15,080 | 6,006 | 6,645 | 47,053 |
| | Percent | | | | | | | |
| 1965 as a percentage of 1955 | 177 | 121 | 165 | 128 | 232 | 108 | 216 | 164 |

1/ Data are derived. Includes potatoes converted to whole grain equivalent. Methodological approach followed statistical techniques used in the construction of (2).

## Factors Influencing Feeding Practices

Although all countries have socialized major fixed capital holdings—farm machinery, large barns, and storage facilities—none has found a satisfactory way to socialize livestock holdings. A compromise position has been government acceptance of private livestock holdings by state and collective farmers. Statutes regulate the number of livestock that may be held, but because of the large number of households involved, the livestock and poultry held by peasant farmers on these small plots is still quite substantial. In 1967, 59 percent of the cattle, 68 percent of the

Table 21.--Eastern Europe: Total utilization of feed concentrates by type of feed, 1955-67 1/

| Year | Coarse grains | Wheat and rye | Potatoes 2/ | Total feed concentrates | Total feed grains | Percentage of total feed concentrates |
|---|---|---|---|---|---|---|
| | 1,000 tons | | | | | Percent |
| 1955..... | 21,790 | 2,683 | 4,203 | 28,676 | 24,473 | 85.3 |
| 1956..... | 17,282 | 3,505 | 6,787 | 27,574 | 20,787 | 75.4 |
| 1957..... | 25,237 | 7,170 | 6,697 | 39,104 | 32,407 | 82.9 |
| 1958..... | 17,664 | 5,797 | 5,540 | 29,001 | 23,461 | 80.9 |
| 1959..... | 25,464 | 8,845 | 5,806 | 40,115 | 34,309 | 85.5 |
| 1960..... | 25,409 | 7,583 | 6,659 | 39,651 | 32,992 | 83.2 |
| 1961..... | 22,716 | 7,943 | 6,644 | 37,303 | 30,659 | 82.2 |
| 1962..... | 23,970 | 6,343 | 5,960 | 36,273 | 30,313 | 83.6 |
| 1963..... | 25,120 | 7,701 | 7,651 | 40,472 | 32,821 | 81.1 |
| 1964..... | 26,863 | 8,298 | 8,136 | 43,297 | 35,161 | 81.2 |
| 1965..... | 25,885 | 9,581 | 6,786 | 42,252 | 35,406 | 83.9 |
| 1966..... | 29,142 | 10,780 | 8,104 | 48,026 | 39,922 | 83.1 |
| 1967..... | 27,832 | 10,936 | 8,285 | 47,053 | 38,768 | 82.4 |
| | | | Percent | | | |
| 1967 as a percentage of 1965... | 128 | 408 | 197 | 164 | 158 | |

1/ Data are derived. Methodological approach followed the statistical techniques used in (2).

2/ Converted to whole grain equivalent at a factor of 1 kilogram equals 0.25 grain units.

cows, 60 percent of the hogs, and 57 percent of the sheep were held by individual farmers or by members of collective farms on household plots (5, 7). Private ownership is most extensive in Poland and Yugoslavia, where collectivization has made the smallest inroads, and least widespread in Czechoslovakia.

Since household plots are too small to support livestock holdings, farmers have depended on their own ingenuity or on government willingness to supply feed from the socialized sectors. Sources of supply include payments in kind for labor performed on collective farms, purchases from other farmers, contractual agreements with the government, and illegal procurements. The many sources of supply do not necessarily imply an abundant availability of feed, rather they are more representative of a breakdown in the marketing and distribution system. A bumper harvest, moreover, influences the amount of feed fed in a single year since storage on household plots is too small to plan ahead. This observation is supported by the variable feeding rates in the late fifties and early sixties. Variability in feeding rates is less noticeable after 1964 (table 22).

Past government procurement programs also tended to widen the gap between available supply and market demand for all grains. In most countries the total planned procurement of wheat and rye was dictated by planned domestic consumption and foreign trade goals. The residual was left on farms. Only in recent years have governments actively started building storage facilities for carryover stocks that have accrued from successively good harvests.

Formerly, feed grain procurement programs were less rigid, but in poor harvest years feed grain was accepted as a substitute for wheat and rye. Since the allocation of grains is a state function, authorities attached more significance to meeting the needs of state-owned livestock enterprises producing meat for export than to the cooperatives and private farmers. Under these export-oriented programs, the potential hard currency earnings from livestock products became a more important policy decision than the need to use resources efficiently. Only Poland and Hungary fit this category in the late fifties and early sixties, but Bulgaria, Romania, and Yugoslavia have been included since 1964. Poultry exports have also become important and an expansion of the commercial broiler industry has been encouraged in Czechoslovakia, Bulgaria, and East Germany. Elsewhere in Eastern Europe the broiler industry is only beginning to develop. The largest share of poultry flocks in these countries is still held by farmers on private household plots where feeding is not controlled.

Information currently available does not suggest any strong policy directives that would affect private livestock holdings and ownership in the immediate future. But open discussions on economic reforms indicate there is a move to review livestock plans and programs more carefully. For example, goals for 1970 indicate a planned 16.5-percent increase in cattle numbers for Poland, but only small increases of 1.3 percent and 1.6 percent for Czechoslovakia and East Germany. Plans for hog

Table 22.--Eastern Europe: Grain concentrates fed per grain-consuming animal unit, 1955-67 1/

| Year | Bulgaria | Czecho-slovakia | East Germany | Hungary | Poland | Romania | Yugo-slavia | Total, Eastern Europe |
|---|---|---|---|---|---|---|---|---|
| | | | | Tons | | | | |
| 1955 | 0.473 | 0.550 | 0.395 | 0.527 | 0.341 | 0.594 | 0.316 | 0.446 |
| 1956 | .290 | .547 | .506 | .415 | .444 | .427 | .263 | .414 |
| 1957 | .499 | .551 | .563 | .744 | .512 | .830 | .603 | .606 |
| 1958 | .326 | .459 | .558 | .491 | .495 | .369 | .247 | .445 |
| 1959 | .571 | .589 | .529 | .734 | .524 | .684 | .570 | .601 |
| 1960 | .482 | .609 | .659 | .693 | .522 | .579 | .489 | .576 |
| 1961 | .410 | .541 | .392 | .551 | .660 | .560 | .384 | .534 |
| 1962 | .426 | .515 | .649 | .782 | .524 | .493 | .471 | .513 |
| 1963 | .487 | .610 | .502 | .653 | .658 | .556 | .509 | .610 |
| 1964 | .600 | .654 | .608 | .606 | .605 | .558 | .586 | .624 |
| 1965 | .505 | .556 | .615 | .699 | .618 | .621 | .573 | .587 |
| 1966 | .760 | .648 | .567 | .763 | .634 | .785 | .696 | .689 |
| 1967 | .703 | .680 | .640 | .673 | .674 | .585 | .612 | .661 |
| Average: | | | | | | | | |
| 1955-59 | .432 | .539 | .510 | .582 | .463 | .581 | .400 | .502 |
| 1960-64 | .481 | .586 | .562 | .657 | .594 | .549 | .488 | .571 |
| 1965-67 | .656 | .628 | .607 | .712 | .642 | .663 | .627 | .645 |
| | | | | Percent | | | | |
| Average 1965-67 as a percentage of average 1955-59 | 152 | 117 | 119 | 122 | 139 | 114 | 157 | 128 |

1/ Calculated from data in tables 19 and 20. Production of feed grain concentrates lagged 1 year relative to livestock numbers. Grains produced in 1955 were consumed in 1956 and so on.

numbers, alternatively, show a significant increase for Bulgaria—36.2 percent over the 1965 level—but a decline for Czechoslovakia and East Germany (1). These variable goals reveal an awareness by planners of the economic potential and available resources within each country, and imply an intent to improve farm efficiency.

Increasing the efficiency of feed inputs for existing livestock herds in Czechoslovakia and East Germany appears to transcend the past command concept emphasizing gains in numbers over gains in product output per unit of feed. Poland's plans also suggest that farmers should explore the possibilities of expanding roughage-consuming livestock more critically. In all countries commercial poultry production is expected to move ahead more rapidly in the seventies, and plans are to be coordinated more closely with the expansion of the commercial mixed-feed industry.

In the final analysis, the import demand for wheat and rye in Eastern Europe has been influenced by the erratic domestic production of all grains, by the growth of livestock herds, and by the favorable terms of trade for grain. When wheat and rye, have been imported under competitive arrangements, the decisions to import from the non-Socialist world under price competition had to be approved by a command decision before purchases could be made. In some instances, these imports were viewed in terms of the value-added gain of grain imports under favorable terms for exports in the form of meat; in others, there was an immediate short-term need or an actual shortage. But in reviewing the long-term trend of grain purchases for Eastern Europe, it is apparent that the major influence has been the government rather than the market.

Although there are current indicators of market-oriented programs that might change this pattern in some countries—Yugoslavia and, to a lesser degree, Hungary, Czechoslovakia, and Poland—the planning authorities' right to preempt the use of available hard currency and the establishment of a priority need for nonagricultural imports still preclude any sizable upward change in dollar sales of grain to Eastern Europe in the immediate future.

Long-term prospects for sales will also depend on: (1) the yet unrealized potential of the COMECON countries to maximize grain production; (2) the development of an internal consumer market for meats in countries which now have low per capita consumption levels of meat and currently export grain (Bulgaria, Romania, and Yugoslavia); and (3) the continued increase in the per capita income levels in all countries.[6]

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[6]COMECON (Council for Mutual Economic Assistance) was organized in 1949 to encourage economic cooperation among the Communist nations of Eastern Europe. There are eight permanent members: Bulgaria, Czechoslovakia, East Germany, Hungary, Mongolia, Poland, and Romania. Yugoslavia participates in some commissions, but is only an observer in others.

## DEMAND FOR NONGRAIN PRODUCTS

Concomitant with its long-term forward progress in economic growth and agricultural development, Eastern Europe has generated a steady demand for both complementary and supplementary agricultural products. Paradoxically, some of these commodities—feed supplements, vegetable oils and oilseeds, fibers, hides and skins, meat and meat products, tobacco, citrus fruits and other tropical products—too often have been overshadowed by the high priorities placed on the import demand for grains. The long-term upward shift in the total demand of these products may have been underestimated in terms of their value contribution to trade.

### Feed Supplements

Heading the supplementary list (partially competitive) of commodities are feed supplements. At present the main sources of plant protein feeds in Eastern Europe are clover, alfalfa, field peas, and the byproducts of the milling and vegetable oil industries—bran and oilseed cake and meal. While domestic production of these feeds is programed to expand through 1970, output in the midsixties has been erratic and the supply has been inadequate to meet the growing demands of the livestock sector. Imports of plant protein feeds over more than a decade of time reflect this shortcoming. Total East European imports of oilseed cake and meal, for example, increased from 78,300 tons in 1955 to 722,900 tons in 1966 (9). Major importers have been Czechoslovakia, Hungary, and Yugoslavia. Poland has recently increased imports substantially.

Animal protein feeds are also becoming more important in the feeding rations of livestock in Eastern Europe. Hogs, poultry, and calves are the heaviest users of these feeds. Currently all countries are deficient in animal protein feeds, such as fish meal, bone meal, blood meal, and dried milk. Bulgaria, Czechoslovakia, and Poland together produced only 63,000 tons of animal protein feeds in 1963. Plans call for an increase to 172,000 tons by 1970 (20).

A major objective of the supplemental feed program is to develop and expand the commercial production of mixed feed compounds. In all countries the industry is only beginning to grow, as indicated in the following comparison of 1963 production with that planned for 1970 (1, 11):

| | 1963 | Planned 1970 |
|---|---|---|
| | ---- 1,000 tons ---- | |
| Bulgaria | 498 | 2,800 |
| Czechoslovakia | 1,700 | 5,100 |
| Hungary | 965 | 2,000 |
| Poland | 1,100 | 4,200 |
| Yugoslavia | 1,800 | n.a. |

Production data for East Germany and Romania are not available, but it is believed that plant capacity has increased in both countries. At the present time alfalfa meal is the single most important domestic product that can be developed rapidly throughout Eastern Europe. But for the immediate short run, the higher costs of domestic production, the quality advantage of imports, the broad substitutability of products, and the wide dispersion of prices should keep imports of high protein feeds at current levels.

## Vegetable Oils and Seeds

The higher per capita consumption of vegetable oils noted in all countries except Hungary in table 14 suggests some movement away from animal fats since 1955. The strong consumer preference in Hungary for animal fats may be a cultural idiosyncrasy, but by using domestically produced animal fats, the Hungarian regime was able to export an average 20,300 tons of vegetable oils annually during 1961-66.

The rise in the consumption of vegetable oils is attributed to the expansion of domestic oilseed production and oil processing facilities in Bulgaria, Romania, and Yugoslavia, and to the increased use of vegetable oils as a substitute for animal fats in Czechoslovakia, East Germany, and Poland.

Imports of oilseeds and processed vegetable oil by Eastern Europe—principally Czechoslovakia, East Germany, Poland, and to a lesser degree Yugoslavia—show mixed trends since 1958. Oilseed imports dropped from 630,000 tons in the peak year of 1958 to an average of 449,000 tons through 1966 (9). Surprisingly, imports of processed vegetable oils held relatively steady—around 200,000 tons in all years after 1957 except 1963, when imports increased to 279,000 tons.

The decline in oilseed imports from the high level of 1958 to lower annual average imports is partially a response to the sharp curtailment of Chinese exports of soybeans and to the renewed emphasis on domestic production. The steady volume of processed oil imports is probably tied more closely to favorable trade agreements, to a shortage of processing capabilities in the importing countries, and to the lack of storage capacities in others.

A continued upward shift in the consumption patterns of edible vegetable oils can be predicted with reasonable certainty, but with domestic production of vegetable oils growing, the outlook for export opportunities is not favorable. Production of vegetable oils for nonfood uses is still relatively low, and it is possible that the market for industrial and nonfood vegetable oils may be better than that for food use.

## Fibers

Eastern Europe has a limited potential to develop and expand its raw material base for natural fibers. Cotton is the major natural fiber used

by the textile industry, and all countries meet their domestic consumer demands through imports. Processed textile products are a valuable export product for Czechoslovakia, Hungary, and Poland.

Total utilization of cotton in Eastern Europe increased from 400,000 tons in 1955 to 629,000 in 1967, a gain of 56 percent in 12 years. Imports accounted for approximately 97 percent of the total 1967 utilization; the USSR was the major supplier.

While the continued growth of the synthetic fiber industry in Eastern Europe will undoubtedly offer strong competition to natural fibers, long-range plans for selected countries indicate that natural fibers will still command a major share of the total textile output. For example, the share of natural fibers to the total textile output in 1958 was 81.1 percent in Bulgaria, 72.8 percent in Czechoslovakia, 82.3 percent in Hungary, 52.3 percent in East Germany, 73.3 percent in Poland, and 78.2 percent in Romania. But according to preliminary plans, by 1980 this percentage share will be reduced to 75 percent in Bulgaria, 49 percent in Czechoslovakia, 52.5 percent in Hungary, 48 percent in East Germany, 46 percent in Poland, and 60 percent in Romania (1).

## Hides and Skins

Imports of hides and skins by Eastern Europe show a hidden growth potential. Consumer demand for leather products is strong in the area, and in a few countries, particularly Czechoslovakia, Poland, and more recently Yugoslavia, processed leather goods and shoes are being exported for hard currency.

Eastern Europe's production of hides and skins has fluctuated considerably in recent years in both quantity and quality. In the long run, total output is dependent on livestock numbers, herd structure, slaughtering techniques, and tanning processes. Currently, the domestic supply of hides and skins does not meet the requirements of the leather processing industry. Imports make up the difference.

Annual area imports of all types of hides and skins (green or salted weight basis) for 1961-66 were approximately 160,000 tons. Rising imports in all countries reflect the continuing growth of the leather industry throughout the area.

## Meat, Tobacco, and Fruit

Import demands for meat and meat products, tobacco, and fruits, particularly citrus, have risen in response to higher consumer incomes. Currently, only East Germany and Czechoslovakia import substantial quantities of meats. Past imports by these two countries have ranged from a high of 235,000 tons in 1963 to a low of 124,000 tons in 1964. The Soviet Union is the major supplier.

Tobacco imports by East Germany, Czechoslovakia, Hungary, and Poland from 1955-67 are estimated at 62,000 tons a year (9). Imports of fruit, including citrus, are increasing steadily and should gain in importance as urbanization develops. Compared with 1963, Czechoslovakia and Hungary expect a threefold increase in imports of citrus fruits and juices by 1970 (12).

The growth in the demand for nongrain products in Eastern Europe reflects the rising living standards of the area. There is also a growing awareness among planners that many nongrain products can be obtained more cheaply through trade than through the uneconomic expansion of domestic production. In any evaluation of future demand opportunities for agricultural trade with Eastern Europe, particular attention should be given to the growing market for feed supplements, semiprocessed and processed food products, and raw materials for light industry as substitutes for the diminishing grain trade. There is too little evidence to draw firm conclusions about this pattern of trade, but the upward shift in the total value of trade and the static or near-static level of grain imports imply that the greatest recent growth in agricultural trade has been in nongrain products. This trend should continue into the future.

## AGRICULTURAL TRADE PATTERNS AND NEW DEVELOPMENTS

For more than a decade, 1955-67, the planned economies of the countries of Eastern Europe were identified as potentially strong importers of agricultural products and of grain in particular. Less importance was attached to the total value of all agricultural trade. But when imports and exports are examined critically in aggregative terms and related to economic growth since 1955, the market opportunities for a wide range of agricultural products in this area of the world take on a new dimension.

Eastern Europe's total agricultural imports in 1967 were $3.5 billion and exports $2.9 billion (table 23). Grains comprised about 25 percent of the imports and 21 percent of the exports. Compared with 1955, total agricultural imports in 1967 increased 111 percent; exports, 229 percent. But an even more significant economic indicator is the annual growth rate of GNP, compared with the annual growth rate of imports. The higher rate of the latter—6.4 percent—in contrast to 4.8 percent for the GNP—strongly implies an increasing dependence on agricultural imports for sustained economic growth in the area.[7]

Considerable variation in trade patterns exists among the countries of Eastern Europe (table 24). For example, exports increased faster than GNP in all countries, while imports increased faster in all countries except Czechoslovakia and Romania. In Czechoslovakia the

[7] Gross national product calculated in fixed prices.

Table 23.--Eastern Europe: Total trade, and agricultural share of trade, 1955 and 1967 1/

| Country | 1955 | | | | 1967 | | | |
|---|---|---|---|---|---|---|---|---|
| | Total imports | Total exports | Agri-cultural imports | Agri-cultural exports | Total imports | Total exports | Agri-cultural imports | Agri-cultural exports |
| | Million dollars | | | | | | | |
| Bulgaria | 250 | 236 | 30 | 143 | 1,560 | 1,490 | 170 | 774 |
| Czechoslovakia | 1,053 | 1,176 | 516 | 139 | 2,650 | 2,910 | 774 | 268 |
| East Germany | 1,173 | 1,278 | 375 | 38 | 3,420 | 3,450 | 1,060 | 104 |
| Hungary | 534 | 609 | 153 | 201 | 1,770 | 1,700 | 398 | 440 |
| Poland | 932 | 920 | 275 | 122 | 2,630 | 2,530 | 560 | 443 |
| Romania | 462 | 422 | 146 | 181 | 1,530 | 1,410 | 183 | 574 |
| Yugoslavia | 441 | 257 | 150 | 69 | 1,708 | 1,253 | 325 | 338 |
| Total, Eastern Europe | 4,845 | 4,898 | 1,645 | 893 | 15,268 | 14,743 | 3,470 | 2,941 |

1/ Data derived from the dollar value of imports and exports published in (18). Value of agricultural trade calculated from published percentage share of agricultural products in total value of imports and exports cited in respective country statistical yearbooks.

Table 24.--Eastern Europe: Comparative rates of growth of GNP and agricultural trade, 1955-67 1/

| Country | Annual rate of change for GNP 2/ | Annual rate of change for agricultural imports 3/ | Annual rate of change for agricultural exports 3/ |
|---|---|---|---|
| | Percent | | |
| Bulgaria | 7.1 | 15.5 | 15.1 |
| Czechoslovakia | 4.0 | 3.4 | 5.6 |
| East Germany | 4.0 | 9.0 | 8.7 |
| Hungary | 4.3 | 8.3 | 4.5 |
| Poland | 5.0 | 6.1 | 6.7 |
| Romania | 5.2 | 1.9 | 13.5 |
| Yugoslavia | 6.0 | 6.6 | 14.6 |
| Total, Eastern Europe | 4.8 | 6.4 | 10.4 |

1/ Compound rate of increase from 1955.
2/ GNP data for 1955 derived by linking indexes of GNP published in (14, 15).
3/ Derived from data in table 13.

lower rate of growth of agricultural imports is due more to the slowdown of economic activity in the early sixties than to success in achieving the policy goal of self-sufficiency. For Romania the low rate of increase for imports and high rate of increase for exports reflects the successful growth of agricultural production on the one hand and the decision to hold or restrict consumption on the other.

What appears most significant in the comparison of rates of change in the GNP and agricultural trade in Eastern Europe is the clear evidence that both economic indicators exhibit continued strength. More specifically, growth in trade since 1955 has occurred despite the restrictions placed on that trade by the governments of East Europe and their trading partners. However, the aggregated data obscures the shift in the commodity composition of agricultural trade and the move toward specialization in countries with a comparative advantage.

Two preliminary judgments can be made about the causes for the changing role of agricultural trade in Eastern Europe since 1955. First, most countries are filling an increasingly large share of basic agricultural requirements from indigenous production (which affects imports); and second, the growth of agricultural exports is related to the limited alternatives to earn hard currency for industrial expansion (which affects the level of living).

Bulgaria, Hungary, Romania, and Yugoslavia are the most aggressive exporters of agricultural products in Eastern Europe. Each year between 1955 and 1967 agricultural exports contributed 25 percent or more of the total value of all exports. With the exception of Hungary, agriculture dominates the economy of these countries and per capita incomes rank among the lowest in the area. Hard currency earnings from the export of agricultural commodities provide a substantial share of the capital needed to expand economic development.

Since 1960, all four countries have introduced major action programs to expand agricultural exports. All drives coincided with plans to increase the production of grains, fruits, vegetables, and oilseeds—commodities which reflect the comparative advantage that these countries have over others in the area.

Significantly, in all four countries gains in the production of basic agricultural commodities and the subsequent higher priority placed on complementary agricultural product imports in recent years have resulted in increased imports of processed foods, textile raw materials, citrus fruits, and feed additives. This development suggests a modest but progressive response to rising incomes and consumer demand.

In Poland, the percentage share of agricultural imports and exports has varied with policy shifts. From 1956 through the early 1960's, the percentage share of imports declined while that of exports increased. About 1962, a decision was made to accelerate the livestock sector by importing cheap grains and exporting high value meat products to pay for the grain. This policy resulted in more meat per capita, but the concomitant decline in the percentage share of agricultural exports posed serious questions about the economic feasibility of this program. A review of the costs of grain imports relative to the costs of increasing domestic production was undertaken in the midsixties. In response to these findings, Poland initiated an action program to improve self-sufficiency in grain as the first step in reducing grain imports while continuing to export meat products.

East Germany and Czechoslovakia are major importers of agricultural commodities. The value of these imports ranges from $800 million to $1 billion a year. In both countries, however, the percentage share of agricultural trade to total trade has declined or remained static. Between 1955 and 1967, Czechoslovakia showed a decline in the percentage share of agricultural imports from 49 to 29 percent; East Germany's share dropped from 32 to 31 percent (table 25). While Czechoslovakia and East Germany rank highest in per capita GNP among the East European countries, both have resource limitations and depend on imports to show a rise in the level of living.

The relatively static percentage share of agricultural imports in East Germany, compared with total imports, reflects both an increase in the amount of high-value agricultural products and a sustained level

Table 25.--Eastern Europe: Value of agricultural trade as a percentage of total trade, 1955 and 1967 1/

| Country | 1955 | | 1967 | |
|---|---|---|---|---|
| | Imports | Exports | Imports | Exports |
| | Percent | | | |
| Bulgaria | 12.0 | 60.4 | 10.9 | 49.8 |
| Czechoslovakia | 49.0 | 11.8 | 29.2 | 9.2 |
| East Germany | 2/32.0 | 2/ 3.0 | 2/31.0 | 2/ 3.0 |
| Hungary | 28.7 | 33.0 | 22.5 | 25.9 |
| Poland | 29.5 | 13.3 | 21.3 | 18.1 |
| Romania | 31.5 | 43.0 | 12.0 | 40.7 |
| Yugoslavia | 34.0 | 27.0 | 19.0 | 27.0 |
| Total, Eastern Europe | 34.0 | 18.2 | 22.7 | 19.9 |

1/ Agricultural trade includes food and feed products, including semiprocessed raw materials, live animals, fibers, hides and skins, tobacco, fats and industrial vegetable oils.
2/ Preliminary estimates.

of imports for basic products. And this high percentage share was maintained despite an increase in agricultural output and a decline in population. For Czechoslovakia, the decline in agricultural imports coincided with a low level of agricultural production, suggesting that the composition of agricultural trade could have accounted for the sharp change relative to total trade. One major policy shift affecting imports was the command decision to slow down the development of light industry--a heavy user of nonfood agricultural products.

Future trade policy of Czechoslovakia and East Germany is difficult to evaluate. Both countries are the chief beneficiaries of the unrealistic command price system that favors industrial exports over raw material imports within the COMECON countries (14). Under these advantageous trading arrangements, it is doubtful that either country would press for greater agricultural self-sufficiency. But if the Soviet Union--the primary supplier--should increase the price of agricultural commodities, then it is possible that both countries may seek out new trading partners, expand production, or both.

## Agricultural Imports and Economic Priorities

Agricultural trade decisions in Eastern Europe are still guided by the need to export low-value raw materials to earn capital for industrial expansion. A universal response to this policy has been the strong effort to expand agricultural trade with hard currency areas. However, the built-in restrictions of the command economies--pricing by fiat, inconvertibility of foreign exchange, and limited credit--in effect have countered any economic advantages gained from improved efficiency and

production of quality agricultural products in recent years. Operating under these command restrictions, a substantial part of agricultural trade is conducted on a bilateral or negotiated basis and the real objective, capital earnings, has only been partly fulfilled.

Under this system, the growth of agricultural trade has depended on the willingness of governments to negotiate exchanges at some economic disadvantage for political expediency or to accommodate to temporary situations to capitalize on the long-term potential. Since bilateral accounting usually includes some price agreement that may be economically disadvantageous for one of the trading partners, there is considerable risk in trying to perpetuate this sort of trading arrangement. Swing credits and long-term credits at low interest rates are used in some instances to adjust to a shortage in a single year or in a series of years. Trade under these conditions usually involves the willingness to accept a short-term loss for one of the trading partners in anticipation of long-term gains.

Because of the limited economic capabilities or, alternatively, the shortage of hard currency, the total value and volume of agricultural trade has been greater between the command economies of Eastern Europe and other members of COMECON than with nations outside this consortium. Moreover, there has been a universal dependence on the USSR as the major supplier of agricultural imports.

In the decade of the sixties, all East European countries began to note seriously the advantages of multilateralism. Poland and Yugoslavia became active and participating members of the General Agreement on Tariffs and Trade (GATT). Romania and Hungary applied for admission to GATT, and Bulgaria gained observer status. Czechoslovakia, although a charter member of GATT, is not accorded most-favored-nation treatment (MFN) by the United States.

To increase and to prepare for the future growth of agricultural trade within the COMECON framework and outside, the member countries of COMECON in 1964 established the International Bank for Economic Cooperation (16). The clearing currency of the bank is the transferrable ruble which has the same value as the domestic ruble in the USSR. But both rubles still suffer from the same weakness in that they cannot be converted to gold or other convertible currency.

Convertibility along with broader accessibility to most-favored-nation treatment under GATT membership thus represents the key links for a further expansion of agricultural trade in Eastern Europe. Without convertibility, trade with Western nations is restricted to product exchanges under barter, bilateral agreements, or on the availability of favorable credits. In all cases, the volume of trade cannot increase at progressively rapid rates because of the limited world interest in the type or quality of goods sold by the command economies. Without full GATT membership, MFN treatment given to the command economies that are not members is of questionable value, since the reductions in tariffs may be applicable to commodities that are of no interest to nonmember countries. Under present arrangements, the Soviet Union is

the United States' most formidable competitor for Eastern Europe's agricultural market. Food and feed grains head the list of Soviet exports to the area, followed by cotton and oilseeds.

The Soviet Union's primacy as a supplier of agricultural products has been tested and has shown weakness over time. Data for successive 6-year periods between 1955-66 indicate that the East European countries actually purchased less wheat and cotton from the Soviet Union than from other major world suppliers (table 26). The relative percentage share of feed grain and oilseed purchases from the United States increased for the period.

The declining share of wheat imports from the USSR during 1960-66 is mainly attributed to the sharp downturn of grain production in the Soviet Union in 1963 and 1965 and the subsequent effort by the Soviet Government to build up stocks. The downward shift in cotton purchases from the Soviet Union may be attributed in part to favorable bilateral agreements with other cotton-producing countries, many of which have little else to exchange, and the willingness of these countries to accommodate to mutually acceptable product exchanges with the countries of Eastern Europe.

While the noted shifts in commodity trade away from the Soviet Union have been short lived, they are significant because they have opened up opportunities to trade in an area that has long been closed. Not to be overlooked is the fact that of the commodities listed in table 26, only oilseed imports declined during 1955-66. Sugar imports, for example, increased 209 percent; cotton, 34 percent; grains, 25 percent; and tobacco, 22 percent. More importantly, the total value of trade for the period increased 111 percent. This growth potential of Eastern Europe points up the need to explore marketing opportunities for a wider selection of agricultural products.

## Future East European Agricultural Trade Opportunities

Grain trade opportunities in Eastern Europe were viewed optimistically in the early sixties. In subsequent years, when Soviet and East European grain production increased, interest waned in the area as a market for expanding grain trade. This heavy emphasis on a single commodity—grain—is perplexing in a trading area that imports more than $3 billion in agricultural products annually, only one-fourth of which are grains.

In reevaluating agricultural market opportunities in Eastern Europe, serious consideration should be given not only to the sale of primary agricultural products such as grains and cotton, but also to the growing demand for feed supplements, processed and semi-processed products, and raw materials used in light industry. Of importance also, but frequently overlooked, is the need to implement new concepts for expanding trade or at least to adjust to the shifting patterns of agricultural trade that have developed in this part of the world.

Table 26.--Eastern Europe: Major agricultural imports and percentage supplied by USSR, United States, and other sources

| Commodity | Unit | Average 1955-60 | | | | Average 1961-66 | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Total | USSR | USA | Other | Total | USSR | USA | Other |
| Wheat and rye..... | 1,000 tons | 5,163 | 3,491 | 1/1,113 | 559 | 5,997 | 2,658 | 1,400 | 1,939 |
| Do..... | Percent | 100 | 68 | 22 | 11 | 100 | 45 | 23 | 32 |
| Coarse grains..... | 1,000 tons | 1,529 | 580 | 1/347 | 602 | 2,421 | 1,006 | 530 | 885 |
| Do..... | Percent | 100 | 38 | 23 | 39 | 100 | 42 | 22 | 36 |
| Rice..... | 1,000 tons | 232 | 0 | 0 | 232 | 284 | 0 | 8 | 276 |
| Do..... | Percent | 100 | 0 | 0 | 100 | 100 | 0 | 3 | 97 |
| Oilseeds..... | 1,000 tons | 2/565 | 2/27 | 2/7 | 531 | 369 | 32 | 34 | 303 |
| Do..... | Percent | 100 | 5 | 1 | 94 | 100 | 9 | 9 | 82 |
| Cotton..... | 1,000 tons | 442 | 256 | 43 | 143 | 595 | 301 | 54 | 240 |
| Do..... | Percent | 100 | 58 | 10 | 32 | 100 | 51 | 9 | 40 |
| Tobacco..... | 1,000 tons | 54 | 3 | 0 | 51 | 66 | 4 | 1 | 61 |
| Do..... | Percent | 100 | 6 | 0 | 94 | 100 | 0 | 1 | 99 |
| Sugar..... | 1,000 tons | 231 | 4 | 0 | 227 | 715 | 47 | 0 | 668 |
| Do..... | Percent | 100 | 2 | 0 | 98 | 100 | 7 | 0 | 93 |

1/ Average 1956-60.
2/ Average 1958-60.
3/ Raw value, International Sugar Council.

It appears equally important to examine the commodity exports of Eastern Europe, particularly those which could influence import opportunities. For example, meat and livestock products are exported by nearly all countries, but the major exporter is Poland, followed by Hungary and Yugoslavia. Romania and Yugoslavia are presently exporters of grains, particularly feed grains to the West, but both are active in developing export markets for meat. Czechoslovakia is also interested in expanding its trade of canned hams and considers this product a potential earner of hard currency. Any short-term view of grain trade opportunities with East European countries should recognize that an important part of this grain or feed supplement trade is used to produce meat and livestock products for export.

Other major commodities which earn hard currency, apart from feed grain exports of Romania and Yugoslavia, are fresh fruits and vegetables, sugar, and tobacco. Bulgaria, Romania, and Hungary export fruits and vegetables. Czechoslovakia, East Germany, and Poland export sugar, and Yugoslavia and Bulgaria export tobacco.

The capability to export on a continuing basis and the slow but growing shift in import demand from bulk agricultural products to high-value products is only beginning to develop in Eastern Europe. In the early 1960's, grain imports were more closely associated with domestic production. After poor harvests, countries looked for long-term credits to finance the imports needed to prevent a decline in the standard of living. Short- and medium-term credits for grain purchases, ranging from 18 to 60 months at interest rates of 6 percent, were granted by France and Canada after 1963. The favorable terms granted by the United States under P.L. 480 to Poland through 1964, and to Yugoslavia through 1966, also acted as a buffer against grain shortfalls.

With the growth of storage facilities and the continued higher production of grain crops, there has been less need for emergency short-term credits for grains. The curtailment of P.L. 480 funds to Poland and Yugoslavia for grain purchases has also encouraged these countries to reappraise their agricultural programs and to move toward achieving self-sufficiency in grain. Trade opportunities in Eastern Europe at the end of the sixties, therefore, were less favorable for grains, but there still appears to be an untested market for nongrain products, particularly raw materials used for commercial feeds and the food processing, textile, and leather industries.

## U. S. AGRICULTURAL TRADE OPPORTUNITIES

U.S. exporters have developed considerable interest in accelerating agricultural trade with East European countries since the early sixties. Much of this interest has stemmed from the sharp upturn in grain purchases by Eastern Europe after the poor harvest of 1963. The continued purchase of grain from Western sources, particularly feed grain, has stimulated further commercial interest in the long-term market opportunities in this area of the world.

Despite this interest the U.S. share of Eastern Europe's agricultural trade has remained small, averaging less than 8 percent of the total during 1960-67. In years when trade was conducted under favorable noncompetitive arrangements of P.L. 480, the volume was larger. Only Poland and Yugoslavia qualified for purchases under these terms and the commodity composition was also heavily weighted by grains.

## Recent Commodity Patterns

Grain amounted to 57.3 percent of the total value of U.S. agricultural trade with Eastern Europe during 1960-67 (table 27). Poland and Yugoslavia accounted for 90 percent of the total grain sales, and 83 percent of the total agricultural sales. But with the expiration of P.L. 480 eligibility, total agricultural sales have tended to taper off.

Poland's grain purchases dropped from $70 million in 1964 to only slightly more than $2 million in 1965, the year P.L. 480 agreements terminated. In subsequent years, purchases improved from this low level, but grain sales remained considerably below the high marks of $100 million and $70 million reached in 1960 and 1962. In Yugoslavia, grain purchases declined from $80 million in 1966 to $21 million in 1967 following the phase out of P.L. 480 (4). Other factors influenced Yugoslav purchases in 1967, but the favorable terms and payments under P.L. 480 undoubtedly had a key role in perpetuating the sale of U.S. agricultural commodities to both Yugoslavia and Poland.

The lesser share of U.S. sales, approximately 17 percent a year from 1960 to 1967, was distributed among five countries—Bulgaria, Czechoslovakia, East Germany, Hungary, and Romania. U.S. sales to these countries averaged less than 9 percent during 1960-64, but increased to 27 percent (worth $52 million) from 1965 to 1967 (tables 28 and 29).

While this is not an impressive record from which to make optimistic judgments about U.S. agricultural trade under competitive conditions, it should be noted that all of this trade has been on a strict commercial basis and that payments have been prompt. In addition, the commodity purchases have been diverse rather than uniform, reflecting an awareness of changing market prices as well as some response to demand. Many of the commodities purchased, such as soybean meal, hides and skins, and seeds, are noncompetitive products and represent a true trade potential rather than a shortrun need.

But the growth of partly competitive commodity exports has been slow in recent years, and it is unlikely that the United States can hold more than a fixed percentage share of the existing market. Grain is still the major commodity sold to Eastern Europe by the United States, despite the sharp cutbacks in sales to Poland and Yugoslavia. Since 1965, East Germany has also purchased successively larger amounts of grain, primarily feed grains. The fact that Czechoslovakia has imported feed grains in years of poor potato harvests lends some support for examining this market more critically.

Table 27.--Eastern Europe: Value, average, and percentage share of U.S. commodity exports, 1960-67

| Year | Total value of exports | Food grains | Feed grains | Oil-seeds | Oilseed cake and meal | Vegetable oils | Animal fats and oils | Dairy products | Cotton | Tobacco | Hides and Skins | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Million dollars | | | | | | | | | | | |
| 1960..... | 167.5 | 86.1 | 24.5 | neg. | 0.7 | 11.6 | 4.0 | 5.7 | 27.3 | 1.4 | 2.3 | 3.9 |
| 1961..... | 158.6 | 81.3 | 4.4 | 4.7 | 0.2 | 14.9 | 6.9 | 4.3 | 32.4 | 1.6 | 4.1 | 3.8 |
| 1962..... | 177.2 | 82.6 | 18.9 | 1.9 | 1.6 | 16.6 | 4.8 | 3.6 | 35.7 | 1.1 | 2.2 | 8.2 |
| 1963..... | 252.3 | 134.3 | 39.6 | 6.5 | 5.4 | 7.2 | 8.8 | 7.9 | 27.5 | 3.4 | 1.1 | 10.6 |
| 1964..... | 266.5 | 114.0 | 20.6 | 8.3 | 12.9 | 23.4 | 12.8 | 12.2 | 45.2 | 3.7 | 1.6 | 11.8 |
| 1965..... | 176.8 | 65.8 | 22.6 | 11.2 | 12.4 | 12.7 | 12.0 | 8.5 | 17.3 | 1.7 | 7.3 | 5.3 |
| 1966..... | 231.7 | 91.6 | 54.1 | 3.1 | 13.7 | 7.0 | 3.6 | 1.0 | 32.7 | 2.8 | 17.7 | 4.4 |
| 1967..... | 143.8 | 25.6 | 36.5 | 3.6 | 26.9 | 12.6 | 2.5 | 2.2 | 9.6 | 2.6 | 8.9 | 12.8 |
| Average: 1960-67 | 196.8 | 85.2 | 27.6 | 4.9 | 9.2 | 13.3 | 6.9 | 5.7 | 28.5 | 2.3 | 5.6 | 7.6 |
| | Percent | | | | | | | | | | | |
| Percentage share 1/ | 100 | 43.3 | 14.0 | 2.5 | 4.7 | 6.8 | 3.5 | 2.9 | 14.5 | 1.2 | 2.8 | 3.8 |

1/ Based on average 1960-67.

Table 28.--Eastern Europe: Percentage distribution of U.S. agricultural exports by country, 1960-67

| Year | Total value | Poland | Yugoslavia | Other countries |
|---|---|---|---|---|
| | Percent | | | |
| 1960 | 100 | 78.3 | 20.3 | 1.4 |
| 1961 | 100 | 40.3 | 54.6 | 5.1 |
| 1962 | 100 | 47.7 | 48.8 | 3.5 |
| 1963 | 100 | 40.1 | 48.3 | 11.6 |
| 1964 | 100 | 47.7 | 35.5 | 16.8 |
| 1965 | 100 | 14.9 | 58.3 | 26.8 |
| 1966 | 100 | 19.3 | 51.0 | 29.7 |
| 1967 | 100 | 33.7 | 37.9 | 28.4 |

It is noteworthy that East Germany and Czechoslovakia not only purchase substantial quantities of grain, but they are also the leading importers of all types of agricultural products (valued at approximately $800 to $1,000 million a year). Neither country is likely to become agriculturally self-sufficient. Future opportunities for agricultural sales also favor Czechoslovakia and East Germany over the traditional importers, Poland and Yugoslavia, because of higher per capita incomes and potential export earnings from industrially produced goods.

While these economic criteria are important in viewing trade with Eastern Europe, access to credit is essential since hard currency reserves are small and sales on a strictly cash basis would act as an impediment to timely purchases. Credit sales under terms of the Commodity Credit Corporation (CCC) actually accounted for 42 percent of all agricultural sales to Eastern Europe in 1967 (excluding East Germany). This compares with 15 percent of sales in 1966, and only small CCC sales to Poland in 1963 and 1964. This sharp upturn suggests that commercial credit can be an effective stimulant to trade in this area of the world, particularly if the terms are competitive.

## The Impact of Economic Reform

More than the immediate need for credits is the priority need to review the economic changes in the foreign trade policy decisions that have developed in Eastern Europe since 1965, the existing impediments to trade with Eastern Europe, and the trade programs of other U.S. competitors.

Eastern Europe has been experimenting with economic reforms seriously since the midsixties, and many of the reforms now in effect

Table 29.--Eastern Europe: Value and country distribution of U.S. agricultural exports, 1960-67

| Year | Total value of exports | Bulgaria | Czecho-slovakia | East Germany | Hungary | Poland | Romania | Yugo-slavia |
|---|---|---|---|---|---|---|---|---|
| | Million dollars | | | | | | | |
| 1960..... | 167.5 | 1/ | 0.7 | 1.0 | 0.5 | 131.1 | 0.1 | 34.1 |
| 1961..... | 158.6 | 1/ | 4.3 | 2.6 | .9 | 63.9 | .3 | 86.6 |
| 1962..... | 177.2 | 1/ | 3.9 | 1.7 | .4 | 84.5 | .3 | 86.4 |
| 1963..... | 252.3 | 0.09 | 5.7 | 6.1 | 17.4 | 101.1 | .1 | 121.8 |
| 1964..... | 266.5 | 4.4 | 8.5 | 16.0 | 13.9 | 127.1 | 2.0 | 94.6 |
| 1965..... | 176.8 | 2.5 | 23.6 | 10.9 | 8.0 | 26.4 | 2.4 | 103.0 |
| 1966..... | 231.7 | 1.7 | 32.0 | 21.0 | 7.7 | 44.7 | 6.4 | 118.2 |
| 1967..... | 143.8 | 3.0 | 9.2 | 22.3 | 4.4 | 48.5 | 1.9 | 54.5 |

1/ = $50,000 or less.

are conducive to the growth of East-West trade. Although the new economic programs vary from country to country, they may be characterized as cautious in Romania and Bulgaria, more market-oriented in Hungary and Czechoslovakia, and liberal in Yugoslavia. In all instances the programs suggest a lifting of command restraints imposed too long by past political decisions.

One feature of the reforms is the greater independence of farm managers in decisionmaking about the goals, output, and sale of products under their control. In some instances, farm and processing enterprises are permitted to engage in foreign trade operations independently of the state trading organizations. This policy is expected to encourage imports based on competitive prices and to promote exports based on product marketability. There appears to be a greater opportunity for repeat sales and purchases under these reform programs.

## Trade Policy Restrictions

From the point of view of U.S. exporters, the present domestic impediments and restrictions placed on trade probably are a major cause for the hesitancy to participate in programs to expand agricultural exports. The cargo preference restriction, for example, which requires that 50 percent of U.S. wheat cargoes destined for Bulgaria, Czechoslovakia, East Germany, and Hungary must be carried on U.S. ships, adds to the cost per ton of shipment and makes U.S. wheat more expensive relative to other competitors. Feed grains do not have the same cargo restrictions, but if feed grain is shipped to Eastern Europe on foreign flagships, part of the cargo must be first offloaded in a West European or Mediterranean country. (Yugoslavia is included in the latter category).

U.S. wheat and feed grain exports to Poland, Romania, and Yugoslavia are not subject to these rigid shipping restrictions. Exports to these countries may move freely on foreign flagships subject only to the qualification that neither Poland nor Romania may be the recipient of a "part cargo" of feed grains that is destined to other East European countries. At the present time, Poland is the only country among the group that is importing commercial quantities of grain from the United States.

Validated licenses for shipments of selected agricultural commodities are also required for all countries except Czechoslovakia, Poland, Romania, and Yugoslavia. Applications for licenses are easily obtained, and it is rare that a license for the export of agricultural products is refused. However, the existence of this small impediment may discourage interest by some firms.

American exporters are also exposed unnecessarily to actual or implied policies of some East European countries imposing trade restrictions on U.S. products. These restrictions currently are not considered a serious hindrance, but rather a nuisance or a political attempt to point up the slow response of the United States to East-West trade overtures.

Hungary currently gives a preference to countries that extend MFN treatment. This policy in effect places U.S. exporters at a disadvantage.

The Czechoslovak position is presently guided by the severe shortage of hard currency. The surcharges on nonpriority items, many of which are agricultural, may result in the loss of some trade with Czechoslovakia. While special relief features are available to Poland and Yugoslavia because of their GATT membership, the imposition of surcharges, or flexible import taxes, by Yugoslavia appears to go beyond the rules of GATT and could affect the sale of U.S. agricultural products to that country.

From the East European point of view, the lack of MFN treatment for Czechoslovakia (a member of GATT), Bulgaria, East Germany, Hungary, and Romania places the exports of these countries at a competitive disadvantage in the U.S. market, and reduces their potential dollar-earning capacity. This current policy position to withhold MFN for bargaining purposes has made negotiations difficult for U.S. traders.

Probably more important than MFN to U.S. traders of agricultural products are Western Europe's shortcuts to the East European market. For example, the Interzonal Trade Agreements between East and West Germany allow for exchanges that do not follow the pattern of trade under competitive conditions. Western Europe's close ties with Eastern Europe, moreover, add a hidden strength in negotiating on a strict commodity exchange. But interested U.S. traders with an accurate assessment of needs, the capability to adjust to restrictions, and credit availabilities in hand could strengthen their position to compete effectively in this area of the world.

## An Overall Perspective

Eastern Europe's long-term growth of agricultural trade and production suggests that future expansion is likely in some areas while serious limitations exist in others. The position of the United States in the future agricultural trade of Eastern Europe is difficult to assess because of uncertainty about (1) the future development of U.S. trade policy with these countries, (2) the development of trade policies in Eastern Europe and the USSR, and (3) the pace of economic reforms and political changes in these countries. Finally, the full range of agricultural commodities that could be traded with East European countries is still to be determined.

While grain has been the predominant export interest of the United States and other Western grain producers, there has been some slowdown in total grain exports to Eastern Europe. There is no strong evidence, however, that the area has reached a point of self-sufficiency.

Distinct economic differences exist in the agricultural capabilities of each country. For example, rapid increases in grain production occurred in the southern half of Eastern Europe—Bulgaria, Romania, Hungary, and Yugoslavia—where imports (except for Yugoslavia) have been uneven over time. These countries are likely to continue as net grain exporters. In the northern half of the area—Czechoslovakia, East Germany, and Poland—grain production has also increased but at a less rapid rate. Along with this increase in production, the countries in the

northern half of the area have been consistently large importers of grain, and are likely to continue these imports. This grain market in northern Eastern Europe is supplied for the most part by the USSR, and the current close economic ties with the Soviet Union preclude easy access to the market.

Economic dependency on the Soviet Union exists not only for grains, but also for cotton, oilseeds, meat, butter, and other food items. Moreover, it applies to all countries in Eastern Europe except Yugoslavia. Future agricultural trade opportunities with Eastern Europe therefore will be influenced by the production changes and trade posture of the USSR as well as the economic changes that emerge in each country. These would include the growth of income, the shifts in consumption patterns, the development of some form of convertibility for foreign exchange, and the comparative advantage positions that may emerge. Sizable shortrun changes in import demands may occur with agricultural production fluctuations in the USSR.

Detailed studies of the market potential for individual commodities are needed, and a closer look should be taken to determine how U.S. agricultural exporters can operate more effectively within the framework of existing trade constraints and the competition of the USSR and other countries. Before final judgments are made about trade opportunities in the region, a closer look should be taken at the type of agricultural commodities that East European countries are likely to export to the United States if greater flexibility in trade does develop.

This study points out that Eastern Europe's 120 million people are becoming richer year by year (they already represent a $3 billion agricultural market), and that the region is both a potential market for, and a competitor with, the United States in the area of agricultural trade. Imports of primary agricultural products are likely to remain strong for East Germany and Czechoslovakia, but for the area as a whole imports of agricultural products that complement production should be dominant. Competition for this market is likely to become keener as economic and political restraints impeding trade are lifted.

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