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Poland

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NATIONAL INTELLIGENCE SURVEY

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Poland

CONTENTS

This chapter supersedes the economic coverage in the General Survey dated September 1970.

A. Basic trends	1
B. Structure of the economy	2
1. Agriculture, fisheries, and forestry	4
a. Agriculture	4
b. Fisheries	5
c. Forestry	9
2. Fuels and power	8
a. Hard coal and coke	8
b. Brown coal	10
c. Petroleum and natural gas	10
d. Electric power	11
3. Metals and minerals	12
a. Ferrous metallurgy	12
b. Nonferrous metallurgy	13
c. Nonmetallic minerals and construction materials	14

SECRET

NO FOREIGN DISSEM

	<i>Page</i>		<i>Page</i>
4. Manufacturing and construction	15	4. Economic reform	25
a. Machine building	15	5. Manpower	26
b. Chemicals	17	D. Foreign trade	27
c. Light industry	18	1. Size and structure	27
d. Food processing	19	2. Economic relations with Communist countries	29
e. Construction	19	3. Economic relations with the West	30
5. Domestic trade	20	a. Background	30
C. Economic policy and management	21	b. Plans	31
1. Policy	21	4. Balance of payments	33
2. Economic planning and administration ..	23	a. Communist countries	33
3. Finance	24	b. Industrial West	34
		5. Organization	34

FIGURES

	<i>Page</i>		<i>Page</i>
Fig. 1 Supply position of selected basic materials (<i>table</i>)	2	Fig. 13 Mining and industrial centers (<i>map</i>) ..	12
Fig. 2 Indexes of GNP, industrial produc- tion, and agricultural production (<i>chart</i>)	3	Fig. 14 Output of metals, minerals, and construction materials (<i>table</i>)	13
Fig. 3 Output, employment, and fixed capital (<i>table</i>)	3	Fig. 15 Production of machinery and equipment (<i>table</i>)	16
Fig. 4 Volume indexes of output in selected branches of socialized industry (<i>table</i>)	4	Fig. 16 Production of principal chemicals and chemical products (<i>table</i>)	18
Fig. 5 Land utilization (<i>chart</i>)	4	Fig. 17 Distribution of investments, by economic sector (<i>table</i>)	22
Fig. 6 Production and yields of principal crops (<i>table</i>)	5	Fig. 18 Distribution of investments in socialized industry (<i>table</i>)	22
Fig. 7 Livestock and livestock products (<i>table</i>)	5	Fig. 19 Economic indicators (<i>table</i>)	23
Fig. 8 Number and size of private farms and plots (<i>table</i>)	6	Fig. 20 Estimated labor force (<i>table</i>)	26
Fig. 9 Threshing of grain by private Polish farmers (<i>photo</i>)	7	Fig. 21 Geographic distribution of foreign trade (<i>chart</i>)	27
Fig. 10 Private farm market in Poland (<i>photo</i>)	7	Fig. 22 Value of foreign trade (<i>table</i>)	28
Fig. 11 Land-use pattern (<i>map</i>)	9	Fig. 23 Commodity structure of foreign trade (<i>chart</i>)	28
Fig. 12 Production of fuels and power (<i>table</i>)	10	Fig. 24 Commodity structure of foreign trade (<i>table</i>)	30
		Fig. 25 Selected commodity trade with non- Communist countries (<i>table</i>)	31

The Economy

A. Basic trends (C)

Poland is the largest of the East European Communist countries.¹ At the end of 1972 it had a population of 33.3 million people and a land area of 120,600 square miles—slightly smaller in area than Pennsylvania, Ohio, and Kentucky combined, but with a population density approximately equal to that of Pennsylvania and Ohio. The economy has grown rapidly throughout the post-World War II period, and it is now in an intermediate stage of development—much less advanced than the economies of France and West Germany but far ahead of those of Mexico and Brazil. The Polish economy is unique among the economies of Communist Eastern Europe in its retention of a private agricultural sector.

Poland's gross national product (GNP) amounted to US\$54.6 billion in 1972 (1971 prices). In terms of GNP per capita, Poland ranks behind all industrialized West European countries, and it is only moderately well-off by Communist standards. Poland's per capita GNP of US\$1,650 in 1972 was not significantly different from those of Bulgaria (\$1,620), Hungary (\$1,700), and Romania (\$1,470), but well below those of Czechoslovakia (\$2,540) and East Germany (\$2,650). The most nearly comparable West European per capita GNP was in Ireland, with a per capita GNP in 1972 of about \$1,740. Per capita GNP in the rest of Western Europe, except for Spain, Portugal, and Greece, was much greater.

The difference in standards of living in Poland and in Western Europe is even greater than the difference between levels of per capita GNP. In its efforts to achieve rapid industrial development, Poland's Communist government has devoted a larger share of the national product to investment than is generally the case in Western countries, leaving a correspondingly smaller share for consumption. In 1971, about 30% of Poland's GNP went into investment and another 20% went into government services,

¹Throughout this chapter, references to Communist Eastern Europe refer to the group of countries encompassing Bulgaria, Poland, Czechoslovakia, East Germany, Hungary, and Romania.

administration, and defense. Personal consumption, which accounts for more than 60% of GNP in most Western countries, accounted for only 50% in Poland. Even though the government has directed a larger proportion of the country's resources to investment throughout the postwar period, there has also been some growth in consumption.

In spite of its dependence on imports for a number of important industrial materials, Poland's raw material base, on balance, has been a positive factor in its postwar industrial growth. The country is poor or entirely lacking in iron ore, petroleum, manganese ore, potash, phosphate rock, and cotton, and must import the bulk of its supplies of those materials (Figure 1). Poland also imports large quantities of grain, which it uses to a large extent to expand its livestock production; livestock products are a major source of foreign exchange. The pattern of postwar industrial development, which emphasized iron and steel, aluminum, and more recently, petroleum processing and petrochemicals, has intensified the country's dependence on imported raw materials and increased its vulnerability to a cutoff of supplies. Poland's own extensive resources of coal, zinc, sulfur, and timber, as well as its large, diverse agricultural output, are important sources of export earnings, which enable the country to pay for the imported raw materials and machinery it has required for rapid industrialization. Coal, timber, and agricultural and food products are the source of about three-fifths of the hard currency export earnings. In spite of the rapid growth of machinery exports to other Communist countries, fuels and materials still make up about one-third of Poland's total exports to those countries.

Polish technology is inferior by West European and U.S. standards, and the quality of industrial output is low. Neglect in the postwar period has, to a large extent, left Poland's prewar industries with outdated equipment. The new industries, including iron and steel, machine building, and chemicals, have been developed largely in isolation from the free world markets and have been little influenced by Western technology and marketing methods. Instead,

FIGURE 1. Supply position of selected basic materials, 1971 (U/OU)
(Thousand tons, except as indicated)

	DOMESTIC			PRODUCTION AS PERCENT OF APPARENT CONSUMPTION
	OUTPUT	IMPORTS	EXPORTS	
Crude petroleum.....	395	7,894	0	4.8
Hard coal (million tons).....	145	1	30	125.0
Coke (million tons).....	17	0	2	116.7
Iron ore.....	2,078	12,430	<i>Insig</i>	14.3
Pig iron.....	7,497	1,552	90	83.7
Rolled steel.....	9,568	1,044	1,255	102.3
Zinc and zinc products.....	4,163	110	90	99.5
Copper, refined.....	93	34	29	94.9
Chemical fertilizers.....	1,786	2,245	853	56.2
Cement.....	13,082	614	146	96.5
Grain.....	19,390	2,946	111	87.5
Meat and meat products*.....	1,862	263	172	95.3
Cotton.....	0	145	0	0
Sawn wood (thousand cubic meters).....	6,998	353	714	105.4

*Commercially processed meat.

technological progress has been tied closely to Soviet-supplied blueprints, licenses, and technicians. As a result, much of the country's industry, although it covers a large part of domestic consumption and provides exports to other Communist countries and to less-developed Western countries, cannot meet the standards of the advanced market economies. This is particularly true of the Polish machine-building industry. Its continued growth since the late 1950's has depended particularly on Soviet willingness to buy increasing quantities of Polish machinery. In Poland's industrial sector, only the food processing industry sells any sizable part of its output to the industrial West.

Communist Party leader Gierek, who succeeded Wladyslaw Gomulka after the workers' riots in December 1970, is continuing with Gomulka's plan to increase Polish imports of advanced technology from the industrial West. The plan for 1971-75 calls for purchases of Western capital equipment to double over the previous 5 years. Since the bulk of such purchases is financed by credits, Polish hard currency indebtedness will increase considerably. A doubling of imports of Western capital equipment in 1972 alone resulted in an increase of Poland's estimated medium- and long-term indebtedness to the industrial West from \$1.2 billion at the end of 1971 to \$1.5 billion at the end of 1972.

B. Structure of the economy

Poland has maintained satisfactory rates of economic growth throughout the postwar period, except during the early 1950's. GNP increased at an

average yearly rate of 5% between 1950-70, and 6% in 1971-72 (Figure 2). Moreover, Poland avoided the sharp declines in the rate of growth that East Germany and Czechoslovakia suffered in the early 1960's, and has maintained a growth rate higher than that of Hungary, though lower than that of either Bulgaria or Romania. The rate of growth of industrial production, especially producer goods, has been high, averaging 7% a year during 1961-70 and 8% during 1971-72. (U/OU)

Net agricultural output—less feed, seed, and waste—increased at a rate of only 1.8% a year during 1961-72, a rate considerably slower than those of Bulgaria and Romania. Value added in agriculture, however, has increased more rapidly in Poland than in any other East European Communist country, reflecting the slower growth of industrial inputs in Poland. The growth of value added in Polish agriculture is estimated to have averaged 3.3% a year during 1961-70 and 5.7% a year during 1971-72. (U/OU)

In 1972 about 47% of the GNP originated in industry and 21% in agriculture. The pattern of employment in the economy is quite different from that of output; in 1972, 36% of the 16.8 million working population were employed in agriculture, while 29% worked in industry and 35% in other nonagricultural occupations. The importance of industry to the Polish economy is largely the result of policies of the country's Communist government. As late as 1950, the relative shares of industry and agriculture were about the reverse of those in 1972: agriculture contributed 41% and industry 24% of GNP. (U/OU)

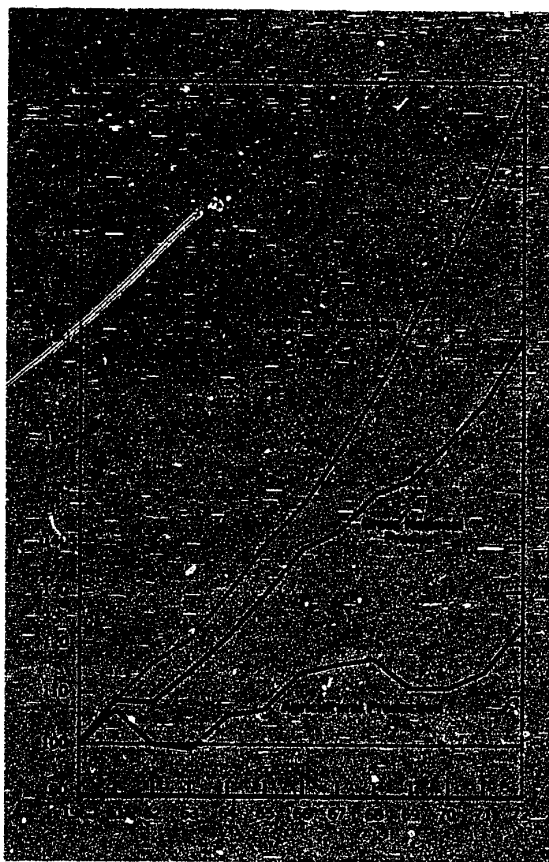


FIGURE 2. Indexes of GNP, industrial production, and agricultural production (U/OU)

Largely as a result of postwar economic policies, Poland now has a highly diversified industrial sector. Mining and metallurgy, including large hard coal and iron and steel industries, brown coal mining, and zinc, copper, sulfur, and aluminum ore mining and processing, make up a sizable segment of Polish industry, accounting for about 19% of gross industrial output and 15% of industrial employment in 1971. Machine building and food processing are Poland's two largest industries, contributing 27% and 18%, respectively, of industrial output in 1971. The manufacture of chemicals, one of the most rapidly expanding industries in the economy, accounted for about 9% of industrial output in that year. (U/OU)

In its postwar program for economic growth, the Communist government concentrated a large share of its resources on the development of industries that had little economic significance in prewar Poland—iron and steel, machine building, and chemicals—and on the development of newly discovered or unexploited

resources—brown coal, copper, and sulfur. As a result of these policies, the new industries have developed rapidly. According to official figures, the 1971 output in machine building, which accounted for only 7% of gross industrial output in 1950, was 28 times the 1950 level, whereas the output of chemicals, which had accounted for less than 2% of the total output, was 18 times the 1950 level. Although the large prewar industries—hard coal, textiles, and food processing—were relatively neglected during the postwar period and have grown more slowly, they are still as important as the newer sectors and are now receiving increasing attention. The shares of gross output, employment, and fixed capital in various branches of industry are shown in Figure 3, and the growth of gross output by branch is shown in Figure 4. (U/OU)

Poland, like the other Communist countries, experienced difficulties in the mid-1950's as a result of forced growth in heavy industry. It was obliged temporarily to hold down the growth of investment and relax its efforts in heavy industry in order to permit consumption to reach an acceptable level and to allow fuel, power, and raw material production to catch up with industrial requirements. Since 1958, the Polish Government again has maintained a high rate of investment to achieve high rates of industrial growth. This goal has been tempered, however, by concern that consumption should increase at a slow but steady rate and that a balance should be maintained between the production of fuels and other raw materials and the growth of the industrial sectors that consume them. The pattern of Poland's industrial development since 1958 has been geared to export possibilities, to a much greater extent than in the early

FIGURE 3. Distribution of output, employment, and fixed capital, by branch of socialized industry, 1971 (U/OU) (Percent of industry totals)

BRANCH	GROSS OUTPUT	EM.PLOY- MENT	FIXED CAPITAL
Electric and thermal power . . .	2.6	2.2	12.6
Fuels	7.8	9.7	17.6
Ferrous metals	7.8	4.2	8.3
Nonferrous metals	3.3	1.4	3.2
Machinery and equipment	26.9	31.3	15.0
Chemicals	9.0	6.8	12.0
Construction materials	3.3	4.7	5.9
Wood processing, paper, and paper products	5.0	6.1	4.0
Textiles, clothing, leather	13.2	17.9	6.5
Food	17.4	11.2	9.5
Other	3.7	4.5	5.4
Total	100.0	100.0	100.0

FIGURE 4. Volume indexes of output in selected branches of socialized industry (U/OU) (1950=100)

	1960	1965	1970	1971
Electric power.....	356	591	894	972
Coal.....	152	180	222	232
Other fuels.....	192	306	506	539
Ferrous mining and metallurgy..	278	398	517	550
Nonferrous mining and metallurgy.....	273	359	573	663
Metal processing.....	676	1,198	1,995	2,167
Machinery.....	737	1,465	2,653	3,006
Chemicals.....	482	906	1,678	1,827
Construction materials.....	377	546	754	803
Wood processing and paper.....	336	455	594	628
Textiles and clothing.....	291	391	562	597
Food processing.....	243	300	348	373
Total.....	347	523	782	847

1950's. Large investments in coal, chemicals, copper, and food processing are aimed largely at increasing long-run export capacity. (U/OU)

1. Agriculture, fisheries, and forestry (U/OU)

a. Agriculture

Poland is the largest agricultural producer in Eastern Europe (excluding European U.S.S.R.). About 62% of the land area is devoted to agriculture including 48% under cultivation and almost 14% in meadows and pastures (Figure 5). The amount of arable land per capita—about 0.46 hectare in 1971—ranks among the top 10 countries in Europe. Poland's climate and soil permit cultivation of a wide variety of crops. Fairly mild winters with moderate rainfall are

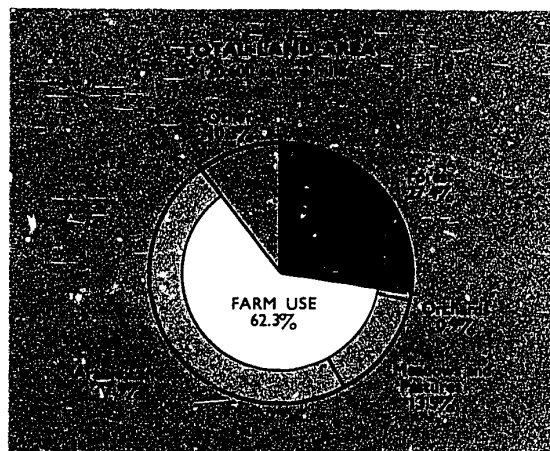


FIGURE 5. Land utilization, 1971 (U/OU)

favorable to the cultivation of winter grains. The frost-free season is long enough for the successful cultivation of most summer grains, sugar beets, and potatoes. The predominantly sandy soils, however, require good management to make them highly productive.

The agricultural sector has adequate investment funds, but industrial inputs are not available in sufficient quantity and quality. The socialized agricultural sector is much better supplied than the private sector with most types of agricultural machinery, fertilizer, breeding stock, and new varieties of seed. Storage and shipping facilities are inadequate as a result of persistent shortages of building materials and transportation equipment, especially refrigerated trucks, so that serious losses occur from spoilage. Moreover the regime has had scant success in recent years in attracting trained young men to the farms and keeping them there, so that a manpower shortage occurs during the harvest season even though about 36% of the Polish labor force (6 million persons) work in agriculture. The preference of trained agronomists and graduates of agricultural colleges for administrative positions in the cities rather than for jobs as advisors on farms further complicates the introduction of new agricultural technology.

The principal crops grown are wheat, rye, barley, oats, sugar beets, and potatoes. Of the total area sown in 1971, 57% was in grains, 18% in potatoes, 6% in industrial crops (sugar beets, oilseeds, tobacco, and flax), 14% in fodder crops, and 5% in other crops. Rye, of which Poland is the world's second-largest producer, is the country's most important grain crop, occupying 45% of the total grain acreage. The total area annually planted to crops in Poland has been gradually declining since 1960. In addition, there has been a shift in acreage from grain—which covered about 60% of sown land in 1955—to fodder and industrial crops. Declining prices in the world sugar market led Poland, a surplus producer, to cut back sugar beet acreage some 14% between 1965 and 1970. Nevertheless, the output of sugar beets continued to increase because of the larger input of fertilizer; only in 1969—a bad weather year—did output fall below the 1961-65 annual average. The rising price of sugar in the international market may induce Polish officials further to stimulate domestic output by boosting producer prices for sugar beets.

Poland has made relatively good progress since the mid-1950's in raising yields per hectare of major grain crops and since the mid-1960's, for root crops. Yields in the immediate postwar period were far smaller than those on the same lands prior to World War II, the drop being particularly sharp in the former German

FIGURE 6. Production and yields of principal crops (U/OU)

	1950-55 AVERAGE	1956-60 AVERAGE	1961-65 AVERAGE	1966-70 AVERAGE	1971	1972
Production (million tons):						
Wheat.....	2.0	2.3	3.0	4.3	5.5	5.2
Rye.....	6.1	7.5	7.5	7.5	7.8	8.2
Barley.....	1.1	1.2	1.4	1.7	2.4	2.8
Oats.....	2.1	2.5	2.6	2.9	3.2	3.2
Potatoes.....	30.8	36.3	43.7	47.9	39.9	48.7
Sugar beets.....	6.5	7.7	11.4	13.6	12.6	14.3
Yields (quintals* per hectare):						
Wheat.....	13.1	16.1	19.7	23.2	26.5	25.4
Rye.....	12.3	14.6	16.1	18.3	21.1	23.1
Barley.....	13.4	16.2	19.4	23.0	27.2	27.3
Oats.....	13.0	15.2	17.1	20.5	24.1	23.8
Potatoes.....	117.0	131.0	154.0	176.0	150.0	184.0
Sugar beets.....	187.0	211.0	267.0	324.0	299.0	327.0

*One quintal = 100 kilograms (220.46 pounds).

territories, where advanced agricultural technology had been employed before the war. The neglect of agriculture and attempts at collectivization in the early 1950's resulted in slow recovery to prewar levels of productivity. The acquiescence of the Gomulka regime in permitting a private agricultural sector to operate stimulated a rapid increase in yields per hectare in the late 1950's and in the 1960's. The average annual yields of Poland's important grain crops were 25% to 45% larger in 1966-70 than in 1956-60 (Figure 6). Because of inferior agricultural technology, however, yields are generally still lower in Poland than in West European countries with similar soil and climatic conditions.

Livestock production has been expanding in recent years and accounted for nearly 47% of the gross value

of agricultural output in Poland in 1972. The numbers of hogs and cattle have risen over the past decade, reaching postwar peak levels of 17.3 million and 11.5 million, respectively, in 1972 (June 30 census). Sheep raising is far less important, and after small increases in the mid-1960's, the number of sheep has been declining since 1968 (Figure 7). The number of horses also has declined in Poland, but to a lesser degree than in other East European countries. The small private farms that are still characteristic of Polish agriculture continue to use horses both for draft power and for local transportation.

The overall increase in livestock production during the 1960's enabled Poland to increase the domestic consumption of meat and other animal products and to remain an important exporter. Red meat production

FIGURE 7. Livestock and livestock products, selected years (U/OU)

	1955	1960	1965	1967	1969	1970	1971	1972	1975 PLAN
Number of livestock (thousand head):*									
Horses.....	2,560	2,805	2,554	2,643	2,633	2,585	2,501	2,422	2,300
Cattle.....	7,912	8,695	9,947	10,768	11,049	10,844	11,076	11,452	***12,150
Hogs.....	10,888	12,615	13,779	14,233	14,356	13,446	15,243	17,347	***17,000
Sheep.....	4,243	3,662	3,061	3,321	3,239	3,199	3,180	3,110	na
Production:									
Red meat** (thousand tons).....	894	1,148	1,334	1,409	1,500	1,478	1,481	1,615	†1,850
Whole milk (thousand tons).....	9,903	12,808	13,330	14,480	14,672	14,935	15,038	15,759	***18,818
Eggs (billions).....	4.2	5.6	6.3	6.3	6.7	6.9	7.1	7.5	7.8
Wool, unwashed (thousand tons).....	9.8	9.0	7.5	8.6	8.8	8.9	9.1	9.0	na

na Data not available.

*June 30 census.

**Dressed carcass weight, including edible offals.

***Mid-point of planned range.

†Computed using planned percentage increases.

increased 29% between 1960 and 1970, while the output of milk and eggs went up by 17% and 23%, respectively. Meat exports, most of which go to Western countries, increased rather rapidly in the first half of the decade (to about 220,000 tons in 1965), but dropped to 172,000 tons by 1971. Efforts to better satisfy domestic demand for meat required not only a cut back in exports but also large imports of pork in 1970-71 by the Gierk regime, with the result that in 1971 Poland was a net importer of meat. Incentives offered to livestock producers and improved feed supplies boosted pork production in 1972 above the planned level and sharply lowered import requirements.

Poland's most important meat exports are bacon and canned ham. Most of the bacon is sent to the United Kingdom, and most of the canned ham is sold in the United States. Exports of fresh beef to Western Europe are also large. In addition to meat, Poland exports sizable quantities of butter and eggs, although exports of both have dropped since the mid-1960's as West European production caught up with demand.

The increase in livestock production has required Poland to import large quantities of feedgrains (including wheat) and oilcake. Grain imports, which amounted to about 1 million tons a year until 1956, rose rapidly after that year and averaged 2.7 million tons a year during 1961-65. Grain imports were subsequently cut back in support of the plan of becoming self-sufficient in grain; they totaled about 2.2 million tons per year during 1966-70. The plan was doomed to failure, however, as livestock production stagnated and Poland had to import 2.5 million tons of grain in 1970. Gierk's planners eliminated self-sufficiency in grain production as a goal in the 1971-75 plan, and 2.9 million tons were imported in 1971.

During 1956-66, over two-thirds of the grain imports came from the West; close to one-third of the total came from the United States alone. Since 1966, the U.S.S.R. has supplied an increasing share of the grain imports, while the U.S. share has dwindled, due mainly to the cutoff of P.L. 480 credits in 1964. During 1957-64, the United States supplied \$538 million in credits on favorable terms, enabling Poland to import grains to build up its livestock production and boost exports of meat and dairy products. The profitability of meat exports has declined in recent years not only because low-cost P.L. 480 credits dried up, but also because an expanding domestic market for animal products has reduced the share of output available for export to Western Europe. In view of recent Soviet grain production difficulties, Poland, in

1972, purchased a larger share of its grain from the United States and other Western countries. This can be expected to continue in the short run.

Polish agriculture is characterized by small, privately-owned farms, rather than by the large collectives typical of other Communist countries. About 83% of Poland's agricultural land is in private hands, 15% in state farms, and less than 2% in cooperative (collective) farms. The private sector embraces over 3 million farms with an average area of 5.4 hectares of land each (Figure 8). Between 1949 and 1956 Poland tried to get peasants to join collectives, subjecting private farms to heavy taxation and discrimination in the allocation of industrial materials and equipment, but the collectivization effort was not pushed as hard as in other Communist countries, and by 1956 collective farms included less than 10% of all the agricultural land. In June of that year, collectivization as a goal was dropped, and existing collectives were allowed to disband. Although the number of collectives has fluctuated since then, the dissolution of collectives has generally kept pace with the formation of new ones. The collectives, which now comprise less than 2% of the agricultural land, generally include holdings that were too small and too poor to be farmed as individual units. Agricultural circles—economic organizations of private farmers organized mostly for mechanization purposes, and akin to some West European cooperatives—have been encouraged among farmers. Private ownership of land remains inviolate, however, and there has been no pressure to convert these organizations into collectives. Figures 9 and 10 show the threshing of grain on a private farm and a private farm market in Poland.

Socialized agriculture in Poland is represented chiefly by the state farms, which are operated much like state enterprises in other sectors. State farms hold 15.1% of the agricultural land. They were formed for the most part after World War II on abandoned

FIGURE 8. Number and size of private farms and plots (U/OU)

SIZE OF FARM (Hectares)	1960		1970	
	Number (1,000)	Percent of total	Number (1,000)	Percent of total
0.1-0.49.....	347.7	9.7	376.8	11.1
0.5-1.99.....	829.9	23.1	756.9	22.3
2.0-9.99.....	2,029.6	56.5	1,891.2	55.6
10 and over.....	384.7	10.7	373.2	11.0
Total.....	3,591.9	100.0	3,398.1	100.0



FIGURE 9. Threshing of grain by private Polish farmers (U/OU)

estates in the former German territories. They have since gained some new acreage from reclaimed land and through annexation of private farms whose owners died without heirs, or deeded their farms to the state in return for pensions. Most state investment in agriculture in the past has been channeled into state farms for the purpose of developing new farming methods and improving plants, seeds, and livestock breeds.

The small size of the typical private sector farm and the noncontiguous nature of the plots (in some instances plots were separated by several miles) prompted the regime to initiate a series of land reforms on 1 January 1968. The reforms sought to increase the size of the average private farm and to consolidate landholdings by obligating the state to purchase small, marginally-productive or scattered landholdings for subsequent resale in the form of contiguous plots; to guarantee a pension to older farmers who turn over land to the state; and to sell land from the state land



FIGURE 10. Private farm market in Poland (U/OU)

fund to private farmers, as well as to state farms to enlarge their holdings. So far, the program has met with only limited success. Between 1968 and 1970 about 500,000 hectares were relinquished by the state land fund, of which only 43% was sold to private farmers. While the total number of private farms declined slightly, the number having less than two hectares each increased.

Since the mid-1950's, Poland has tried to increase efficiency and promote technical change in agriculture by greatly increasing the allocation of resources to the sector. In an effort to end agricultural stagnation, the Gomulka government nearly doubled average annual investments in the sector during 1956-60, compared to those of 1950-55. Total outlays in agriculture rose 48% during 1961-65 and 68% during 1966-70 over the levels of the preceding 5-year periods.

Agricultural investments as a percentage of total investments have risen steadily since 1956, as shown in the following tabulation:

1950-55	10.1
1956-60	12.5
1961-65	13.9
1966-70	16.1
1971-75 (plan)	14.0
1971	15.6
1972	14.7

During 1966-70, agriculture accounted for a greater percentage of investments than at any other time during the postwar period, although the 16.1% share was less than the 16.5% share planned for that period. The shortfall was due mainly to the fact that private investments, which made up roughly one-third of all agricultural investments in that period, did not meet expectations because of the limited availability of building materials and agricultural machinery. The 1971-75 plan envisions that about 55% of the total investments in agriculture will be generated by private farms. In 1971, the private sector's share of agricultural investments was 38%, the highest level in a decade. Deliveries of industrial goods—fertilizers, building materials, and machinery—to agriculture also showed a large improvement but still fell short of demand.

Although the Polish Government has continued to espouse the long-range goal of socializing agriculture, the retention of private ownership has enabled it to avoid the costly and less-productive investments that other Communist countries have had to make in new collective facilities to replace privately-owned buildings. Moreover, the willingness of peasants to work harder on their own farms than on collectives has generally resulted in more efficient use of machinery

and fertilizers in Poland than in most other East European Communist countries. On the other hand, private ownership presents the Polish Government with unique problems of control. The government sets goals for production and marketing of farm commodities as well as for raising the level of technology by increasing the use of machinery, fertilizers, and improved types of seed. It can achieve these goals only by indirect methods such as price incentives, allocation of industrial inputs, and peasant education.

The government had relied to some extent on compulsory deliveries of agricultural products to guide farm output, but abolished them as of 1 January 1972. This was an important step toward improving efficiency of farm production, because it eliminated state interference in the farmers' sphere of decision-making as regards specialization. The bulk of state procurement of agricultural commodities is now made through "voluntary" sales by private farmers. These sales are made in part under contract, in which the farmer agrees in advance of harvest or livestock slaughter to sell certain quantities of produce or livestock products to the state at a specified price. The farmer may also sell commodities to the state in quantities over and above those contracted. In an effort to encourage the signing of contracts, the state has generally offered a slightly higher price for contract than for above-contract sales. Farmers who sign contracts with the government are also generally given priority in obtaining supplies of fertilizer, feed, seed, and building materials in state or cooperative stores.

Since taking power in late 1970, the Gierek regime has also stimulated output in the private sector by raising prices of slaughter livestock on three separate occasions, abolishing state control over sales of coal to farmers, settling land property rights, reforming the tax system, initiating a rural health service, and establishing new local administrative units. The success of these policy changes is most evident in the sharp increase in procurement of livestock in 1972, as well as in gains in total livestock output compared to 1970 and 1971. With retail food prices frozen, however, the subsidy cost to the government for livestock products is rising rapidly, as are farmers' incomes. This situation could lead to some upward adjustment in prices that farmers pay for industrial inputs and services.

The Polish caloric intake (over 3,000 calories per day) is among the highest in Communist Eastern Europe and compares favorably with that of the United States. The share of starches in the diet, however, is considerably higher than in most other

northern European countries, and the share of meat, dairy products (except milk), fruits, and vegetables is correspondingly lower. Demand for pork has exceeded supplies since 1968; per capita annual meat consumption increased nearly 4 kilograms between 1968 and 1971 to 56 kilograms. By 1975, meat consumption is planned to rise to 63 kilograms per capita.

b. Fisheries

Poland's fishing fleet has almost tripled in size since 1960, reaching 141,700 gross register tons in 1971. Coastal and deep-sea fishing netted a new high of 488,500 tons of fish in 1971—mainly cod and herring—nearly 3 times the catch in 1960. All of this increase was derived from Atlantic Ocean catches. In addition, commercial fisheries caught 13,600 tons of fresh-water fish. The total catch of fish in 1972 was 520,400 metric tons. Polish exports of fish averaged about 53,000 tons annually during 1969-71, compared with only 7,000 tons in 1960. Imports of fish—about 40% from the U.S.S.R.—amounted to 13,400 tons in 1971. Per capita consumption of fish was 5.7 kilograms in 1971, among the highest in Eastern Europe.

c. Forestry

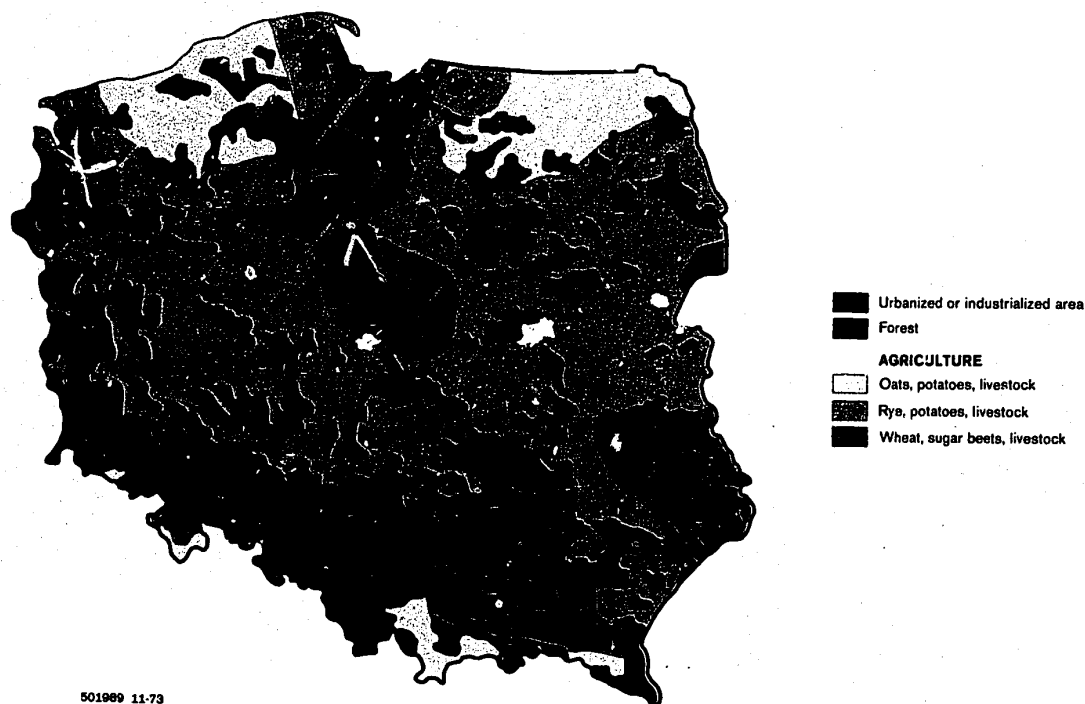
Forests covered about 8.5 million hectares in 1971, or more than one-fourth of Poland's land area (Figure 11). More than 80% of the forest land is under state control. Timber resources, mainly coniferous wood, are adequate for domestic needs and have been an important source of hard currency earnings. Since 1965, the annual timber cut has ranged between 16.4 million and 18.5 million cubic meters. Sizable timber exports have been achieved by cutting timber at a rate in excess of natural growth and by holding down domestic use. Exports of sawn wood were a record 952,000 cubic meters in 1964, but they dropped to 820,000 cubic meters in 1970 and 714,000 cubic meters in 1971. Most of the sawn wood has been sold to Western countries. In recent years sales of timber, furniture, and paper accounted for about 5% of Poland's total hard currency earnings. Poland imports some cellulose for its paper and textile industries.

2. Fuels and power (U/OU)

a. Hard coal and coke

Poland is one of the world's largest producers of both hard coal² and coke. Output of hard coal in 1971 reached 145 million tons, and coke production

²By definition, hard coal includes both bituminous and anthracite coals. According to the international standard, hard coal is defined as coal having a gross calorific value of more than 5,700 kilocalories per kilogram on a moist, ash-free basis.



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FIGURE 11. Land-use pattern (U/OU)

amounted to about 17 million tons. Coal production in Poland has increased steadily throughout the postwar period, because of a shortage of other fuels, especially crude oil, and because of strong demand for coal on international markets. Since 1970, coal production has increased by 5 million to 6 million tons (about 4%) per year, and the planned growth rate through 1975 is the same. Four-fifths of the hard coal output is consumed domestically, and one-fifth is exported.

Coal has been an important source of foreign exchange since the end of World War II. In 1971, coal exports totaling 30 million tons earned the equivalent of more than US\$400 million, \$220 million of which was in hard currency. About one-half of the exports have been going to the Communist countries, mainly the U.S.S.R., Czechoslovakia, East Germany, and Hungary. Major importers in the non-Communist world have been Italy, France, Finland, Denmark, Japan, and Austria. Coking coal exports amounted to about 6 million tons, or 20% of total exports of hard coal, in 1971. Growing Western concern over air pollution should help keep the demand high for low-sulfur Polish coal. Poland imports about 1 million tons of high-grade coking coal per year, most of it from the

U.S.S.R. Approximately 2 million tons of coke are exported annually. Major recipients are the U.S.S.R. and East Germany.

Polish hard coal is nearly all bituminous and is extracted almost exclusively from deep mines. Reserves are concentrated in the Upper and Lower Silesian basins along the Polish-Czechoslovak border and in the newly-discovered coal basin in eastern Poland between Lublin and the Polish-Soviet border. Total possible reserves are estimated at about 100 billion tons to a depth of 1,000 meters and 150 billion tons to a depth of 2,000 meters.

Hard coal is by far the most important source of primary energy in Poland, although its share is declining slowly. The percentage shares (actual and planned) of energy consumption, by sources of energy, are as follows:

	1965	1970	1975 PLAN
Hard coal	81.8	76.4	68.6
Brown coal	5.8	5.4	6.9
Petroleum	7.0	10.4	13.7
Natural gas	2.1	6.2	8.4
Other (peat, wood, water, and recovered fuels) ..	3.3	1.6	2.4
Total	100.0	100.0	100.0

FIGURE 12. Production of fuels and power (U/OU)

	1950	1955	1960	1965	1970	1971
Hard coal (<i>million tons</i>).....	78.0	94.5	104.0	119.0	140.1	145.5
Brown coal.....	4.8	6.0	9.3	22.6	32.8	34.5
Coke (<i>million metric tons</i>).....	6.0	10.0	11.9	14.5	16.5	16.8
Crude petroleum (<i>thousand tons</i>).....	152.0	180.0	194.0	339.0	424.0	395.0
Petroleum products (<i>thousand metric tons</i>).....	271.0	686.0	876.0	3,517.0	7,481.0	8,331.0
Natural gas (<i>million cubic meters</i>).....	183.0	393.0	549.0	1,378.0	5,182.0	5,383.0
Electric power:						
Production (<i>billion kw.-hr.</i>).....	9.4	17.8	29.3	43.8	64.5	69.9
Installed capacity (<i>million kw.</i>).....	2.7	4.2	6.3	9.7	13.9	14.3

The pattern of fuel consumption in Poland differs sharply from the world pattern, in which coal and petroleum each account for about one-third of total consumption. Output of fuels and power is shown in Figure 12.

In the early 1950's, the regime tried to increase coal production rapidly with a minimum of investment, relying on forced labor, overtime work, and the use of military personnel in mining. Since 1956, coal mining has received much greater emphasis in Poland's investment program, and large expenditures have gone into both the construction of new mines and the modernization of old ones. The production of coking coal has received special attention, and its share of the hard coal output has increased from about 15% in 1950 to 25% in 1971.

The showcase of the Polish coal industry is an automated coal mine opened in Katowice in 1968. The Jan mine, named after Minister of Mining Jan Mitrega, operates with a handpicked staff of 160 miners and 69 engineers. It combines modern equipment—including computers—with up-to-date techniques, and serves as a training ground for mining specialists from all over Poland. By Polish standards, production results claimed at the mine have been impressive: 15 tons per man-day, as compared with an average of about 3 tons in other Polish mines.

b. Brown coal

Poland has large deposits of brown coal, located mainly in two areas: the Turow Basin in southwestern Poland near the Polish-East German border, and the Konin-Turek Basin in the eastern part of Poznan³ province. A major new brown coal deposit was recently discovered in Belchatow, about 40 kilometers south of Lodz. Development of a mine in this area is expected to begin in 1976.

³For diacritics on place names see the list of names on the apron of the Summary Map in the Country Profile chapter and the map itself.

Brown coal mining on a significant scale was initiated in 1956; since then output has been rising rapidly. The output of 34.5 million tons in 1971 was almost six times the 1955 output. Part of the financing of brown coal development has come from East Germany, through credits repayable in deliveries of brown and hard coal. Most Polish brown coal is used in powerplants.

c. Petroleum and natural gas

Poland imports all but a small fraction of its supply of crude oil. In 1972, domestic production amounted to only about 347,000 tons. Extensive geological surveys are still conducted with Soviet assistance, but no major fields have been found in recent years, and prospects for greatly increased domestic production are not bright. In fact, production has declined during the past four years.

Crude oil imports, all from the U.S.S.R., totaled 9.7 million tons in 1972. In order to meet long-deferred needs, Poland doubled its imports during 1961-63, 1964-65, and again during 1966-69. Imports will probably continue to increase rapidly through 1975. Because the U.S.S.R. may not be relied upon to continue supplying increasing amounts of crude to meet future Polish needs, Poland is seeking to import oil from the Middle East. Agreements were reached in 1973 with Iran and Iraq to supply crude oil.

Crude oil is processed at the major refining and petroleum complex at Plock, about 75 miles northwest of Warsaw. The refinery, which began operating in August 1964, had a capacity of 2 million tons in 1966 and about 7 million to 8 million tons at the end of 1972. The present capacity of the Plock complex represents one-third of the planned size of the works. Oil from the U.S.S.R. is brought to the refinery via the Council for Economic Mutual Assistance (CEMA) pipeline, which crosses Poland from the U.S.S.R. to East Germany. The 24-inch pipeline, completed in December 1963, has been joined by a parallel 28-inch line which was recently completed.

Construction is now in progress, under a contract with Snam Progetti of Italy, on a major new petroleum refinery at Gdansk. The refinery, scheduled to be completed in 1975, will be supplied with 3 million tons of crude oil annually from Kuwait under a long-term contract with British Petroleum. Plans are also being made for the construction of a third major refinery, to be located at Blachownia Slaska in southern Poland; this plant is to have an annual crude charge capacity of 6 million tons when completed in 1977. Crude oil may be supplied to it from the Middle East via a pipeline through Yugoslavia, Hungary, and Czechoslovakia.

The rapid expansion of refining capacity has made it possible for Poland to increase output of petroleum products from 876,000 tons in 1960 to 10.0 million tons in 1972. In the latter year, Poland produced about 80% of its supply of kerosene, fuel oils, and lubricating oils, as compared with only 30% in 1964.

Sizable natural gas deposits discovered in recent years in the Carpathian foothills, and the promise of still greater discoveries, have encouraged the leadership to emphasize natural gas in the country's fuel balance. Since 1960, gas production has risen rapidly, from 0.5 billion cubic meters to 5.8 billion cubic meters in 1972. A further increase in natural gas production to between 12 billion and 13 billion cubic meters by 1975 is planned.

In 1968, reported gas reserves were on the order of 40 billion cubic meters. Since then, estimates have been revised sharply upward to 100 billion cubic meters or more. Several major pipelines have become operative and others are under construction. The most important line now in operation links the Rzeszow area, Poland's largest gas basin, with the fertilizer plant at Pulawy and extends to Lublin and Warsaw.

d. Electric power

The electric power industry has grown steadily throughout the postwar period, with particularly rapid increases occurring in the 1960's and early 1970's. Since 1960 the national electric power capacity nearly tripled, and Poland now ranks first in the Communist East European area in electric power generating capacity and production. Production in 1972 amounted to 76.4 billion kilowatt-hours (kw.-hr.). At the end of that year, the installed generating capacity was 16.1 million kilowatts (kw.). In 1971, the electric power industry accounted for 12.6% of Poland's fixed assets and 2.6% of the country's gross industrial output.

Industry consumes two-thirds of the total electric power output. The chemical and metallurgical sectors

are the principal industrial consumers of electricity, using 47% of the total industrial allocation. Other principal industrial consumers are the fuel, metalworking, wood and paper, textile, and food industries. The remaining electricity is allocated to households, commercial and governmental establishments, and the transport, agricultural, and public utility sectors of the economy. All urban areas have household electricity, and by 1971 all state farms and most private farms were electrified.

Thermal powerplants account for 95% of the total electric power capacity, and hydroelectric plants, the remainder. Thermal powerplants are fueled almost exclusively by domestic hard coal and brown coal. Almost one-half of the capacity is in the south-central part of the country, where the largest concentration of industry, the greatest urban density, and most of the hard coal mines are located. The largest powerplants, all thermal, are the 2-million-kw. Turowszow-Turow, the 1.2-million-kw. Laziska Gorne, and the 1.2-million-kw. Patnow. The combined capacity of these three powerplants comprises about 28% of the total national capacity.

Use of waterpower is limited because most of the rivers have small volumes of flow and the predominantly flat terrain would require a considerable expenditure of resources for dams to impound large reservoirs.

Transmission of electric power is accomplished by a national network encompassing 460,000 kilometers of transmission lines, including more than 5,700 kilometers of extra-high voltage (220 and 400 kv.) lines. High-voltage transmission lines cover a considerable portion of the country, connecting all important powerplants and providing service to the principal industrial and urban centers. The greatest density of transmission facilities is in the south-central part of the country, which includes the Upper Silesian Basin. The highest voltage transmission line (400 kv.) extends to this area from the large Turowszow-Turow powerplant in the southwest. The distribution system allows for exchanges of electricity with Czechoslovakia, East Germany, and the U.S.S.R. These exchanges have local significance in the border areas but have little effect on the national power supply.

Future development of the electric power base calls for an increase in generating capacity to about 20.5 million kw., with an annual production of 96 billion kw.-hr. by the end of 1975. The planned increase is to be accomplished primarily through construction and expansion of thermal powerplants. Two of the thermal plants under construction, the Kozienice and Gryfino Dolna Odra, are in the 1-million-kw. class. The largest

generating units in use have a capacity of 200,000 kw. Until recently, units of this size were imported from the U.S.S.R.; however, domestic industry now produces units of this size, and research has begun on the manufacture of 500,000-kw. units. The first 500,000-kw. unit is to be installed in 1975 or 1976 and will be imported from the U.S.S.R. Poland has recently announced plans to build its first nuclear powerplant. Scheduled to have a capacity of 444,000 kw., it is expected to be operational by 1982.

3. Metals and minerals (C)

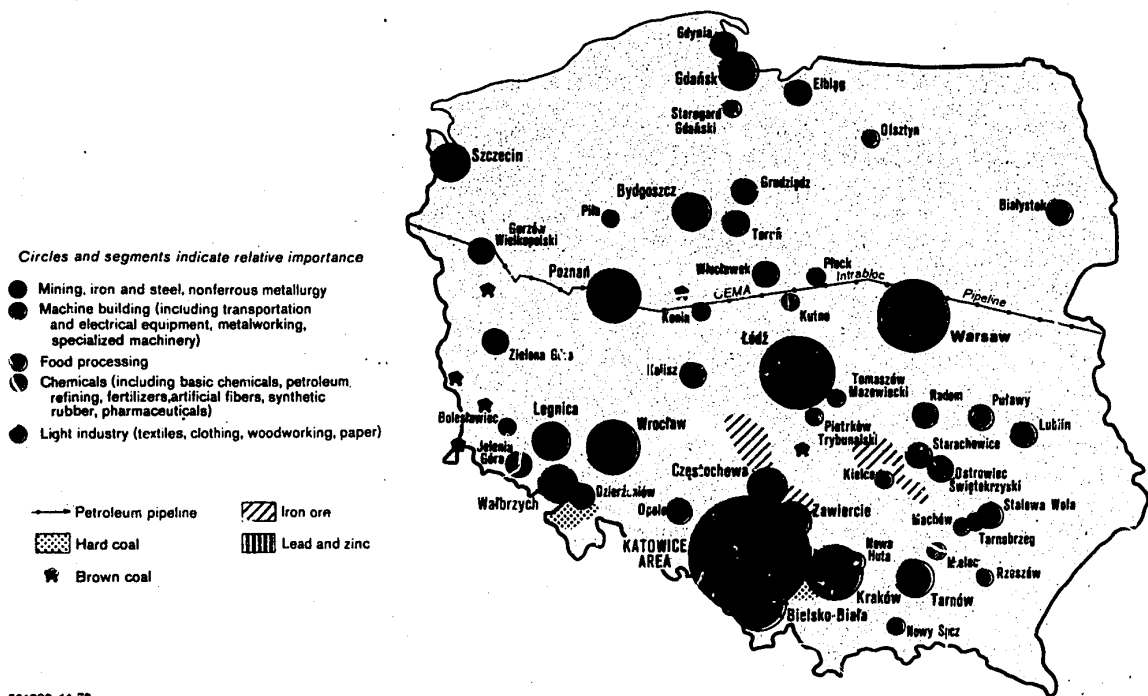
a. Ferrous metallurgy

Poland has the largest iron and steel industry in the East European Communist area (excluding the U.S.S.R.) and the tenth largest in the world, ranking slightly behind Belgium. In 1972, the industry produced about 7.5 million tons of pig iron, 13.5 million tons of crude steel, and 9.2 million tons of rolled products. With the exception of coking coal, the industry is dependent on imports for most of its raw materials. Although there are relatively large iron ore deposits, they are difficult to mine and have an average iron content of only 34%. From a peak level of about 3.0 million tons during 1966-68, domestic iron

ore production decreased steadily to 1.8 million tons in 1972. In the latter year, imports of iron ore, about 85% of which came from the U.S.S.R., amounted to 12.5 million tons. Although the U.S.S.R. will continue to be its principal supplier, Poland plans to increase imports of iron ore from other current suppliers, including Brazil, Sweden, and India, to help cover its growing needs. Poland depends on imports for all alloying metals and ores for the production of ferroalloys.

The Polish iron and steel industry is located mainly in the Katowice-Krakov area in the southern part of the country (Figure 13). The province of Katowice contains a cluster of about a dozen plants which, in 1971, employed 105,000 workers or 60% of the industry's labor force and accounted for 5.9 million tons of crude steel and 4.0 million tons of rolled products, each representing 46% of the industry's output. The largest single enterprise is the Lenin Metallurgical Plant, located at Nowa Huta, near Krakow. This integrated combine, which began production in 1955, had a labor force of 27,000 and an output of 5.3 million tons of crude steel and 3.4 million tons of rolled steel in 1971. Total Polish output of iron and steel, as well as other important metals and minerals, is shown in Figure 14.

The iron and steel industry enjoyed a high priority in the industrialization drive of the early 1950's,



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FIGURE 13. Mining and industrial centers (U/OU)

FIGURE 14. Output of principal metals, minerals, and construction materials (U/OU)
(Thousand tons unless otherwise indicated)

	1955	1960	1965	1970	1971	1972
Iron ore.....	1,699	2,182	2,861	2,554	2,078	1,800
Pig iron.....	na	4,253	5,375	6,984	7,186	7,480
Crude steel.....	4,426	6,681	9,088	11,795	12,738	13,476
Rolled steel.....	2,925	4,422	6,130	8,136	8,721	9,216
Zinc-lead ore.....	2,378	2,461	2,688	3,583	3,851	3,988
Zinc metal.....	156	176	190	209	220	228
Lead metal.....	34	40	41	54	60	56
Copper ore.....	1,006	2,356	2,508	6,552	9,037	11,486
Refined copper.....	16	22	.	72	93	131
Aluminum.....	20	26	47	99	100	102
Elemental sulfur.....	12	26	431	2,683	2,713	2,927
Cement.....	3,813	6,599	9,573	12,180	13,082	13,986
Bricks (million units)*.....	2,740	3,489	3,516	3,660	3,820	3,915
Burnt tiles (million units).....	127.0	100.0	99.1	82.9	79.7	61.6
Building and industrial lime.....	1,538	2,166	2,874	3,586	3,819	4,097
Window glass (million square meters of 2-millimeter sheets)...	16.1	22.5	32.6	48.5	48.9	55.1

na Data not available.

*Excluding production in peasant groups, which in 1972 amounted to 134 million units.

receiving 16% of total industrial investment during 1951-55. Most of the outlays went into the construction of new facilities, including the Lenin plant. The rate of investment in iron and steel was progressively reduced after 1955, however, to 9.6% of total industrial investment during 1956-60, 8.3% during 1961-65, and 6.5% during 1966-70. In spite of this lowered priority, the industry has maintained a steady rate of growth by concentrating investment on the elimination of bottlenecks and the expansion of existing facilities, particularly for the production of such items as cold rolled strip and sheet, tinplate, galvanized sheet, and wire. On balance, however, results have not been entirely satisfactory. The industry is still geared predominantly to the making of steel by the traditional open hearth method. Poland's only oxygen-converter steel mill was put into operation in 1966, and the output of steel by this method in 1972 was only one-fifth of total output, a very low share compared with more advanced steel producing countries. Even though Poland normally exports more steel than it imports, exports are generally weighted heavily with such low-value items as rails, heavy plate, and semifinished products, whereas imports include a larger share of high-value items such as alloy steel, light flat rolled products, and special tubular steels.

Poland has embarked on an ambitious program of expansion and modernization of its steel industry during the 1970's. Planned investments during 1971-

75 total 50 billion zlotys, or twice as much as in the 1966-70 period. Production of crude steel is scheduled to reach 15 million tons by 1975, and the quality and assortment of products are to be improved substantially. In the latter half of the decade a large integrated combine, now under construction, is to be put into operation in the Katowice area, with an annual crude steel capacity of 4.5 million tons. It will be equipped with large modern blast furnaces and oxygen converters. A principal product will be semifinished steel for use in nearby plants, where rolling and finishing capacities are to be expanded and diversified.

b. Nonferrous metallurgy

Although generally small by world standards, Poland's nonferrous metals industries are among the largest in Eastern Europe. In the domestic economy these industries rank considerably behind the Polish iron and steel industry in terms of employment and value of annual output. In 1971, employment in nonferrous metallurgy amounted to about 57,000, or about one-third of that of ferrous metallurgy; the value of output in nonferrous metallurgy was nearly 36 billion zlotys, or 40% of that of ferrous metallurgy.

Poland ranks ninth among world producers of zinc but is second only to the U.S.S.R. among all Communist countries. Its output is more than adequate for domestic needs. In 1972, Poland produced 228,000 tons of zinc and exported 97,000 tons of zinc and zinc plate. Nearly all of Poland's zinc

output is derived from domestic zinc-lead ores; the remainder is obtained from concentrates imported mainly from non-Communist countries, including the United States. Total output of zinc-lead ores was about 4.0 million tons in 1972. The relatively small amount of lead contained in these ores is the basis for the production of metallic lead, supplemented occasionally by small imports of lead concentrates. The traditional source of Polish zinc, the sulfide ores of the Bytom Basin, is being exhausted, and a growing share of the national output is being derived from oxide ores in the Olkusz-Chrzanow region, where a highly mechanized mine is under development at Pomorzany. About one-third of the current metal output is refined by old, horizontal retort plants, some of which were built in the last century. Although no definite schedule has been established, the retorting methods are to be replaced by modern processes. Considerably greater use is planned for the Imperial Smelting Process, which currently accounts for about one-sixth of total zinc output. The process was adopted in 1968 in a new refinery at Miasteczko Slaskie, near Katowice. Difficulties were encountered in mastering the new process, but these reportedly have been overcome. The electrolytic process, which accounts for nearly one-half of current zinc output, may also see greater use.

Domestic lead output—65,000 tons in 1972—covers about three-quarters of domestic consumption. The remainder is supplied by imports of metallic lead, mainly from the U.S.S.R., Yugoslavia, and the United Kingdom. Cadmium, a coproduct of zinc ore, is produced in excess of domestic requirements and is exported to other Communist countries and to the West.

Production of refined copper has increased by no less than 500% between 1960 and 1972, from 22,000 tons to 131,000 tons. Poland is the largest producer of copper among the Communist countries of Eastern Europe, and by 1975 it is expected to attain an annual output of 200,000 tons. This level of production will enable Poland to meet its domestic needs, now rising rapidly in the electrical and telecommunications sectors, and will provide a sizable export surplus. Poland's objective is to become a major world producer of copper. Polish planners already are seeking foreign financial assistance to develop an industry capable of producing up to 600,000 tons of copper annually.

The rapid growth already achieved in copper production and the potential for future expansion derive from the discovery of rich copper ore deposits in southwestern Poland in the late 1950's, which are

estimated to be the seventh-largest in the world. Two major mines, financed in part by a US\$125 million credit from Czechoslovakia, were opened in 1966 at Glogow and Lubin to exploit these deposits. Substantial progress also has been made in the development of a third major mine at Rudna. This project, which has been helped along by a multimillion dollar long-term credit from France, is scheduled for completion in 1974. The volume of copper ore mined in Poland in 1972 was estimated at more than 10 million tons, and the planned output for 1975 is 14.5 million tons. Smelting and refining operations are carried out at Glogow and Legnica.

Poland's production of aluminum is small by world standards and ranks second to that of Romania in Eastern Europe. Output in 1972 amounted to 102,000 tons, or enough to cover roughly two-thirds of domestic needs. Imports from the U.S.S.R. made up the deficit. Although years of research have been devoted to the development of techniques to obtain aluminum from domestic clays, only limited experimental use has been made of such techniques, and Poland remains dependent on imports for its aluminum raw materials. Some bauxite is imported from Hungary and Guinea for domestic processing into alumina, but most local requirements for alumina are met by imports, principally from Hungary. A contract has been signed with Yugoslavia calling for annual deliveries to Poland of 120,000 tons of alumina over a 10-year period, beginning in 1976.

Poland has two aluminum reduction plants, each with an annual capacity of about 50,000 tons. One plant, located at Skawina, was built with Soviet assistance and was put into operation in 1954. A newer plant, employing French refining technology, was put into operation at Konin in 1966. Because of its location in a nonindustrial area, operations at the latter plant were hampered for some time by a manpower shortage—particularly of skilled technicians needed to supervise the French process. Although these problems have been overcome, Poland has not gone ahead with its initial plans to expand capacity at Konin to 100,000 tons per year, due apparently to the lack of low-cost electric power (the use of lignite, the fuel source for the required additional power, apparently would be uneconomical).

c. Nonmetallic minerals and construction materials

Poland has the third-richest deposits of native sulfur in the world. The deposits, discovered during 1953-56 at Tarnobrzeg, contain about 100 million tons of pure

sulfur. Sulfur mining in Poland began on a significant scale in 1961. Since then, output of elemental sulfur has increased rapidly to about 3.0 million tons in 1972. By 1975, output may reach 5 million tons, a level currently exceeded only by the United States. Favorable geological conditions permit much of the incremental output to be mined by the highly efficient Frasch process.

Sulfur exports have kept pace with domestic production and have become a major source of foreign exchange. Exports increased from 241,000 tons in 1965 to 1.8 million tons in 1970, 2.1 million tons in 1971, and, according to a preliminary report, 2.5 million tons in 1972. By 1975, Western experts estimate Poland will be exporting about 4 million tons per year. At present, more than 75% of the exports go to non-Communist countries.

Salt is found in abundance in Poland, and a small amount is exported annually. The country has only small resources of other nonmetallic minerals, and depends on imports for its entire supply of potash and all but a small fraction of its supply of phosphate rock. Poland has extended credits to the U.S.S.R. for the development of Soviet potash and is being repaid in deliveries of this material during 1970-80. The arrangement has resulted in the U.S.S.R.'s replacing East Germany as Poland's principal source of potash. Poland also receives large annual deliveries of apatite concentrates from the U.S.S.R.

Poland produces a wide variety of construction materials. The 1972 production of nearly 14 million metric tons of cement resulted in Poland ranking as the eleventh largest world producer and the largest among the East European countries. Cement output is inadequate to meet Polish demand, however, even though output has been growing at approximately a 7% annual rate for several years. The shortage has compelled Poland to become a net importer of cement, which is purchased primarily from the Soviet Union, although limited quantities are exported primarily to East European countries. This cement shortage should eventually be alleviated by the future completion of what will be the two largest Polish cement plants. The larger of these two plants is to receive its kilns and other equipment from the Soviet Union and is scheduled to begin production in 1976. Construction on the smaller one is expected to commence during 1973. The production of cement, as well as other construction materials, is shown in Figure 14.

Poland produces sufficient quantities of lime and plaster to satisfy the needs of its construction industry. Since 1970, the output of lime for construction and

industry has grown annually at a rate exceeding 6%. The output of wall materials has increased fairly steadily at a slower pace than lime, although the growth rate of production of brick wall materials has been substantially less than all wall materials considered together. Poland has adequate clay resources to support increased brick production, but has invested relatively little in the expansion of brick capacity, which reflects a Polish preference for substitute wall materials. Finally, the production of burnt tiles has continued its secular decline.

In addition to cement, Poland carries on international trade in several construction materials. It has been a net exporter of window glass for several years, although in recent years this market has failed to grow. Poland's largest window glass customer is the United States, which has purchased a growing proportion of window glass exports. Other construction materials exported by Poland include limestone, dolomite, fire clay, gypsum stone, gypsum cement, lime, and clay brick. Several construction materials are imported however, such as limestone, dolomite, kaolin, graphite, asbestos, asbestos cement, brick facing tile, and pre-cast concrete.

4. Manufacturing and construction (C)

a. Machine building

Machine building is Poland's largest industry, accounting for 27% of total industrial output in 1971. As the focal point of Poland's industrialization efforts throughout the postwar period, machine building has been accorded top priority in the allocation of investments, skilled labor, materials, and the best available management. Although the share of total investment going into machine building declined somewhat after 1955, the industry (including metal processing) still received about 15% of total industrial investment during 1956-65. This share increased to 19% during 1966-70. The gross value of output increased over 300% between 1960 and 1971. Exports increased even more rapidly than production. In spite of the rapid growth of its machine building industry, however, Poland remains highly dependent on imports for complex modern machinery.

The Polish machine building industry produces a wide variety of products. Transportation equipment—including railroad locomotives and cars, ships, and automotive equipment—accounted for about 34% of total output in the industry in 1971. "Electrotechnical equipment," the term used by the Poles to describe such items as generators, transformers, cables, and electronic equipment, comprised 17% of total

FIGURE 15. Production of machinery and equipment (U/OU)
(Thousand tons, except as indicated)

	1965	1968	1969	1970	1971
Metalworking machine tools (<i>thousand units</i>).....	34.5	33.0	33.4	33.4	na
Mining machinery.....	164.0	175.0	191.0	201.0	na
Metallurgical equipment.....	40.1	43.2	43.6	47.4	46.3
Chemical machinery.....	57.3	57.8	62.1	68.4	na
Construction and roadbuilding equipment.....	46.9	77.6	92.3	107.0	109.0
Food-processing equipment.....	43.2	54.5	57.4	56.9	48.6
Textile machinery.....	17.0	16.3	17.4	18.6	20.2
Agricultural machinery, excluding tractors (<i>thousand zlotys*</i>).....	3,630.0	4,344.0	5,118.0	5,547.2	6,287.0
Tractors, two-axle (<i>thousand units</i>).....	20.6	29.9	36.7	39.5	41.2
Roller bearings (<i>million units</i>).....	34.1	42.2	45.4	51.4	na
Electric rotary engines (<i>1,000 kw.</i>).....	4,533.0	5,649.0	6,684.0	7,429.0	7,391.0
Transformers over 20 kv.-a. (<i>1,000 kv.-a.</i>).....	5,427.0	7,562.0	8,486.0	8,423.0	10,058.0
Merchant ships (<i>thousand d.w.t.**</i>).....	359.0	479.0	454.0	518.0	600.0
Freight cars (<i>thousand units</i>).....	16.3	12.6	14.0	15.5	16.4
Locomotives (<i>units</i>):					
Diesel.....	319.0	279.0	347.0	351.0	295.0
Electric.....	72.0	109.0	91.0	75.0	85.0

na Data not available.

*1 July 1960 prices.

**Over 100 deadweight tons (d.w.t.).

machinery output. "Metal products," the term used to cover mainly domestic household equipment, accounted for 18%. The production of specialized machinery such as machine tools, agricultural, metallurgical, and mining machinery, construction equipment, boilers, and internal combustion engines accounted for 28% of total machinery output. Production of selected items of the machine building industry is shown in Figure 15.

Throughout the postwar period, Poland has been an important producer of railroad locomotives and rolling stock. It is second only to the U.S.S.R. in the production of freight cars in the Communist world. Although production declined during the 1966-70 plan period, by 1971 output had nearly recovered to the peak level of 16,600 units produced in 1966. Generally, about two-fifths of the freight car output is exported, predominantly to the Soviet Union. Until 1960, Poland produced and exported large numbers of steam locomotives, first to the U.S.S.R. and later to the Peoples' Republic of China. Since 1961, however, it has been building mainly diesel and electric locomotives for domestic use.

Poland ranks twelfth in the world in shipbuilding. Among Communist countries it is second only to the Soviet Union. Output at Polish shipyards—confined mainly to three major yards at Gdynia, Gdansk, and Szczecin (Stettin)—almost quadrupled during 1955-66 (to 433,000 d.w.t.) and increased another 62% through 1972 (to 700,800 d.w.t.).

The rapid growth in shipbuilding capacity has enabled Poland to increase the size of its own merchant fleet to 2.2 million d.w.t. and to sell a considerable number of ships abroad. About 75% of Polish-manufactured ships are exported, mainly to the U.S.S.R. During 1960-70, the Soviet Union purchased 77% of total Polish exports of ships, representing an aggregate capacity of 2,331,000 d.w.t. The Poles now claim that every fifth ship in the Soviet nonmilitary fleet is Polish-built. In 1971, the number of ships delivered to the U.S.S.R. dropped sharply, while sales to the industrial West—which had been negligible—totaled 229,000 d.w.t., of which 119,000 d.w.t. went to Norway and 64,000 d.w.t. went to West Germany.

Polish shipyards build and export a variety of small- to medium-class ships, including ore and coal carriers, tramps, coasters, general cargo, timber carriers, tankers, cutters, factory trawlers, training ships, and scientific-research vessels. So far, the largest ship launched is a 55,000-ton general cargo vessel. The Gdynia shipyard started construction of a 105,000-ton vessel in 1972 and has begun preparations to build a larger building dock, where 200,000-ton and 400,000-ton vessels are eventually to be built.

Poland has a small but rapidly expanding motor vehicle industry. In 1971, the industry manufactured 90,000 passenger cars, 49,600 trucks, 9,900 buses, 41,200 tractors, and 176,600 motorcycles and motor scooters.

To reduce a growing backlog of demand and to boost foreign sales of motor vehicles, Poland in 1967 embarked on a major program to expand and modernize its capacity for manufacturing passenger cars. The program has centered on the renovation of production facilities at the *Fabryka Samochodow Osobowych* plant at Zeran on the banks of the Vistula near Warsaw. In 1971 the Zeran plant turned out about 60,000 "Polish Fiats," the Polish version of the Fiat 125. In October 1971, Poland signed a cooperation agreement with Fiat for the construction in Poland of a new model car, the Fiat 126, a relatively low-priced small car, which will be produced in new facilities at Bielsko-Biala and Tychy. About 75% of the Italian supplies of equipment for the plant are to be repaid by deliveries of Fiat 126 components produced in Poland. Annual production is to begin at 3,000 units in 1973 and is to reach 150,000 units by 1979. Poland hopes to boost the total number of automobiles per 1,000 inhabitants from 15 in 1970 to 25 in 1975.

Western technology is playing an increasingly important role in the Polish motor vehicle industry. In addition to the new Fiat deal, Poland has recently signed an agreement with the French firm of Berliet for the modernization of the Jelcz bus plant. The capacity of the plant eventually will be expanded to 5,000 buses annually, of which 1,700 will be produced under the Berliet license. The assembly of buses began in December 1972, largely from imported components. By 1975, more than one-half of the parts are to be made in Poland. Licenses purchased before 1970 include Weber carburetors, Leyland diesel engines for trucks, Armstrong shock absorbers, and Westinghouse brakes.

Large amounts of agricultural machinery, mainly for domestic use, are produced in Poland. The country also exports and imports some items, including tractors and harvesters. Branches of the machine building industry that produced agricultural equipment received a high priority during 1966-70 in order to support the high rate of investment and mechanization in agriculture. Poland currently is upgrading certain types of tractors and combines with the installation of high-compression Leyland engines, manufactured under license.

Poland produces much of its own mining, metallurgical, and construction equipment as well as textile machinery. It also exports a number of items in these categories, but it still depends on imports for many types of modern special purpose equipment. It buys such items as giant conveyors from East Germany, truck-mounted cranes from Czecho-

slovakia, and modern textile machinery from Western Europe. Production sharing ventures with Jones Cranes and Cole Cranes of the United Kingdom, Stetter of West Germany, Steyr-Daimler-Puch of Austria, and Koehring International and International Harvester of the United States provide for cooperation in the production of heavy-duty cranes, concrete mixers, trucks for construction sites, hydraulic building machinery, and heavy tractors and crawlers.

Poland also has imported a considerable amount of chemical machinery. Throughout the 1960's a high priority was given to expansion of the chemical industry, and Poland imported chemical equipment from Czechoslovakia, East Germany, and the U.S.S.R., as well as from Western countries, particularly West Germany, the United Kingdom, and France.

Poland has traditionally been an important manufacturer of machine tools, producing about 350 different types in 1971. Many of the tools lack the precision, fine tolerances, and durability of Western tools, however, and others seem to be over-engineered. Nevertheless, almost one-half of all types of machine tools are exported, and machine tools are almost the only type of machinery and equipment for which the Poles have developed a steady export market in the industrial West. Since 1965, a growing number of agreements have been signed with Western industrial firms in the hope of improving the country's ability to sell machinery outside the Communist countries. Some agreements provide for Poland to manufacture certain items of machinery under Western license. In other cases, Poland has contracted to produce components of complete installations to be sold jointly with Western firms.

Poland produces sizable quantities of military equipment for its own use and for export to the U.S.S.R. It is the second-largest producer of conventional armaments among the East European Communist countries, after Czechoslovakia. Poland manufactures tanks, armored personnel carriers, military aircraft, medium landing ships, submarine chasers, and naval auxiliaries. The country also imports large amounts of military equipment from the U.S.S.R., the value of which was estimated at between \$175 million and \$200 million in 1971.

b. Chemicals

The Polish chemical industry produces a wide variety of products, ranging from basic chemicals to more sophisticated goods such as chemical fibers, synthetic rubber, and pharmaceuticals (Figure 16). The industry has been granted a high priority in

FIGURE 16. Production of principal chemicals and chemical products (U/OU)
(Thousand tons, except as indicated)

	1950	1955	1960	1965	1970	1971
Sulfuric acid (100% basis).....	285	450	685	1,062	1,901	2,255
Soda ash (98% basis).....	149	219	533	614	657	682
Caustic soda (96% basis).....	65	102	174	224	326	331
Calcium carbide (75% basis).....	172	211	321	488	533	544
Nitrogenous fertilizer (as N).....	78	154	270	394	1,030	1,081
Phosphorus fertilizer (as P ₂ O ₅).....	82	132	207	344	599	705
Chemical fibers.....	24.8	53.9	77.8	104	138	151
Synthetic fibers.....	<i>Insig</i>	0.5	4.5	21.6	53.8	66.2
Plastics.....	3.5	11.7	55.4	118	269	<i>na</i>
Polyvinyl chloride.....	0	0	13.4	26.4	85.0	93.8
Pharmaceuticals (million zlotys*).....	163	963	2,751	6,717	12,504	<i>na</i>
Synthetic rubber.....	0	0	20.2	39.2	61.7	66.2

na Data not available.

*1 July 1960 prices.

economic plans throughout the postwar period and has received a sizable share of total industrial investment. During 1961-71, this share amounted to about 14%.

The output of the chemical industry has increased rapidly. In 1971, it was more than 18 times that of 1950 and twice that of 1965. The industry has been exceeded in its rate of growth only by the machine building industry. In 1971 the chemical industry accounted for 9% of total industrial output, compared with 1.6% in 1950 and 5.5% in 1960.

Poland produces large amounts of sulfuric acid, synthetic ammonia, nitric acid, caustic soda, chlorine, and hydrochloric acid. Recent emphasis has been placed on increasing the production of fertilizers to support agriculture and also for export, and on the development of a large-scale petrochemical industry to provide the basis for an increased output of plastics, synthetic fibers, and synthetic rubber. Petrochemical facilities at the Plock refinery have started production, using petroleum from the U.S.S.R. Poland's natural gas deposits may also be used for petrochemical production.

Poland is by far the largest producer of nitrogenous and phosphatic fertilizers in Communist Eastern Europe. In 1971, the output of nitrogenous fertilizer was nearly three times as large as in 1965, and the output of phosphatic fertilizer was twice as great. Phosphates and apatite from the U.S.S.R. are used in making phosphatic fertilizer. The entire supply of potash fertilizer is imported, mainly from the U.S.S.R. and East Germany. Spain and West Germany supply smaller amounts.

Poland produces more than 80% of the chemical fibers used domestically. More than half of the

chemical fiber output consists of rayon. The production of synthetics, such as nylon, orlon, and dacron, has been growing rapidly, while the production of rayon has remained about the same since 1965.

Poland started producing synthetic rubber in 1959. By 1971, output covered more than 40% of domestic consumption. In 1965, Poland purchased a plant of Western origin to produce butadiene for use in the manufacture of synthetic rubber, thus eliminating the need to import this material.

Production of plastics has been increasing rapidly. Output in 1971 was 2.6 times that of 1965, with the production of polyvinyl chloride more than tripling. Polyvinyl chloride, polyethylene, and polystyrene together made up 52% of the output in 1971.

c. Light industry

Light industry, including textiles, clothing and footwear, leather and fur processing, woodworking, and paper processing, represented almost 18% of gross industrial output in Poland in 1971. Output in this sector has grown far less rapidly than in the machinery and chemical industries.

Several branches of light industry were well developed before World War II, especially the textile industry, which was the focal point of Poland's industrialization in the late 19th century. Throughout the postwar period, however, light industry has been neglected in the distribution of investments, materials, and skilled management. During 1960-65, all branches of light industry together received only 8.3% of total industrial investment; this share was raised to 9.8% during 1966-71. Because of the low rate of investment, replacement of machinery and equipment

in this sector has been minimal and improvements in technology slow. Most investment has gone into the expansion of plants and equipment.

The level of technology and the quality of output in Polish light industry are low compared with those of Western countries. Few items produced are attractive enough or are of sufficiently high quality to be sold profitably in developed Western countries. Many items sold in the industrial West can be marketed only at unprofitably low prices; thus, the bulk of Poland's light industry exports go to other Communist countries. Principal exports are clothing, footwear, textiles, and furniture.

The low quality of output has also been a problem in the domestic market; it has discouraged the growth of sales beyond essential requirements and resulted in a rapid accumulation of stocks, particularly of clothing and household articles, during the 1960's. The Polish Government recognizes that the assortment, design, and quality of light industry goods must be improved if the country is to increase its exports and sell more profitably to the industrial West, meet increasing Soviet demand for high-quality consumer goods, and raise the level of living of the Polish population. The regime has already taken steps to encourage better marketing abroad. Restrictions on the use of labor have been removed, and export enterprises are being given easy access to investment funds for those opportunities that promise a quick return in foreign currency.

d. Food processing

The output of the large and diversified food processing industry accounted for about 18% of total industrial output in 1971. Its relative importance has declined considerably since 1950, when it accounted for about one-third of Poland's industrial output. Throughout the postwar period, growth of output in food processing, which is closely linked to the growth of agricultural production, has been the slowest of all sectors of industry except coal mining. In 1969, Poland exported 14% of its total output of foodstuffs of animal origin and 6% of its output of foodstuffs of vegetable origin. In 1971, exports included four-fifths of the domestic output of bacon and canned hams. About three-fourths of the exports of processed foods go to the industrial West. These exports account for about one-fourth of Poland's hard currency export earnings.

Poland gained considerable food-processing capacity, particularly in sugar refining, brewing, and distilling, with the acquisition of the former German territories. The industry has been subjected to much

the same neglect as light industry. It received only 6% of total investment in industry during 1950-55 and 9% during 1956-71. Recently, however, in an attempt to modernize the industry, especially the export-oriented sectors, the government decided to purchase Western equipment. Contracts have already been signed for two meat processing plants each from West Germany and the United States, two sausage plants from the United States, and five powdered milk plants from Italy.

e. Construction

Poland's construction industry has grown rapidly throughout the postwar period. The total volume of construction in 1971 was about twice the volume in 1960 and nearly five times the volume in 1950. Private activity represented about 12% of the total volume of construction in 1971. Industrial building has accounted for the largest part of construction. Residential building accounted for 17% of the total value of construction in the socialized sector in 1971 and farm building for somewhat less than 4%.

Residential construction has been severely neglected, and new housing construction has not kept much ahead of the retirement of old stock. Official census data indicate that between 1950 and 1960 there was virtually no change in the number of persons per room and a slight increase in the ratio of families to dwellings in urban areas. Between 1960 and 1970, however, there was a slight decline in the ratio of families to dwellings—from 1.17 to 1.14—for the whole country, and a substantial decline in the number of persons per room—from 1.66 to 1.37. Useful floorspace in 1970 was less than 13 square meters per capita, as compared with about 18 square meters in Czechoslovakia and East Germany.

Even though housing is generally considered Poland's "number one welfare problem," Gierk has resigned himself to a worsening of the housing shortage through the mid-1970's. The planned rate of growth in housing construction by the socialized sector (4.7% a year) is barely above the actual 1966-70 rate. The 1.1 million dwellings to be built by 1975 are, by Polish estimates, 600,000 fewer than needed simply to house the expected additional population. In fact, the Poles face a formidable task in their attempt to eliminate the housing shortage by 1990, especially considering that resources will have to be devoted to improving the size and quality of dwellings as well as increasing their number.

The housing problem in Poland has been compounded by shortages of repair facilities and materials. Rents set by the government are so low that

they fail to provide adequate funds to cover the cost of current repairs. Failure to make the necessary repairs has resulted in substantial losses of dwelling space.

In addition to a shortage of housing, Gierek is faced with the problem of inadequate facilities, especially in rural areas. Although Poland has made great strides in this area, there is still much room for improvement, as shown in the following tabulation of dwellings supplied with various facilities (in percentages of respective totals):

	1960	1966	1970
Urban areas:			
Piped-in water	55	67	75
Water closet	36	48	56
Bathroom	26	40	na
Gas supply	34	43	48
Central heating	13	25	na
Rural areas:			
Piped-in water	4	6	12
Water closet	2	3	5
Electricity	62	84	na
Gas supply	Negl.	Negl.	1

na Data not available.

Because labor is generally plentiful, mechanization of the construction industry has not advanced as far as in most other East European Communist countries. Recent attempts to raise labor productivity are reflected in six production sharing ventures between Poland and Western firms in the construction equipment field. These agreements provide for cooperation in the production of heavy-duty cranes, concrete mixers, trucks for construction sites, hydraulic building machinery, heavy tractors and crawlers, and axles for construction equipment and vehicles. Two of the agreements are with Koehring International and International Harvester of the United States.

5. Domestic trade (U/OU)

The bulk of Poland's domestic trade is carried out by socialized wholesale and retail trade organizations, at prices fixed or regulated by the state. In 1971, private trade accounted for only 1.1% of total retail sales and 2.2% of the total spent at eating places.

Trade in producer goods among state industrial enterprises is carried out by the enterprises themselves or by marketing organizations attached to industrial associations. Goods are sold at prices that are fixed by the producing enterprise, association, or ministry, and are intended to reflect to some degree both production costs and level of demand. Consumer goods produced in the socialized economy are distributed through state and cooperative wholesale and retail organizations. Retail prices are set to achieve the social goal of maintaining low prices for basic commodities and to balance projected supply and demand.

The Ministry of Internal Trade directly controls a large share of wholesale trade and some retail trade. Organizations attached to the ministry conduct wholesale trade in most ordinary consumer items such as textiles, clothing, food, and housewares; they conduct both wholesale and retail trade in certain specialized items such as jewelry, pharmaceuticals, and cultural materials. Socialized retail trade is organized in separate urban and rural networks. The urban retail network includes state retail stores, most of which are subordinate to local people's councils, and cooperative stores under the state-controlled Union of Consumer Cooperatives. The former account for about two-thirds of urban retail sales and the latter for about one-third. Rural retail trade is dominated by the Peasant Self-Aid Cooperative. Rural cooperative stores supply peasants not only with consumer goods but also with seed, fertilizer, and building materials. Restaurants are part of the state trade network in both urban and rural areas.

Because of the retention of private ownership in agriculture, state purchases from the private sector have a much larger role in Poland than in other Communist countries. These state purchases are made by procurement organizations attached to the Ministry of Food Industry and Purchases and the Ministry of Internal Trade. Compulsory deliveries, which once made up a sizable share of the purchases, were abolished on 1 January 1972. Most procurement is done under contract. Under this system, a farmer agrees in advance to sell a certain quantity of his produce at the price offered by the state.

Private or free-market trade in Poland includes direct sales by farmers to private traders and individual consumers and sales by private artisans and retailers. Although it comprises only a small share of total trade, private trade is an important supplement to the socialized trade system, especially in providing fresh produce, good-quality clothing, and repair services to the population. The role of private retail outlets has varied considerably since 1950, when they accounted for 17.9% of all retail sales. Efforts to extend state control over the domestic trade network reduced the share of private outlets to 2.3% in 1956. Following the 1956 uprising, however, the Gomulka regime adopted a more liberal policy toward private retail trade in an effort to improve the supply of goods and services to the population, and the share of retail sales made in private outlets rose to 4.7% in 1957. Since then, however, private retail trade has declined, while socialized trade has increased rapidly. By 1971, the share of private outlets in aggregate retail sales dropped to 1.1%.

At the end of 1971, there were 198,593 retail outlets and 14,619 eating places, compared to 159,682 and 10,235, respectively, in 1960. Most retail stores are

small and fairly specialized, although in recent years Poland has built an increasing number of department stores, self-service food stores, supermarkets that sell both food and nonfood items, and mail-order houses. Certain retail outlets, such as gasoline stations, are too few to serve adequately the needs of the population; therefore, the government has occasionally encouraged private establishments as a means of reducing such inadequacies and increasing the number of jobs for the growing labor force. As of the end of 1972 there were no visible results.

Retail sales increased by about 7.2% a year during 1961-70 (a little more than 6% per capita), about the same rate as that achieved during 1956-60. Under Gierk, retail sales rose 7.8% in 1971 and 12.5% in 1972. Food and beverages comprised 43% of retail sales in the socialized trade network in 1971, and nonfood consumer goods accounted for 42%. Nonconsumer goods, such as building materials, agricultural tools and machinery, fertilizers, seeds, and oil products, accounted for 15%. In the rural trade network, nonconsumer goods accounted for 32% of all retail purchases. Sales of nonfood items have grown somewhat faster than sales of foodstuffs.

Retail prices of consumer goods and services rose about 14% between 1960 and 1970. Gomulka's decision to increase prices sharply just before Christmas precipitated the 1970 riots. Not only were prices of food and fuel to rise sharply, but also prices of building materials, cotton, and textiles. Gierk rescinded the food price increases and froze prices for 2 years. This freeze was extended through 1973 and again through 1974. As a result, retail prices of consumer goods sold exclusively through the socialized network dropped 0.8% in 1971, while retail prices of consumer goods sold throughout the entire network rose only 0.5%. Prices of foodstuffs declined 0.1%, and prices of nonfood items dropped 2.6%. At the same time, retail prices of nonconsumer goods rose 4.9%, largely because of the substantial increases in prices of certain construction materials.

Under Gierk, the 1971-75 goals for raising the standard of living were revised slightly upward. Personal consumption is now slated to increase at an average annual rate of 7%, compared with a rate of 5% achieved during 1966-70. Gierk has, however, told the workers that substantial improvements probably cannot be achieved even by 1980.

Gierk's appeal for patience and understanding was helped by favorable economic trends in his first two years. Personal consumption rose strongly in 1971-72, stimulated by substantial imports of meat—made possible by a Soviet loan of \$100 million in hard currency; larger than usual imports of grain—much of it from the West; and a substantial increase in imports of manufactured consumer goods.

In spite of the fairly rapid growth of incomes and retail purchases in Poland, there is still unsatisfied demand for high-quality goods of all types, including foodstuffs. Although sales of foods have risen less rapidly than sales of nonfood items, there have been rapid increases in the consumption of meat, animal fats, eggs, tea, chocolate, and alcoholic beverages. The consumption of grain products and potatoes has declined. There is still unsatisfied demand for better cuts of meat, milk products (including cheeses), fresh fruits and vegetables, and imported specialty foods. The basic demand for clothing has been satisfied, as well as the demand for most consumer durables such as vacuum cleaners, stoves, refrigerators, washing machines, bicycles, and motor scooters. There is considerable unsatisfied demand for attractive, high-style clothing and for automobiles. The new, relatively inexpensive Fiat 126—to be manufactured under a cooperative arrangement with Fiat of Italy—will help fulfill some of the demand for automobiles, but ownership of an automobile by the average citizen is still a far-distant goal. The government has capitalized to some extent on the demand for high-quality consumer goods by importing Western goods and reselling them in special stores to Poles who have received cash gifts of convertible currency from friends and relatives abroad. The inability to satisfy local demand has also resulted in a considerable black market for Western goods in Poland.

More serious than the unsatisfied demand for goods is the housing shortage. The rate of housing construction is still so low that even those with sufficient money must generally wait a long time to get an apartment—5 years or more in the larger cities. In order to ease the inflationary potential of this situation, the government has encouraged people to save for downpayments on cooperative apartments. Families with a per capita monthly income of 1,500 zlotys or more are ineligible for inexpensive socialized housing and must purchase cooperative apartments in order to get into a new building.

There is also a large unsatisfied demand for services in Poland, particularly construction and repair services. It is common for carpenters, bricklayers, plumbers, and shoe repairmen employed in socialized enterprises to do private work on the side, usually using tools and materials taken from the enterprises.

C. Economic policy and management (U/OU)

1. Policy

Poland's major economic goals throughout the postwar period have been rapid economic growth and the development of modern industry. After the consolidation of Communist control over most of the

FIGURE 17. Distribution of investments, by economic sector* (U/OU)
(Percent of total)

	1950-55	1956-60	1961-65	1966-70	1971
Industry.....	43.7	38.7	40.2	39.4	40.2
Construction.....	1.8	2.6	3.1	4.0	3.6
Agriculture.....	10.1	12.5	13.9	16.1	15.4
Transportation and communications.....	12.1	8.9	10.3	11.2	13.0
Trade.....	3.0	2.9	2.9	3.2	2.2
Housing.....	13.8	21.7	18.0	15.5	15.6
Education, science, culture, and community services.....	9.6	10.8	10.4	9.2	8.5
Other.....	5.7	1.8	1.1	1.4	1.4
Total.....	100.0	100.0	100.0	100.0	100.0

*At 1971 prices. Components may not add to totals shown because of rounding.

economy in the late 1940's, Poland adopted Stalinist-type economic policies aimed at increasing industrial output as rapidly as possible with little regard for the development of other sectors of the economy or for the general standard of living.

In the latter half of the 1950's, Poland backed away from the Stalinist model, partly for ideological reasons and partly because of the severe economic difficulties created by forced growth. In 1956-60 the overall rate of growth of investments was reduced, and there was some cutback in the share of investments going into industry. This reduction, along with a sharp drop in the share allocated to defense and administration, allowed a rapid rise in outlays for housing and agriculture (Figure 17). Within industry there was some shift in priorities, away from heavy industry and into the material and consumer goods sectors that had been neglected in the earlier years (Figure 18). The regime, apparently satisfied that it had largely

corrected the imbalances, sharply reduced the share of investment going into housing in 1961-65 and again in 1966-70; this compounded the already serious housing shortage. The share of investment going to agriculture, on the other hand, continued to increase during 1961-70 but dropped slightly in 1971.

Except during the mid-1950's, investments have risen much more rapidly than consumption. Starting from a low base in 1950, investments rose at an average annual rate of 11% in 1951-55, but dropped to a rate of 9% in 1956-60 and to 7% during 1961-71. On the other hand, funds available for personal consumption rose at an average annual rate of 5% during 1951-60 (mainly because of the 10% annual growth reportedly achieved during 1954-57), 3% during 1961-65, and 4% during 1966-70. As the result of a decline in the rate of population growth after 1965, per capita personal consumption rose at a rate of over 3.5% in 1966-70, as compared with 2% in the

FIGURE 18. Distribution of investment in socialized industry (U/OU)
(Percent of total)

	1956-60*	1961-65**	1966-70**	1971**
Electric power.....	11.5	12.1	10.1	11.5
Coal.....	19.0	15.3	10.0	9.8
Other fuels.....		7.0	6.4	6.2
Ferrous mining and metallurgy.....		9.6	8.3	6.6
Nonferrous mining and metallurgy.....	3.0	3.4	5.0	6.0
Metal processing.....	14.5	3.4	4.1	4.9
Machinery.....		11.8	14.8	16.7
Chemicals.....	11.6	12.5	15.9	11.3
Construction materials.....	3.3	6.4	6.0	6.3
Wood processing and paper.....	3.8	3.7	3.9	3.5
Textiles and clothing.....	4.8	4.1	5.1	5.8
Food processing.....	9.0	8.7	8.6	7.8
Other.....	4.9	3.3	3.5	2.3
Total.....	100.0	100.0	100.0	100.0

*At 1961 prices.

**At 1971 prices.

FIGURE 19. Economic indicators (U/OU)
(Average annual percentage increase)

	1966-70	1971-75	1971-72
	ACTUAL	PLAN*	ACTUAL
National income.....	6.0	7.0	8.9
Personal consumption.....	5.1	6.9	na
Investment.....	8.0	7.7	**14.8
Industrial production.....	8.3	8.5	**9.5
Heavy industry.....	9.0	8.6	**9.5
Consumer goods.....	6.3	8.2	**9.0
Agricultural production.....	1.8	3.6-3.9	5.9
Employment.....	2.6	2.2	na
Average real wage**.....	1.9	3.4	5.7
Labor productivity in industry.....	4.6	5.4	5.7
Housing construction.....	4.8	4.7	na
Exports.....	9.2	9.2	13.1
Of which:			
To industrial West.....	9.6	8.9	14.6
Imports.....	8.2	9.7	16.6
Of which:			
From industrial West.....	10.4	11.8	36.0

na Data not available.

*July 1972 version.

**Socialized sector only.

preceding period. The Gierk regime, in its first year, managed to increase per capita consumption 5%.

Gierk's long-term economic policy is aimed at raising both the rate of economic growth and the share of output devoted to consumer welfare. Gierk's goals for 1971-75, as announced in July 1972, are generally higher than in Gomulka's draft of 1969. The plan is fairly ambitious in that it projects a more rapid rise in national income than was achieved in 1966-70, while at the same time calling for a slower growth of investment and employment. Real wages and consumption are also planned to grow more rapidly than in 1966-70 (Figure 19).

In recent years, the Polish Government, like those of the other East European Communist countries, became increasingly concerned with the widening gap in technology, productivity, and levels of living between Eastern and Western Europe. Under Gomulka, controls over investment were tightened, strict ceilings were placed on employment levels in an attempt to increase labor efficiency and productivity, and plans were made to reorient industrial production to satisfy consumer interests more fully. Gomulka also expressed the intention to increase imports of technologically-advanced machinery and equipment from the West. Gierk has continued these policies but has discarded the ceilings on employment in response to the political need for full employment. The desire to increase imports of advanced technology has become even more pronounced under Gierk.

2. Economic planning and administration

The basic goals of economic development and the general policies to be followed in implementing them are decided at the top levels of the Communist Party (Polish United Workers Party). The regime sets forth the goals for economic development in plans that cover, in varying detail, periods ranging from a month to 5 years or more. The principal guidelines for economic development have been incorporated in national economic plans, of which there have been five during the postwar period, covering the following periods: 1950-55, 1956-60, 1961-65, 1966-70, and 1971-75. Annual plans established in the context of the 5-year plans, and quarterly and monthly plans placed in the context of the annual plans, set forth operational targets for the producing units in the economy.

The plans establish goals for nearly all types of economic activity. Production is specified in physical units for the most important items and in value terms for all sectors and branches of the economy. Targets also are set for employment, productivity, costs, investment, foreign trade, retail sales, transportation, state procurement of agricultural commodities, wages, real income, consumption, and national income. The 5-year plans also contain regional plans for each province and for the major cities. In support of the annual economic plans, the Ministry of Finance draws up financial plans that outline the flow of funds within the economy to correspond to production, investment, and consumption goals. The government tries to rely on indirect controls, prices, and persuasion to implement the plans for personal consumption and for output in the nonsocialized sectors of the economy—mainly agriculture. Direct administrative controls are exercised over most investments and over the socialized economy, which includes nearly all production outside of agriculture.

The lines of control in the socialized sector extend from the ministries, through industrial associations, to the enterprises. There are several ministries that oversee production units in socialized industry and construction, including the Ministries of Mining and Power, Heavy Industry, Chemical Industry, Light Industry, Engineering Industry, Food Industry and Procurement, Forestry and Timber Industry, and Construction and Building Materials. Other ministries also may have some responsibility for production; for example, the Ministry of Communications oversees the manufacture of telephone instruments and switching equipment by TELKOM Association.

The industrial associations, formed in 1958, comprise groups of enterprises engaged in similar lines of production; e.g., iron and steel, machine tools, and textiles. The associations have gradually taken over some of the functions and authority of both the enterprises and the ministries; the ministries now have

relatively little responsibility for planning and direct administration of production. The associations perform the main tasks of assigning goals and issuing directives to enterprises and allocating investment funds within individual branches of industry. In many cases, they also perform marketing and research functions.

Another level of control was set up by an October 1969 decree which authorized the establishment of combines—groupings of enterprises engaged in the production of parts and components for a specific final product. A combine is supposedly responsible for all its constituent units and is expected to organize research and development, draft plans for the purchase of licenses, and conduct market research. It may be directly responsible to a ministry, or it may remain under the authority of an industrial association.

Economic plans are worked out by the State Planning Commission (attached to the Council of Ministers), partly on the basis of projections of capacity made by the enterprises, combines, associations, and ministries. General goals are established by the Commission for the various branches of industry. These are generally routed through the ministries to the appropriate industrial associations, which then allocate their share of investment funds, materials, and labor, and assign various goals among the member enterprises. Each association and enterprise makes up its own economic plans on the basis of the goals and directives handed down from above. The enterprises and associations have considerable freedom of action within the limitations imposed by these goals and directives.

3. Finance

Before Gomulka's accession to power, all investments in the postwar Polish economy, except some private investments in agriculture, had been made by the state. The bulk of state investment was allocated directly through the state budget, and self-financing by enterprises was small. State enterprises paid most of their earnings into the state budget. After 1957, enterprises were allowed to retain a small portion of their earnings in the form of enterprise funds and development funds, as a bonus for fulfilling goals and increasing their profits. These funds were to be used primarily for worker housing and recreational facilities rather than for reinvestment in production. The use of bank credit by enterprises was limited to working capital and to certain small loans for investments that promised a fast return. The major role of banks in the investment process was to disburse budgetary funds as allocated by the economic and financial plans and to oversee enterprise use of these funds.

Since 1965, the use of retained earnings and interest-bearing bank credit to finance enterprise investment has increased, thereby reducing the amount of time spent by enterprises in obtaining investment funds as compared with the previous system. The use of retained earnings and bank credit also made enterprise management conscious of capital costs. All large investment projects, however, are still financed directly through the state budget.

Slightly less than one-third of planned budget expenditures in FY73⁴ are allocated to finance production, transportation, and trade under the category of financing "enterprises and other units of the socialized economy." Other budgetary expenditures include 19% for social and cultural services, about 6% for social insurance payments, 8% for national defense, and 5% for administration.

The largest part of budget revenue—77% of that planned in 1973—has come from socialized enterprises in the form of turnover (sales) taxes on most consumer goods and many producer goods, and from transfers of a large part of the profits of producing and trading enterprises. About 6% of budget revenues in 1973 are to come from social insurance collections, 7% from taxes on wages and salaries, and 2% from taxes on private property, of which the largest component is the land tax in agriculture. Most of the residual revenues originate in state borrowing, including lotteries.

The Polish banking system, under the Ministry of Finance, includes a number of banks, all of which have branches throughout the country. On 1 January 1970, this system underwent its first major reform in more than two decades. The key reform provided for the amalgamation of the Polish National Bank and the now defunct Investment Bank. As before, the National Bank performs the traditional functions of central banks in the non-Communist countries and controls the current operations of industrial enterprises. It has also assumed a major new role in investment financing, previously accorded to the Investment Bank. The Polish National Bank administers all nonagricultural investment funds provided for in the state budget and controls the operations of construction enterprises. By creating a single authority with overall responsibility for initial investment decisions, working capital, and investment refinancing, the Polish planners evidently hope to curtail the widespread practice of exorbitant cost overruns.

The reform also enlarged considerably the responsibilities of the General Savings Bank (*Powszechna Kasa Oszczednosci*—PKO), which, until

⁴Poland's fiscal year is the calendar year.

1 January 1970, was restricted to holding checking and savings accounts of the population. The PKO now also provides credits for private housing construction and major home repairs, formerly functions of the Investment Bank, and provides credits for installment sales in place of the now-defunct Installment Sales Organization. A branch of the PKO, the Bank of the Polish Welfare Fund, handles transfers between Poles living abroad and their families in Poland.

Poland also has a number of savings and loan cooperatives that operate in much the same fashion as Western savings and loan banks—holding savings accounts and issuing short-term credits. Total savings deposits in the PKO and savings and credit cooperatives, together with loan-and-relief funds of trade unions, have grown rapidly; they increased about sevenfold during 1956-60 and sixfold during 1961-71, totaling approximately 149 billion zlotys at the end of 1971. The per capita volume of savings deposits in Poland is currently about 5.6 times the average per capita monthly gross income.

Other banks in Poland include the Bank of Commerce, which handles all payments and settlements connected with international commodity trade and services. The Bank of Agriculture administers the Agricultural Development Fund, handles budget-financed investments in agriculture, and provides credits to enterprises subordinate to the Association of the Timber and Timber Products industry.

All property and personal insurance in Poland is issued by the General Insurance Agency, which is owned by the state and directed by the Ministry of Finance.

4. Economic reforms

Poland was the first Communist country, aside from Yugoslavia, to experiment with economic reform. In the more liberal atmosphere following the 1956 revolt and the coming to power of Gomulka, there was widespread criticism of the highly-centralized, Soviet-type, command economy. A reform program known as the New Economic Model was published in June 1957, and various elements of it went into effect during 1957-58. Although changes were less far-reaching in practice than on paper, the scope of central planning and control was reduced and decisionmaking in the economy was partially decentralized. Most of the impetus for reform was lost after 1958. Economic conditions improved, and the regime tightened central controls in 1959-60 in order to push investments.

By 1963, Polish interest in economic reform was revived, largely because of the failures evident in existing economic policies, but also in response to the adoption of reform programs in other Communist countries. The leadership charted a program of economic reform, approved it at the Fourth Party Congress in November 1964, and proposed to implement it during 1966-70. The program contained most of the major features of reform programs in the other Communist countries: some reduction of central planning and control, greater use of the profit motive to guide production, decentralization of investment, and a strengthening of management. It also reduced direct investment allocations from the budget, in favor of financing investments through the retained earnings of enterprises and the use of bank credit.

The Polish leadership at the Fifth Party Congress in November 1968 announced a new concept of "planning from the bottom upward." In essence, the new concept provided for an enlarged role for individual enterprises in the drafting of the 1971-75 plan by requiring each enterprise to draft its own 5-year plan for development, as well as several alternative versions, on the basis of general guidelines from the State Planning Commission. By nominally enlarging each enterprise's role in plan formulation, the national planners wished to inspire managers and workers alike to greater on-the-job efforts, and also to diffuse responsibility for shortcomings that might appear in the plan's execution. Besides its traditional role in the planning process, the State Planning Commission assumed new responsibilities in the area of technological forecasting.

In the winter of 1969-70, Gomulka gave in to Party pressure for further modifications. A key part of the program consisted of tightening control of employment and introducing incentive wages and bonuses into industry. Implementation of the reforms led to drastic reductions in overtime work in 1970, and to a slowdown in the rise of employment and real wages. At that time, the regime unveiled its new incentives system, a complicated formula for tying bonuses to profitability, among other things. A special formula was devised for shipbuilding—linking bonuses in part to the sales prices received for ships. About 80% of ship output through 1975 was targeted for export, and the workers resented having their bonuses depend on factors outside their control.

The announcement of retail price increases—which sparked the December 1970 riots—was in line with the long-standing wish of planners and economists to revamp the price structure to channel excess demand to consumer manufactures other than the heavily

subsidized food products. By the end of 1970, excessive demands for meat and other agricultural products seemed to make such action necessary.

When Gierk gained power after the riots, he scrapped the incentives system (except for experiments earlier under way in selected enterprises) and eventually rescinded the food price increases. In 1972 the regime came up with a new program for improving the system of planning and management, which gave greater responsibility to the enterprises and also strengthened central controls. In 1973, 35 Polish industrial enterprises, associations, and combines were to begin experimentation with their planning and management systems. Among other things, these enterprises would be able to decide on the use of investments—to be financed out of their own profits or from bank loans. So far 28 large economic units and all state-owned trading organizations have begun such experimentation, and modifications are to be introduced gradually to other economic units. While realizing it is too early to evaluate results of the experiments, the Poles claim that the enterprises so far involved have attained exceptional increases in production.

5. Manpower

In addition to the high rate of capital investment, an important factor in Poland's ability to maintain high rates of industrial growth has been the existence of labor reserves that fed the expansion of industrial employment throughout most of the postwar period. In the early 1950's, Poland was able to increase its industrial labor force rapidly by transferring large numbers of workers from agriculture: between 1950 and 1955 the industrial labor force increased by an estimated 587,000 (4.7% a year), while the agricultural labor force declined by about 644,000 (Figure 20). Wholesale transfers of labor from agriculture to industry stopped after 1956, when the excess agricultural employment was eliminated and the decision of the Communist Party to retain private

ownership of farming encouraged people to stay in farming. In later years, the government took more affirmative action to keep workers on the farms by strengthening monetary and educational incentives for Polish youth, with very limited success.

In the 1960's a natural increase in the working population, more than any other factor, enabled the country to maintain a high rate of economic growth. Poland had one of the highest birth rates in Europe for a decade and a half following World War II, and roughly one-half million Polish youth have come of working age annually since 1963; most of these have found jobs outside agriculture. During 1960-72, the total labor force grew at an estimated annual average rate of 1.4%, and the industrial labor force increased at a rate of 3.5%.

The pattern of employment after 1965 ran counter to the Gomulka regime's intention—expressed in advance of the 1966-70 plan—to encourage an expansion of small-scale industries requiring negligible investments and of other labor-intensive enterprises. Instead, the rapid growth of the industrial labor force occurred mainly in heavily capitalized industries—machine building, transportation equipment, metals, and chemicals. The more labor-intensive industries, such as foodstuffs, textiles, and fuels, helped somewhat in expanding employment, but at more modest rates.

The rapid expansion of the labor force has been a mixed blessing. Poland was able to increase industrial output rapidly simply by adding to its industrial labor force, and thus it did not face the need to modernize its industries and increase their efficiency with the same degree of urgency as other East European Communist countries. As a result, most of Poland's industrial plant is in urgent need of modernization and the organization of employees within plants often lacks a rational basis. Excess employment in some industries also has adversely affected labor discipline; because a Polish worker fired from one job can easily find another, the problems of absenteeism, alcoholism, and indifference on the job are common.

FIGURE 20. Estimated labor force* (U/OU)
(Thousands of persons)

	1950	1955	1960	1965	1970	1971	1972
Total.....	12,718	13,372	14,129	15,209	16,346	16,556	16,765
Agriculture.....	7,113	6,469	6,659	6,388	6,130	6,080	6,031
Nonagricultural sectors.....	5,605	6,903	7,470	8,821	10,216	10,476	10,734
Industry.....	2,282	2,869	3,192	3,867	4,554	4,690	4,826
Other.....	3,323	4,034	4,278	4,954	5,662	5,786	5,908

*Data as of 1 July of years shown.

In the late 1960's, Gomulka recognized the need to place ceilings on employment in an attempt to increase efficiency. Upon assuming power after the workers' riots of December 1970, Gierk reversed Gomulka's decision and opted for full employment. The regime saw the need to create some 1.7 million to 1.8 million new jobs during 1971-75 and announced its intention to keep investments high and greatly increase imports of capital equipment as a means of reaching that goal.

D. Foreign trade

Poland's foreign economic relations are oriented strongly toward the other Communist countries. Nearly two-thirds of its foreign trade is with Communist partners and about one-third is with the U.S.S.R. alone (Figure 21). Poland is a full member of the Council for Economic Mutual Assistance (CEMA) and participates in CEMA programs of cooperation, including coordination of national economic planning, exchange of scientific and technical information, joint development of economic resources, and specialization in certain lines of industrial production. Poland is a member of the CEMA Investment Bank, which was set up in July 1970 by agreement of all CEMA members except Romania, which joined in January 1971. (U/OU)

Poland's economic relations with non-Communist countries are also important. Trade with non-Communist countries has regularly accounted for somewhat more than one-third of the total annual trade since 1956 (Figure 22); among CEMA countries, only Romania has a higher proportion of trade with non-Communist countries. Poland became an associate member of the General Agreement on Tariffs and Trade (GATT) in 1961, and a full member in October 1967. (U/OU)

1. Size and structure (U/OU)

Because of its larger size and more diversified economy, Poland is less dependent on foreign trade than most other East European Communist countries. Its total trade in 1972 was US\$9.4 billion,⁵ or only 17% of GNP. Nevertheless, foreign trade is very important to Poland, and it has grown at almost double the average annual rate of growth of GNP. It increased at an average annual rate of 9.8% in 1961-70, 11% in 1971, and 19% in 1972.

Poland imports a variety of industrial raw materials—petroleum and petroleum products, iron

⁵Throughout this chapter foreign exchange zlotys are converted at the old rate of 4 zlotys per US\$1.00.



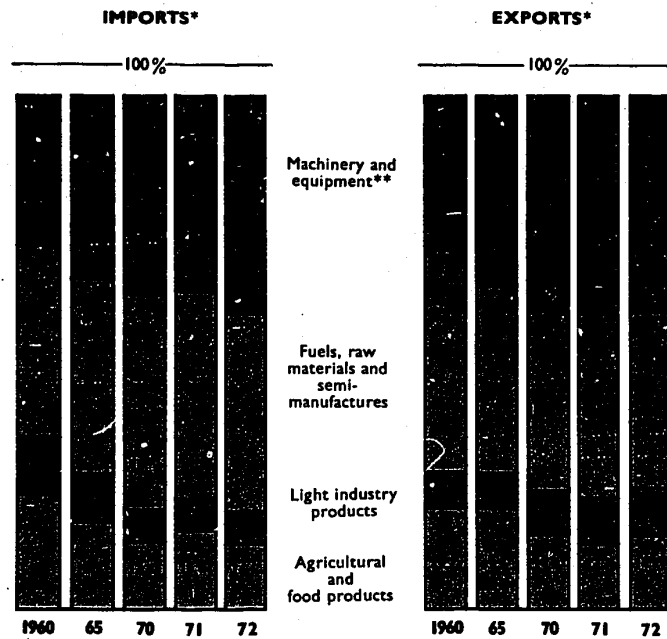
FIGURE 21. Geographic distribution of foreign trade, 1971 (U/OU)

ore, manganese, ferroalloys, potash, phosphate, and cotton—as well as specialized modern machinery and equipment. As shown in Figure 23, nearly one-half of Poland's imports have consisted of fuels, raw materials, semi-manufactures, and light industry products. Machinery and equipment imports accounted for 35% of total imports during the rapid industrialization drive of the early 1950's, but dropped to 27% during 1956-60, when more attention was given to raising personal consumption. Since 1960, the

FIGURE 22. Value of foreign trade (U/OU)
(Millions of U.S. dollars)

	TOTAL			COMMUNIST COUNTRIES			NON-COMMUNIST COUNTRIES		
	Imports	Exports	Balance	Imports	Exports	Balance	Imports	Exports	Balance
1950.....	668.1	634.2	-33.9	408.3	360.8	-47.4	259.8	273.4	13.5
1955.....	931.8	919.6	-12.1	604.9	578.3	-26.6	326.8	341.3	14.4
1960.....	1,494.9	1,325.5	-169.4	949.4	830.2	-119.2	545.5	495.3	-50.1
1961.....	1,686.7	1,503.5	-183.1	1,054.1	939.1	-115.0	632.5	564.4	-68.0
1962.....	1,885.4	1,646.1	-239.2	1,245.1	1,034.3	-211.8	639.2	611.8	-27.4
1963.....	1,979.0	1,770.0	-209.0	1,326.0	1,123.0	-202.9	653.0	618.9	-6.1
1964.....	2,072.2	2,096.4	24.1	1,306.1	1,350.6	44.4	766.1	745.8	-20.3
1965.....	2,340.3	2,227.8	-112.4	1,547.5	1,408.6	-138.8	792.8	819.1	26.3
1966.....	2,494.0	2,272.1	-221.9	1,603.8	1,400.1	-203.7	890.2	871.9	-18.2
1967.....	2,644.7	2,526.5	-118.2	1,736.9	1,611.2	-125.6	907.8	915.3	-7.4
1968.....	2,853.1	2,857.8	4.7	1,837.9	1,878.4	40.5	1,015.1	979.3	-35.8
1969.....	3,209.6	3,141.5	-68.1	2,113.5	2,063.9	-49.5	1,096.1	1,077.5	-18.5
1970.....	3,607.5	3,547.6	-59.9	2,473.0	2,266.0	-207.0	1,134.4	1,281.6	147.2
1971.....	4,037.6	3,872.3	-165.3	2,720.7	2,442.5	-278.1	1,316.9	1,429.7	112.8
1972.....	4,903.1	4,533.2	-369.9	3,000.9	2,881.2	-119.8	1,902.2	1,652.0	-250.2

NOTE—Components may not add to indicated totals because of rounding.



*Based on data in current prices.
**Including metal manufactures, which in 1971 represented 3% of total imports and exports.

FIGURE 23. Commodity structure of foreign trade, selected years (U/OU)

share of machinery imports has again risen in line with the country's renewed emphasis on industrial modernization and expansion, and in 1972 machinery accounted for 43% of total imports. The share of imports of food and agricultural products has declined since the mid-1960's and was 12% in 1972. In recent years grain has accounted for about two-fifths of Polish food imports.

The structure of Poland's exports has changed much more than that of its imports during the postwar period. The share of fuels, raw materials, and semimanufactures has declined considerably, while exports of machinery and equipment have risen as a percentage of total exports. The changes were due largely to the greatly reduced export role played by coal and, more importantly, to the intensive industrialization of the economy. In value terms, machinery exports almost quadrupled between 1960 and 1971.

Exports of agricultural and food products increased rapidly until 1964, stagnated through 1969, rose 18% in 1970, and dropped slightly in 1971. The stagnation was partly due to Poland's loss of traditional food markets in Western Europe—a loss primarily ascribed to restrictive European Economic Community policies on imports of food such as eggs and poultry. In addition, the government has made it a matter of policy to limit exports of those agricultural products that are in unusually short supply on the home market or that can be traded only at an economic loss or on marginally profitable terms.

The geographic distribution on Poland's trade with Communist and non-Communist countries has fluctuated within narrow limits since 1956, with the ratio averaging 64:36. Next to the U.S.S.R., which in 1972 accounted for 33% of total trade, Poland's most important Communist trading partners have been East Germany and Czechoslovakia, with 10% and 8% of the trade, respectively. Bulgaria, Hungary, and Romania accounted for another 8% of Polish trade in that year. Yugoslavia accounted for 2%, and other Communist countries, including Albania, Cuba, People's Republic of China, North Vietnam, North Korea, and Mongolia, for 1%. Trade with the industrial West made up 30% of Poland's total trade in 1972, and trade with the less-developed countries made up 8%. Of the trade with the industrial West, 86% was with Western Europe, 6% with Canada, Japan, Australia, and New Zealand, and 8% with the United States.

Poland has conducted considerably more trade with the United States than has any other East European Communist country. In 1972, trade with the United

States totaled \$219 million, compared with \$101 million for Romania. Polish imports from the United States dropped sharply in 1965 after the withdrawal of P.L. 480 credits, and by 1972 they were still somewhat below the 1964 level. In addition, the trade balance shifted in 1965 from a deficit to a surplus. But because of unusually large purchases of agricultural commodities in 1973, Poland is running a deficit with the United States for the first time in 9 years. Polish sales to the United States have about quadrupled since the reinstatement of most-favored-nation status to Poland in 1960.

2. Economic relations with Communist countries (S/OU)

Poland's economic ties with the U.S.S.R. and the other East European Communist countries have contributed substantially to the accomplishment of its domestic economic goals. It has received from those countries a major part of the machinery and equipment and raw materials needed for industrial development. Those countries, in turn, have provided a market for Poland's rapidly expanding machinery and metal products production, absorbing about 80% of its exports of those items in 1970-71. Roughly three-fourths of Poland's imports of fuel, raw materials, and semimanufactures come from the U.S.S.R. and other East European countries. During 1970-71, the U.S.S.R. supplied large shares of Poland's imports of key materials—100% of the crude oil, 99% of the pig iron, 83% of the iron ore, 61% of the petroleum products, and 70% of the cotton. The U.S.S.R. and other East European Communist countries—mainly East Germany and Czechoslovakia—have long supplied Poland with about four-fifths of its imported machinery and equipment. These imports have been paid for in large part by machinery and equipment exports, which, in 1971, represented over one-half of Poland's total exports to those countries. The willingness of the U.S.S.R. to accept large amounts of Polish machinery, most of which is not up to Western standards, has been a major stimulus to the expansion of Poland's machine building industry. In addition, Poland is an important exporter of fuels and raw materials to the Soviet Union; those commodities typically make up one-fifth of Poland's total exports to that country. Figure 24 shows the commodity breakdown of Polish trade by areas.

The prospects for Polish trade with the U.S.S.R. appear bright for the 1971-75 plan period. The

FIGURE 24. Commodity structure of foreign trade (U/OU)
(Percent of total value)

	COMMUNIST COUNTRIES				NON-COMMUNIST COUNTRIES				OF WHICH: INDUSTRIAL WEST	
	1960	1965	1970	1971	1960	1965	1970	1971	1970	1971
Imports:										
Machinery and equipment*	34.4	45.2	45.2	43.7	20.4	16.2	23.7	25.8	28.8	30.7
Raw materials and semimanufactures.	38.8	38.1	41.9	40.0	34.9	38.6	42.8	42.0	46.4	45.4
Of which:										
Metallurgical industry products.	(16.8)	(15.1)	(19.0)	(17.2)	(14.6)	(15.0)	(14.9)	(14.9)	(17.5)	(17.1)
Chemical industry products.....	(7.1)	(7.2)	(7.7)	(7.5)	(13.7)	(15.7)	(17.3)	(18.1)	(18.0)	(19.6)
Light industry products**.....	10.7	7.8	6.0	6.0	17.9	12.6	10.9	9.1	7.0	5.4
Foodstuffs.....	7.8	4.9	2.8	3.7	9.9	10.2	11.5	13.1	8.7	11.6
Agricultural products.....	8.3	4.0	4.1	6.6	16.9	22.4	11.1	10.0	9.1	6.9
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Exports:										
Machinery and equipment*	41.3	51.2	56.4	55.4	11.0	12.4	15.6	20.1	6.8	11.7
Raw materials and semimanufactures.	45.2	35.9	29.4	30.2	39.7	37.5	46.0	45.8	49.7	48.8
Of which:										
Metallurgical industry products.	(12.6)	(8.3)	(7.4)	(6.4)	(6.3)	(5.9)	(12.9)	(10.9)	(12.7)	(11.1)
Fuels and power.....	(25.8)	(18.7)	(11.0)	(11.9)	(17.4)	(11.6)	(15.1)	(17.6)	(18.5)	(20.8)
Light industry products.....	7.5	6.6	9.4	10.4	6.4	7.9	6.8	6.7	6.2	6.4
Foodstuffs.....	4.6	4.6	2.2	2.9	35.5	33.0	23.3	20.0	27.2	23.8
Agricultural products.....	1.4	1.7	2.6	1.1	7.4	9.2	8.3	7.4	10.1	9.3
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

*Including metal manufactures.

**Including cotton.

U.S.S.R., in giving Poland a cautious approval to see technological assistance and material aid in the form of capital goods from the West, clearly recognizes the employment dilemma in the years immediately ahead. Polish planners anticipate the need to create 1.8 million new jobs during 1971-75—more than during any other period since the mid-1950's. Without adequate supplies of raw materials and the vast Soviet market for the output of its expanding industry, an industrial slowdown and consequent unemployment could easily result and pose a potential threat to the stability of the Gierk Regime. Past massive investments in its own extractive industries—especially coal, copper, sulfur, and zinc—and an unremitting commitment to self-sufficiency in grain, also have enhanced Poland's image in Soviet eyes. Evidence of Soviet willingness to continue the present relationship may have been indicated by an announced commitment to supply 11 million tons of crude oil in 1975—about a three-fifths increase above Poland's 1970 imports. The larger imports are required to supply the anticipated rapid expansion of the petrochemical industry and the increased requirements for transportation.

3. Economic relations with the West (C)

a. Background

Since the mid-1950's, Polish leaders have sought vigorously to obtain trade, credit, and market concessions from many non-Communist countries, especially in Western Europe. Poland has been the largest recipient of Western credits and the only one in Communist Eastern Europe to draw on P.L. 480 credits. The country's indebtedness to the West reached an estimated \$1.6 billion by the end of 1972. Nevertheless, Poland's relatively low debt-service ratio and good prospects for economic growth make it the best credit risk in Eastern Europe.

The relatively large share of the West in Poland's foreign trade is due largely to the fact that about 90% of Poland's prewar trade was with Western countries, and Poland did not need to reorient its trade to the Communist circle to the same extent as the other East European Communist countries. Unlike most of those countries, Poland had large quantities of fuels and raw materials, particularly coal, that were marketable in the West as well as in the Communist countries.

Trade arrangements have been spelled out in some detail in recent long-term trade agreements with

several Western countries, including Denmark, France, Norway, Sweden, the United Kingdom, and West Germany. These arrangements call for the furthering of economic and scientific-technological cooperation and industrial co-production; the establishment of mixed government commissions; annual protocols to the trade agreements governing the exchange of goods; and stipulations as to means of payment and general pricing policies. In addition, trade agreements with GATT members include the provision that the Western partners will reduce or abolish restrictions on their imports from Poland and that both parties will grant each other most-favored-nation treatment. The mixed government commissions meet once or twice a year to negotiate annual trade protocols and to evaluate and promote trade and economic cooperation.

Trade with the West has provided about one-fifth of Poland's machinery imports, nearly one-third of its metallurgical industry imports over one-half of its chemical industry imports, two-fifths of its light industry imports (including about two-thirds of cotton imports and nine-tenths of wool imports), and about three-fifths of its imports of agricultural products, primarily grain (Figure 25). Imports of grain have been financed in part by credits, including (through 1964) P.L. 480 loans.

Poland's ability to export to the West is presently limited to raw materials and agricultural products; coal, wood, and agricultural products together account for about three-fourths of the hard currency earnings. The country has had very little success in boosting machinery and equipment exports to areas other than Communist or developing countries since 1960, despite the fact that this has been an important economic objective. In 1971, machinery and equipment made up less than 10% of Poland's total exports to the advanced market economies. Other industrial goods, generally comprising the cheapest and least complex items in all lines of manufacturing, are for the most part salable only at low prices and in limited quantity. Poland's future ability to substantially increase the volume of high-priced manufactured goods exported to the West is doubtful without a major industrial overhaul, especially in the machine building and iron and steel industries.

b. Plans

Recognizing the importance of advanced technology both to the domestic economy and for increasing its competitiveness in the sale of manufactures to Western markets, Poland plans a huge increase in purchases of capital equipment from the West. The

FIGURE 25. Selected commodity trade with non-Communist countries (U/OU)
(Percent of total value)

	TOTAL				OF WHICH: INDUSTRIAL WEST	
	1960	1965	1970	1971	1970	1971
Imports:						
Machinery and equipment*	25.4	15.5	19.4	22.2	18.6	21.4
Metallurgical industry products	33.3	33.7	26.5	29.6	24.0	35.0
Chemical industry products	52.8	52.9	50.8	53.9	42.0	47.3
Light industry products**	49.1	45.4	45.3	42.4	22.9	20.2
Of which:						
Cotton***	37.1	43.8	32.0	28.6	0.5	1.8
Foodstuffs	41.9	51.8	65.5	63.2	39.2	45.3
Agricultural products	53.9	74.0	55.6	42.3	36.0	23.8
Share of total imports	36.5	33.9	31.4	32.6	24.8	26.4
Exports:						
Machinery and equipment*	13.8	12.4	13.5	17.5	4.3	7.6
Hard coal***	51.4	43.0	57.8	53.1	54.2	49.8
Metallurgical industry products	23.0	29.1	49.8	49.8	35.8	38.1
Chemical industry products	50.7	37.8	38.1	36.4	22.9	21.0
Light industry products**	34.0	40.9	29.0	27.5	19.5	19.6
Foodstuffs	82.1	80.7	85.8	80.2	73.5	71.2
Agricultural products	76.2	75.5	64.3	79.3	57.5	73.8
Share of total exports	37.4	36.8	36.1	36.9	26.5	27.6

*Including metal manufactures.

**Excluding products of the woodworking industry.

***Percent of volume.

plan for 1971-75 calls for such imports to total \$2.5 billion, or twice the 1966-70 level. The share of Western equipment in total imports of machinery and equipment is expected to rise to one-third by 1975. These imports almost doubled in 1972, resulting in an overall increase of 55% in imports from the industrial West.

Poland has signed a number of contracts and received substantial credit extensions from Western Europe and Japan for capital equipment to be delivered by 1975. A few Western countries have extended Poland general lines of credit for purchases of their capital equipment. The largest of these credit lines have come from Japan and France. Japan, like the United States, has been only a marginal supplier of capital equipment but has recently become increasingly interested in the CEMA market. The first line of credit from Japan, extended by three Japanese firms in June 1970, was for \$100 million. Repayments were to run over 7 years at a 6% to 7% annual rate of interest. In return, Poland will ship 20 million tons of coking coal to Japan during 1974-84. In August 1972, seven Japanese trading houses extended a \$200 million line of credit to Poland. Repayment periods extend up to 8 years, and interest is 6.5% a year. In September 1973 a consortium of Japanese banks agreed to lend Poland \$60 million, repayable over a period of 10 years, with interest rates to be fixed by Eurodollar rates plus specified margins. In October 1972, France extended a \$300 million credit to be drawn down over 3 years; the repayment period is reported to be from 10 to 12 years.

Belgium and the United Kingdom also have extended lines of credit. In July 1972, two Belgian banks reported that they had agreed with Bank Handlowy of Warsaw to extend a 3 billion franc (about \$67 million) export credit. The National Westminster Bank of London signed an agreement with Bank Handlowy for a \$16 million line of credit in March 1972 and provided an additional \$8 million in October. These credits, which are backed by the British Government, are to be used to finance 85% of Polish purchases of British capital and semi-capital goods and associated services.⁶ Repayment periods range from 5 to 8 years from the date of delivery or completion.

Authorization for Poland to receive Export-Import Bank credits and guarantees was granted in November 1972. So far, Poland has received authorization for several Ex-Im Bank credits, including an \$8.9 million

⁶Poland reportedly had a similar agreement for a \$52 million credit with Lloyds but failed to use up the credit before the 31 December 1971 deadline.

credit toward the purchase of two sausage plants from the Alan Scott Company of Chicago, a \$22.3 million credit for the purchase of two meat processing plants from the A. Epstein Companies of Chicago, a \$2.0 million credit toward the purchase of a Sendzimir rolling mill to be supplied by the Waterbury Farrel Division of Textron Corporation, and a \$13.5 million credit toward the purchase of a foundry for the machine tool industry from the Swindell-Dressler Corporation of Pittsburgh. In the case of the Alan Scott project, Ex-Im Bank and the First National Bank of Chicago (FNBC) are each lending 45% of the contract price. FNBC also loaned the Poles the Eurodollar equivalent of US\$10 million, part of which is to be allocated to the Alan Scott project. The loans are to be repaid over 12 years. Repayments on the credit from FNBC begin at the end of the second year and will run 5 years. Repayments to Ex-Im Bank will be made from the seventh through the twelfth year. The Ex-Im Bank credit carries a fixed interest rate of 6%; the FNBC interest rate is 0.75% floating over the prime rate. Morgan Guaranty Trust Company of New York will also lend \$22.3 million to Poland (Bank Handlowy) for the two meat processing plants.

One of the largest individual contracts signed with the West is for the purchase of machinery and equipment for a new Fiat vehicle plant. The Italians have extended an \$85 million credit to cover this contract. About three-fourths of the purchase price of the plant is to be repaid by deliveries of Fiat spare parts produced in Poland. Another large contract is the \$80 million deal with *Automobiles M. Berliet S.A.* of France for the modernization of the Jelcz bus plant. Poland is to pay for part of Berliet's services with deliveries of parts. Other contracts include those for oil refinery equipment (United Kingdom, Japan, Italy), a gas separation and helium liquefaction plant (United Kingdom), a pigment plant (West Germany, United States), equipment for a plant to manufacture polyvinyl chloride floor coating (West Germany), an installation for a caprolactam factory (United Kingdom), a polypropylene plant (Japan), a nylon-6 textile plant (Japan), equipment to produce radial tires (Belgium), equipment for an optical glass plant (Japan), a factory to produce magnetic tape (Belgium), a tandem cold strip mill for the Lenin works (Japan), equipment for a wire mill (France), a ball bearing plant (Japan), a factory to produce brakes and clutch linings for motor vehicles (West Germany), equipment for shipbuilding yards (Japan), facilities to produce components for radios and black and white TV sets (Japan), two large cement plants (Belgium), and two meat processing plants (West Germany).

In December 1971, Poland submitted a \$350 million list of machinery and equipment that it wished to purchase in the United States. In April 1972, a Polish trade mission submitted an expanded list containing about 30 items valued at more than \$400 million. So far, Poland has awarded contracts to several U.S. firms, including one for catalytic cracking technology to Universal Oil Products, a 10-year agreement for the assembly of heavy construction equipment to International Harvester, two sausage plants to Alan Scott, two meat processing plants to A. Epstein, a foundry plant to Swindell-Dressler, a Sendzimir rolling mill for a new silicon steel mill to Textron Inc. (Waterbury Farrel Division) of Providence, two freezer plants from A. Epstein Companies of Chicago, and a long-term agreement on technical and trade cooperation and co-production in hydraulic building machinery to Koehring International Corporation.

In addition to conventional trade contracts, Poland actively promotes cooperative ventures with Western firms. Poland claims that exports resulting from such deals totaled \$15 million to \$20 million in 1971. Illustrative of recent co-production agreements are the deals with Fiat, Berliet, International Harvester, and Koehring. Another such deal is the 10-year agreement between PONAR, the Polish Machine Tool and Industrial Association, and the Swedish state-owned SMT Machine Co. The agreement calls for a two-way trade of \$30 million during 1971-76 and includes plans for bilateral deliveries and the assembly and sale of machine tools in domestic and foreign markets. Poland is also interested in cooperative venture arrangements in tourism, but so far has entered into only a few such deals. One of these is a franchise and technical agreement with Intercontinental Hotels, a subsidiary of Pan American World Airways, for a 750-room hotel in Warsaw. A Swedish firm is to do the actual construction. Intercontinental Hotels is to assist in planning, decorating, and managing, and will provide worldwide reservation services as long as the hotel meets Intercontinental's standards.

Poland announced recently that it is in the final stages of preparing a law permitting foreign investments in Polish enterprises. The only other East European Communist countries having foreign investment laws are Romania and Hungary.

4. Balance of payments (S)

Net receipts from noncommodity transactions have enabled Poland to run sizable import surpluses with both the Communist world and the West in most years since 1945. During 1946-72, the country incurred a

cumulative trade deficit of \$3.0 billion, of which \$2.1 billion was incurred after 1955. A large part of the trade deficit has been financed by credits from both Communist and non-Communist countries. Total indebtedness as a result of these credits rose from about \$0.8 billion in mid-1960 to an estimated \$1.9 billion at the end of 1971. Indebtedness on medium- and long-term credits from the industrial West rose from about \$0.25 billion to an estimated \$1.2 billion. Because of a doubling of imports of advanced capital equipment in 1972, indebtedness to the West rose to an estimated \$1.5 billion by the end of that year.

a. Communist countries

The bulk—\$1.9 billion since 1955—of Poland's trade deficit has been with other Communist countries, primarily East Germany, with which the deficit rose from an average annual value of \$46 million during 1956-60 to \$106 million during 1961-72. The average deficit with Czechoslovakia was \$34 million a year throughout the 16-year period, while that with the U.S.S.R. dropped from \$130 million a year during 1956-60 to \$16 million a year during 1961-71. In 1972, Poland realized a \$205 million surplus with the U.S.S.R. as the result of a 20% increase in exports coupled with a very small increase in imports.

Poland has financed trade deficits with Communist countries in part by drawing on credits—especially credits extended in the late 1950's for the development of its mineral resource base—but primarily through earnings from transportation, communications, and maritime-related services. Poland is estimated to have earned between \$100 million and \$150 million a year during 1960-68 for services provided in the transport of goods for other Communist countries. By far the greatest share of earnings came from railroad services on the East-West corridor between East Germany and the Soviet Union. Additional payments for transportation services came from the transport of petroleum over the CEMA pipeline from the U.S.S.R. to East Germany and from the carriage of goods on its inland river network. In addition, Poland earned an average of \$20 million to \$25 million a year during 1960-68 for port services and maritime shipping services rendered to Czechoslovakia, East Germany, and Hungary. Poland also earns several million dollars a year, mainly from the U.S.S.R., for the use of its telecommunications facilities. Since 1957, the country is believed to have received some \$15 million to \$25 million a year from the U.S.S.R. in payment for local goods and services sold to the Soviet military force of 30,000 men stationed in Poland. On the other hand, Poland spends more than it earns—about \$11 million a year during

1960-71—in its tourist trade with the other Communist countries.

Earlier credits from the U.S.S.R. totaled at least \$378 million, of which \$300 million was granted in late 1956 for purchases of grain and other commodities, and \$78 million in 1964 for oil and gas development. In 1971, the U.S.S.R. extended a \$1.1 billion credit—of which \$100 million reportedly was in hard currency—for the purchase of meat in the West. Czechoslovakia granted \$87 million in 1957 for the development of sulfur and hard coal, and \$125 million in 1961 for the development of copper, the construction of a nitrogen fertilizer plant, and other machinery and materials. East Germany extended \$100 million in 1957 for brown coal development, and \$64 million in 1961 to cover deliveries of pipes and other materials for the construction of the Friendship Pipeline. By the end of 1971, Polish indebtedness to Communist countries came to roughly \$0.7 billion. Interest payments are an estimated \$15 million a year.

The CEMA Investment Bank, formed in 1970, has extended medium- and long-term credits to Poland worth over \$30 million, of which at least \$14 million is for hard currency purchases. These credits are for the construction and modernization of several plants, mostly in the machine building industry.

Poland has extended more than \$365 million in credits to other Communist countries since 1956, including two credits to the U.S.S.R. in 1963—a \$75 million credit for the development of potash mines (drawn during 1966-70) and a contribution of unknown size to a joint Soviet bloc investment project for construction of a phosphate mine at Kingisepp in the U.S.S.R.

b. Industrial West

Polish indebtedness to the industrial West on medium- and long-term credits was estimated at about \$1.5 billion at the end of 1972. This included about \$1.1 billion owed to Western Europe and Japan and about \$0.4 billion to the United States, mainly for Commodity Credit Corporation (CCC) credits and long-term P.L. 480 loans. Principal repayments on medium- and long-term debt to the West have risen from an estimated \$100 million in 1966 to about \$200 million in 1972,⁷ and interest payments have risen from about \$20 million to about \$50 million. However, this debt service (principal and interest)

⁷These values exclude repayments in Polish zlotys on P.L. 480 loans. Poland recently negotiated the deferment until 1977-84 and 1978-85 of repayments falling due in 1973 and 1974, respectively. An interest rate of 6% per year will be charged on these deferred repayments. The original loan was interest-free.

consumes only about one-fifth of earnings from exports to the industrial West and is well within Poland's repayment capability.

The trade plan for 1971-75 indicates a willingness to increase hard currency indebtedness by drawing heavily on long-term Western credits. As the plan now stands, Poland hopes to finance as much as 60% of its imports of Western machinery and equipment through credits of 7 or more years. In addition, the country presumably will receive some shorter-term credits, so that by the end of 1975 hard currency indebtedness on medium- and long-term credits could surpass \$2 billion.

In addition to its cumulative deficit on commodity trade (\$0.9 billion during 1956-72) with the industrial West and on interest payments (at least \$0.3 billion), Poland has incurred a cumulative deficit (roughly \$0.2 billion) with the West on transportation account.⁸ Furthermore, Poland has paid out a substantial amount—probably over \$0.1 billion since 1955—on nationalized property claims and prewar bonds to a number of Western countries, including the United States.

These net expenditures—over \$1.5 billion during 1956-72—on current account have been only partly offset by net receipts from transfer payments and tourism. Transfer payments from Western countries probably have provided at least \$0.2 billion in hard currency since 1955. The major portion has come from the United States in the form of private remittances, social security, veterans' payments, and government grants. Net earnings from all Western tourists totaled \$53 million during 1960-71.

In 1968, Poland reportedly had foreign exchange reserves of slightly more than \$200 million, consisting of \$80 million to \$90 million in gold and the remainder in convertible currencies. Poland apparently accumulated this reserve almost entirely on the basis of P.L. 480 credits after 1956, when the Polish national treasury held virtually no foreign exchange. It did so by using feedgrains, imported under the deferred P.L. 480 repayments schedule, to enlarge domestic livestock herds, and exporting meat products for hard currencies.

5. Organization (U/OU)

Foreign trade in Poland is a state monopoly and is handled almost entirely by the Ministry of Foreign Trade and specialized foreign trade enterprises

⁸In recent years, Poland has been running a surplus with the industrial West on ocean freight but still incurs sizable deficits—about \$40 million in 1971—on port services.

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subordinate to the industrial ministries. Most of these enterprises handle both exports and imports of a particular line of commodities; for example, POLIMEX-CEKOP specializes in the export and import of complete plants; BUMAR handles building and road construction equipment; METALEXPORT handles complete plants and machine tool lines for the machine tool industry; and STALEXPORT handles iron and steel. Some handle all trade for a particular domestic enterprise or group enterprises; for example, H. CEGIELSKI handles the foreign trade of the H. Cegielski Metal Industry Plants. A few large enterprises have authority to market certain lines of their own products abroad, but most domestic producers and consumers as yet have had little direct contact with foreign buyers and sellers.

Poland also maintains 11 commercial agencies that provide a variety of trade-related services to foreign clients. These agencies act essentially as sales representatives, engaging in sales promotion activities in Poland and channeling market information back to interested customers. Within the limitations imposed by Communist ideology, Western exporters working through these agencies have recourse to a full range of advertising media and techniques, including press and broadcast coverage and both private and public exhibitions. The most recently established of the agencies, *Polimar, S.A.*, specializes in representation of U.S. firms. AGPOL, an office in the Ministry of Foreign Trade, handles advertising for non-Polish firms and also has the responsibility for private trade exhibitions. The Polish Chamber of Foreign Trade has the responsibility for organizing international exhibitions in Poland and for Polish participation in international exhibitions outside Poland.

Most foreign trade transactions with the West are carried out on a cash basis, with payments made in convertible currencies, such as the U.S. dollar and the pound sterling. Poland's national currency, the zloty,

is not convertible and is not used in international payments. Trade with other Communist countries, as well as with some less-developed Western countries, is handled through clearing accounts, with little or no exchange of currencies. On occasion, Poland also has negotiated *ad hoc* barter transactions.

All Communist countries still clear their accounts with each other on a bilateral basis. The system of multilateral settlement of accounts set up in 1964 between CEMA members does not allow for actual clearing on a multilateral basis. Poland's terms of trade (ratio of export prices to import prices) with Western countries for the most part reflect supply and demand. Prices are generally negotiated with other Communist countries on the basis of recent world prices.

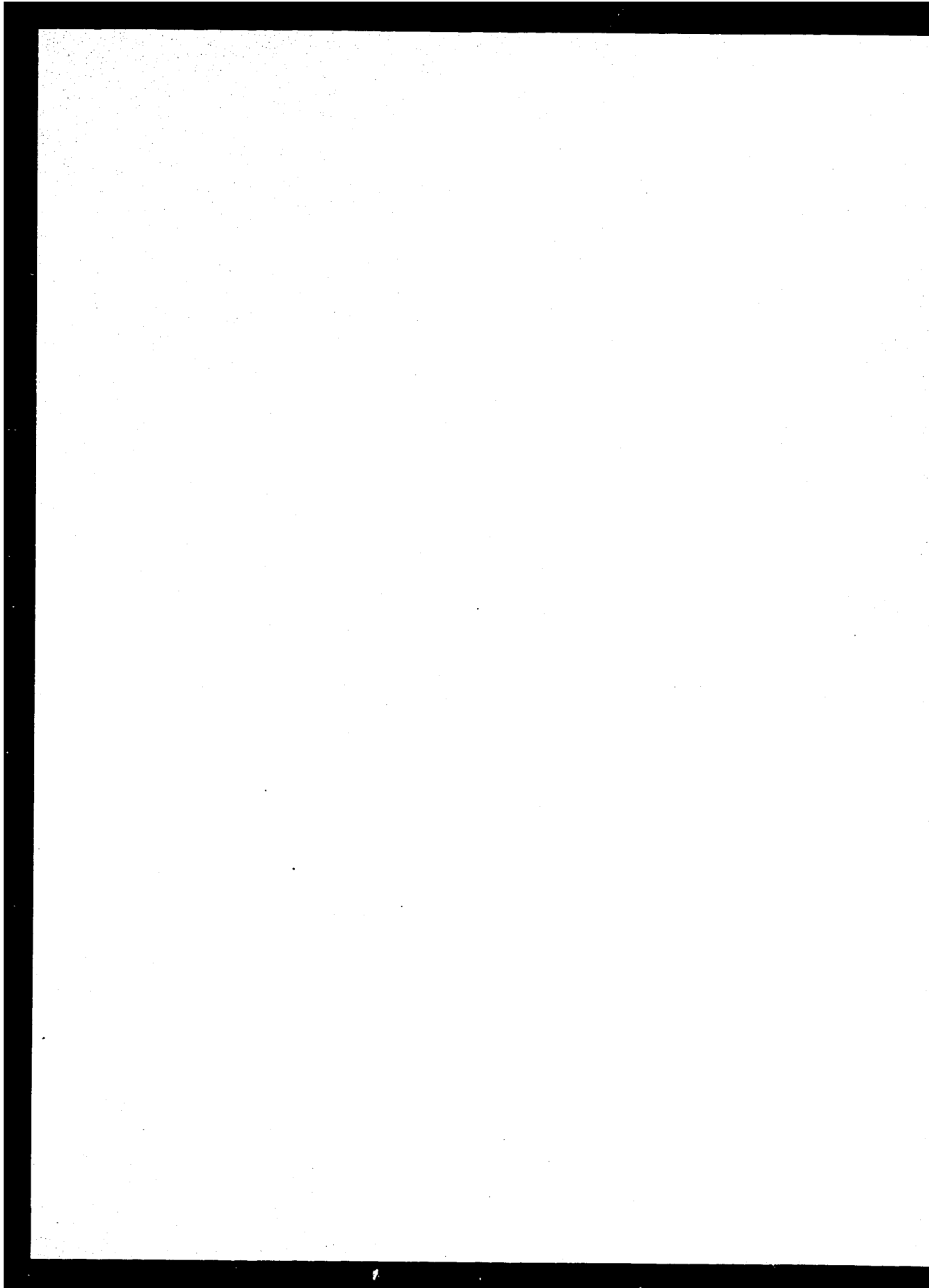
Foreign trade statistics in Poland are reported in terms of the "devisa zloty," an accounting unit which had a nominal exchange rate of 4 zlotys to the US\$1 through 1971. The rate was dropped to 3.68 zlotys to the US\$1 in late 1971 and to 3.32 zlotys to the US\$1 in early 1973. This exchange rate bears no relation to the actual internal purchasing power of the zloty. The approved rate of exchange for tourists in Poland is 33.20 zlotys per US\$1.

A fair rate of exchange for the types of goods and services bought by tourist—food, hotel accommodations, transportation, and personal services—probably lies somewhere between the current so-called "special rate" used in commercial transactions (19.92 zlotys per US\$1) and the rate of 68 zlotys per US\$1 offered in shops specializing in the sale of Western luxury goods for hard currency. The rate of exchange that reflects the internal purchasing power of the zloty for domestic producer goods and construction appears to be on the order of 40 zlotys or more per US\$1. A thriving black market in hard currencies operates in the larger cities. In late 1972, the going rate for the U.S. dollar reportedly was 90 zlotys.

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