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The Economy

Sweden

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NATIONAL INTELLIGENCE SURVEY

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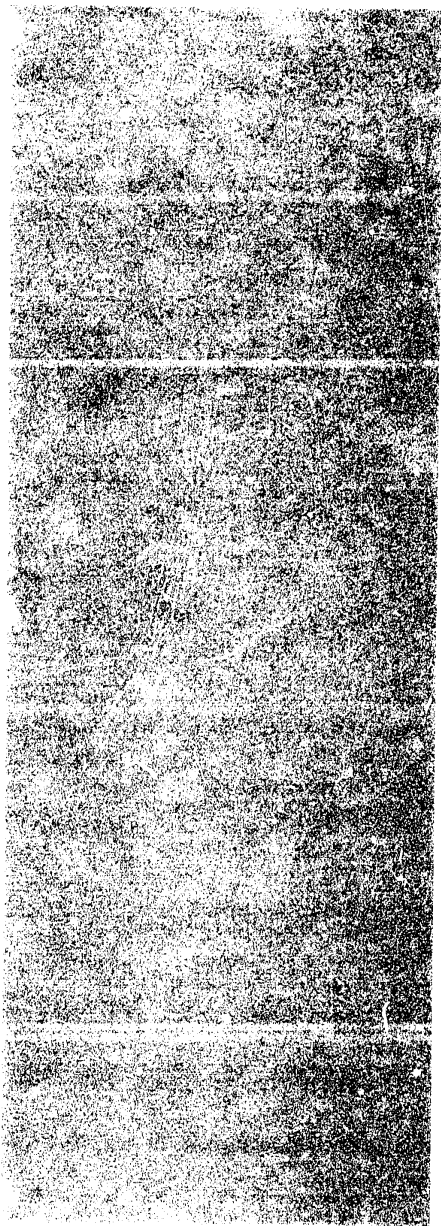
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SWEDEN

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The Economy

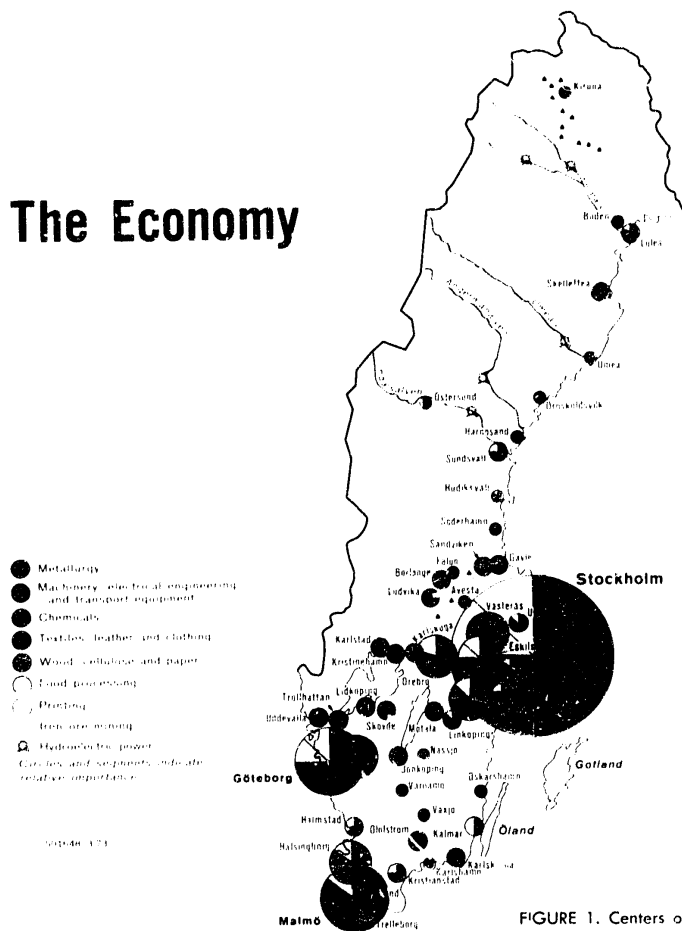


FIGURE 1. Centers of industrial activity (U/OU)

A. Characteristics of development (U/OU)

Sweden, despite a relatively small population, has one of the most highly developed economies in the world. Although the country is large in area, much of Sweden is sparsely populated, and economic activity, along with the population, is heavily concentrated in the south and to a lesser extent in the center (Figure 1). The country's natural resources include abundant timber, iron ore, and hydroelectric power, and the

labor force is literate and highly skilled. With this resource base Sweden has built a sophisticated industrial complex that produces high-quality, specialized manufactures, including advanced machinery and equipment.

With a per capita gross national product (GNP) that ranks second only to that of the United States, Sweden has one of the world's highest levels of living. In 1971 the GNP reached US\$37.5 billion in current prices—about \$4,700 per capita, compared with \$5,100 per

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capita in the United States, and about \$3,200 per capita in France.¹ Sweden is second to the United States in telephones and television sets per capita, and third behind the United States and Canada in per capita ownership of automobiles. During most of the 1960's, Sweden led Europe, on a per capita basis, in construction of dwelling units. Comprehensive welfare programs include an extensive social security system, medical services and sickness benefits, unemployment compensation and retraining allowances, rent subsidies, and family allowances.

Sweden's industrial development has intensified its dependence on foreign markets and sources of supply. It imports essential raw materials, fuels, semimanufactures, and components for its industries, as well as finished manufactures not produced domestically. To maintain producing plants of sufficient size to yield economies of large-scale operations, on the other hand, it must sell a large proportion of its industrial output to foreign markets; the domestic market is too small to support large-scale producing units. The relatively high costs of labor in Sweden favor specialization in high-quality, high-value products; such specialization further increases the country's dependence on foreign markets.

Government economic policies in Sweden combine an emphasis on the social and economic responsibilities of the state with a determination to foster vigorous and competitive private enterprise. Policies have emphasized rapid structural change to achieve rationalization and productivity growth and generally have avoided measures to protect declining sectors. Although social welfare objectives are basic to Sweden's economic planning, considerable priority is accorded the balancing of foreign transactions to assure the economic growth necessary for the achievement of welfare goals. Adequate investment is also stressed in the attempt to foster sustained, balanced economic growth and full employment.

¹GNP and GDP data used in this chapter are based on definitions used by the Organization for Economic Cooperation and Development (OECD) and are smaller than those reported in official Swedish statistics because of the exclusion of certain expenditures for maintenance and repairs. Values expressed in Swedish kronor were converted in this chapter at the rate of SKr1 = US\$0.2078 (US\$1 = SKr4.8129), the central rate established with the International Monetary Fund in December 1971. The average exchange rate in 1969 and 1970 was SKr1 = US\$0.1934 (US\$1 = SKr5.17). The revaluation in December 1971 was 7.49% in terms of U.S. dollars. After the 10% devaluation of the dollar in February 1973, the krona was revalued by 3.5% in relation to the dollar. The Swedish Government also decided to join the joint float of participating countries of the European Communities (EC), maintaining the krona within a narrow margin of the EC currencies involved in the joint float.

Other prominent goals include a more equitable distribution of income and governmental control over the exploitation of the country's natural resources. Heavy stress is placed on the development of indigenous resources to attain a level of self-sufficiency adequate for wartime needs. Environmental protection and control have received considerably increased attention.

A major acceleration of Sweden's economic growth occurred between 1954 and 1963, when real gross domestic product (GDP) rose at an annual average rate of about 4.2%. Contributing to the virtually uninterrupted growth in those years was a substantial rise in the proportion of GDP used for investment—from 19% in 1954 to 22% in 1963. At the same time, Sweden's domestic prosperity was matched by a generally balanced external position.

Since the mid-1960's, however, Sweden's growth pattern has changed substantially; fluctuations in economic activity have been more violent, and growth has slowed. Annual percentage increases in real GDP were as follows:

| | |
|------|-----|
| 1960 | 4.0 |
| 1961 | 5.6 |
| 1962 | 4.3 |
| 1963 | 4.9 |
| 1964 | 6.4 |
| 1965 | 4.1 |
| 1966 | 2.7 |
| 1967 | 2.9 |
| 1968 | 4.1 |
| 1969 | 5.1 |
| 1970 | 4.9 |
| 1971 | 0.3 |

During 1964-71, real growth decelerated to an annual average rate of 3.8%, and in the latter part of the period, the investment ratio and capacity utilization fell markedly. Hesitant fiscal policy and the delayed impact of monetary policy contributed to these results. The recession that occurred in 1971 was deeper than any earlier postwar recession; capacity utilization was low, and the share of investment in the GDP fell to 21% from a high of 24% attained in 1968. The changing pattern of domestic economic growth was accompanied by a sharp deterioration of the balance-of-payments position, largely due to spiraling cost-push inflation. This deterioration was sharply checked by the 1971 recession, which halted import growth and led to a substantial, but temporary, improvement in the payments position.

A limiting factor in the postwar development of Sweden has been the overall tight labor supply. The decade of the 1960's was characterized by virtually

FIGURE 2. Gross domestic product at market prices (U/OU)
(Millions of U.S. dollars, at 1968 prices)

| | 1968 | | 1971 | | PERCENTAGE INCREASE 1963-71 |
|---|---------------|--------------|---------------|--------------|-----------------------------------|
| | Amount | Percent | Amount | Percent | |
| Private consumption..... | 13,803 | 58.0 | 17,411 | 54.8 | 26.1 |
| Government current expenditure..... | 4,733 | 19.9 | 7,088 | 22.1 | 49.8 |
| Gross fixed asset formation..... | 5,193 | 21.8 | 6,876 | 21.4 | 32.4 |
| Private sector..... | 2,256 | 9.5 | 2,869 | 8.9 | 27.2 |
| Public sector..... | 1,761 | 7.4 | 2,553 | 8.0 | 45.0 |
| Housing..... | 1,176 | 4.9 | 1,453 | 4.5 | 23.6 |
| Charges in stocks..... | 88 | 0.3 | +260 | 0.8 | 195.5 |
| Net exports of goods and nonfactor services..... | 0 | 0.0 | 460 | 1.4 | ... |
| Total..... | 23,817 | 100.0 | 32,095 | 100.0 | 34.8 |

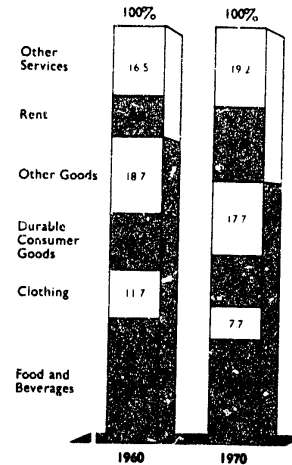
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full employment, but considerable slack developed in 1971-72. To meet the demand for labor during the period of rapid expansion, especially in the industrial sector, some labor was imported from neighboring countries, more women were drawn into the labor force, and a major shift in the pattern of employment occurred, characterized primarily by a shift of manpower from agriculture to industry. Also mitigating the problem of inadequate labor supply was the substantial improvement made in labor productivity. These developments in manpower are discussed in detail in the chapter on the society, under Manpower and Labor.

The major stimulus to economic growth since the early 1960's has come from the public rather than the private sector (Figure 2). Between 1963 and 1971, public consumption and investment increased considerably faster than their private counterparts, a trend consistent with the socialist orientation of the government. Accelerated public welfare expenditures have provided the greatest impetus to the growth of governmental consumption; education expenditures alone now amount to almost 8% of the GDP. In an effort to promote industrial activity and efficiency, the government has increasingly channeled investment funds to industry through the expanding activities of the Investment Bank of Sweden. Additional public funds have been allocated through the state budget for investments in state enterprises, energy development, and infrastructure. Private consumption now accounts for a smaller share of the GDP than is typical elsewhere in Western Europe, while private investment has been depressed by the downward trend of industrial profitability.

Private consumption has not only declined as a percentage of the GDP, but it has changed in composition. In response to rising incomes, consumers now spend a notably smaller share of their incomes on food and clothing and a larger share on rent and other services. The distribution of consumer expenditures in 1960 and 1970 is shown in Figure 3.

FIGURE 3. Major components of private consumer expenditures (U/OU)



B. Structure of the economy

1. Overview (U/OU)

Private enterprise predominates in Swedish industry, although there is an important admixture of state enterprises and private cooperative societies. The state owns or controls about 6% of all commercial and industrial enterprises in the country, including monopolies such as the postal and telegraph systems, radio and television networks, and liquor and tobacco production. The government (national and local) participates in the operation of the railroads and air carriers, and a number of government enterprises compete with private enterprises in industrial fields, particularly in the production of electric power, forestry products, iron ore, and steel. Government participation in industry has sometimes proceeded from a desire to develop industries and resources which private enterprise has considered too risky, and in some cases government participation has had a social motivation, such as keeping enterprises operating even when they have proven unprofitable in order to maintain employment opportunities.

Although the public sector participates to a relatively small extent in productive enterprises, it exerts a strong influence on the overall economy. The combined expenditures of the state and local governments and of the social security sector account for approximately one-third of GDP. Part of the expenditures are in the form of transfers to the private sector, with varying degrees of control being retained by the public sector. The magnitude of the public sector's demand for goods and services gives it a strong influence over the direction of economic development.

Cooperative societies account for 4% of all "productive" enterprises. They are concentrated in agricultural marketing and control over 30% of the country's food processing and about 15% of wholesale and retail trade, by value. Because they establish price standards and strive to control excessive price increases, the cooperatives are more influential in the economy than their share of employment and output indicate.

Approximately one-third of the GDP continues to originate in the industrial sector (mining, manufacturing, and electric power). The contribution of construction, an important barometer of investment activity, has been about 8% to 9%. The principal structural change evident in the economy over the last decade has been the increase in relative importance of the services and the declining importance of agriculture, forestry, and fisheries. The latter activities—surprisingly for a country largely self-

sufficient in foodstuffs and a leading producer of forestry products—account for less than 4% of the GDP, compared with almost 8% in the early 1960's. The relative importance of the major economic sectors is shown in the following tabulation of their respective percentage contributions to GDP in selected years:

| | 1966 | 1969 | 1970 |
|---|--------------|--------------|--------------|
| Agriculture, forestry, and fisheries . . . | 4.9 | 3.7 | 3.7 |
| Mining and quarrying | 0.9 | 0.8 | 0.8 |
| Manufacturing | 26.7 | 25.3 | 25.7 |
| Electricity, gas, and water services . . . | 2.4 | 2.2 | 2.0 |
| Construction | 8.7 | 8.3 | 8.1 |
| Wholesale and retail trade, hotels and restaurants | 20.2 | 20.4 | 20.4 |
| Transport, storage, and communication . . | 6.2 | 6.4 | 6.2 |
| Real estate, finance, and insurance . . . | 13.9 | 14.4 | 13.8 |
| Other services | 15.3 | 18.8 | 19.0 |
| Import duties and levies | 1.1 | 0.9 | 0.9 |
| Statistical discrepancy | 0.9 | 0.3 | 1.0 |
| Less: Unallocated banking services . . . | -1.3 | -1.5 | -1.5 |
| Total | 100.0 | 100.0 | 100.0 |

Agriculture, even though limited by Sweden's relatively short growing season, supplies about 80% of the country's requirements for foodstuffs; tropical products and some vegetables must be imported. The government's agricultural policies aim at maintaining high levels of self-sufficiency without surpluses, while promoting increased mechanization and farm consolidation and encouraging a shift of labor away from agriculture. As a result of these policies and of a sustained strong industrial demand for labor, labor has been leaving the agricultural sector throughout the entire post-World War II period.

Swedish industry effectively combines natural resources, skilled labor, and technological know-how into a highly sophisticated industrial complex. The availability of rich deposits of iron ore, extensive forests, and huge resources of hydroelectric power led to the development of the important metallurgical, wood processing, and chemical industries. The machinery and equipment industry is particularly noted for its ball bearings, telephone equipment, power equipment, automobiles, and ships. Ambitious research and development programs, in which state agencies and private industry have cooperated closely, have provided a major stimulus to industry.

Sweden's economy is one of the most internationally oriented in Europe. Almost half of its industrial output is exported, and manufactured products comprise almost four-fifths of the country's total exports. The international competitiveness of Swedish industry has been enhanced by direct investment in industrial plants abroad, by emphasis on quality production, and by mergers that have facilitated large-scale

production for expanded markets. Most of the major Swedish companies have subsidiaries elsewhere in Europe. Seeking to avoid the full impact of the European Economic Community's Common External Tariff, Swedish firms have engaged heavily in direct investments in the community since the early 1960's. Approximately US\$70 million, or one-third of Sweden's direct investments abroad in 1970, was in these countries.

2. Agriculture, forestry, and fishing (U/OU)

a. Agriculture

Although subject to adverse climatic conditions, Sweden is on the whole self-sufficient in most of the agricultural commodities that can be produced in northern latitudes. The comparatively short growing season, cold winters, an often unpredictable distribution of rainfall, and poor soils hinder crop production, with the result that Sweden's most important agricultural products come from dairying (Figure 4) and livestock raising. Only a small percentage of the total land area is agricultural land (Figure 5), and most of this lies outside the broad belt of relatively fertile land between Stockholm and Goteborg² in central and southern Sweden that provides about 80% of Sweden's total crop income.

Agriculture's role in the economy has declined steadily during the last two decades. With its share of gross output stagnating while purchased inputs expanded, agriculture's contribution to the GNP has declined to 2%, compared with 8% in 1950. Moreover, the number of persons employed on farms declined 60% between 1955 and 1968, the exodus from the farms being especially pronounced among the young. By 1969, 60% of the farmers were over 50 years of age. Owners of small farms frequently do not have successors who continue operating them; therefore, a substantial reduction in the total number of farms is likely to occur during the next 10 to 15 years. The total area of land farmed is already decreasing by some 40,000 to 50,000 hectares per year.

Although small by U.S. standards, Swedish farms are generally larger than those of most other European countries. Swedish official sources reported a total of 155,364 farm units in excess of 2 hectares each in 1970, having a total of 3,052,393 hectares of arable area; by the end of 1971, the number of farms in excess of 2 hectares each had reportedly declined to 145,000. Approximately 50% of the farms reported in 1971 had 2 to 10 hectares of arable area each, but these small

²For diacritics on place names see the list of names at the end of the chapter.

units accounted for only 14% of the total reported arable area. (Farms of less than 2 hectares each are not reported in official statistics.) About 6% of the farms had over 50 hectares each and accounted for 33% of the total arable area. Family owned and operated farms predominate in Swedish agriculture, and most farms are operated without hired labor.

The average net cash agricultural income per farm in excess of 2 hectares of arable land each in 1969 was nearly \$1,700, including returns from forestry. Nearly three-fourths of the cash income came from the sale of animal products. Many farmers supplement their incomes by working part-time in forestry or related industries. Nationwide, farms with 20 hectares of agricultural land average 35 to 40 hectares of forest land, while in the north the average is 60 to 70 hectares of forest. Farmers' holdings of forest area comprise about 35% of Sweden's total forest area.

The existing age structure among farmers, in combination with a partly obsolete farm structure, has created two distinct subsectors in Swedish agriculture: a stagnating or contracting sector composed of small, family holdings and an expanding, dynamic sector composed of large-scale, specialized enterprises. The former is dominated by farmers in the poorer agricultural regions of northern and central Sweden and interior areas of the south. Investments here are small, and animal products, particularly milk, provide the major source of income. In contrast, the dynamic subsector is characterized by farm units averaging 30 to 40 hectares, located in the rich agricultural region of the southern and central plains. These farms, operated primarily by younger farmers, raise cereal and industrial crops and specialize in pork, poultry, and eggs. Intensive cultivation produces high yields, and investment and the debt-to-asset ratios are high.

Swedish agricultural policies aim at facilitating the transfer of resources from agriculture to other sectors of the economy and at accelerating the consolidation of existing small or uneconomic farm units into fewer, larger units of over 25 hectares. The National Board of Agriculture directs all official rationalization efforts and supervises and coordinates the activities of the 24 provincial agricultural boards. These boards are empowered to buy and sell agricultural and forest land for the purpose of consolidation. Rationalization support is given to farms of any size through state guarantees for loans and, to a much lesser extent, through grants. In 1970 loans with state guarantees totaled US\$27.1 million, while grants amounted to \$6.4 million. The largest recipients were farmers seeking assistance for technological and structural improvements. Certain income subsidy schemes for

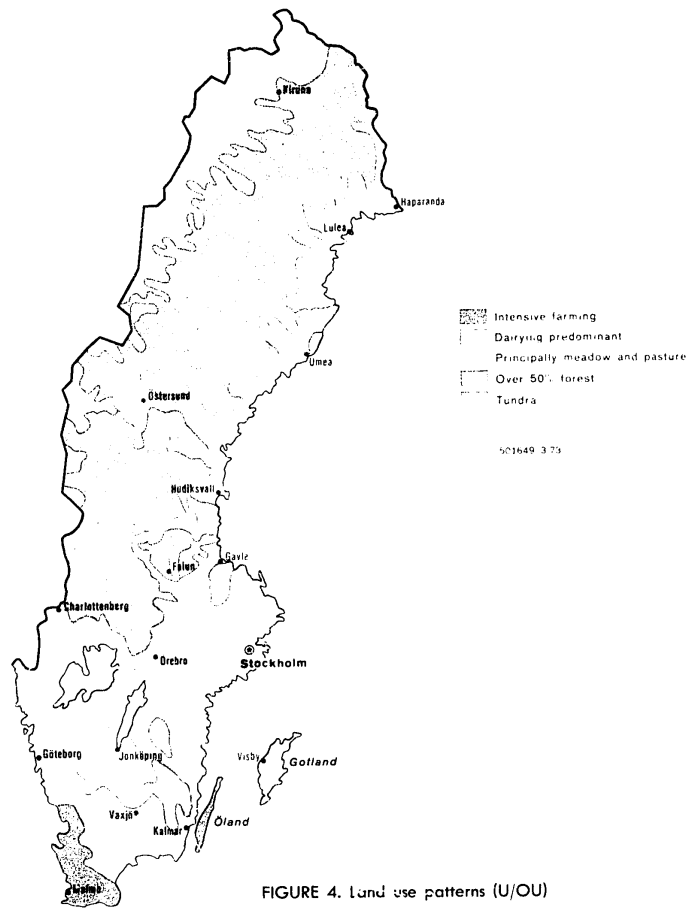


FIGURE 4. Land use patterns (U/OU)

the benefit of small farmers have been discontinued since 1967 and have been replaced by readjustment grants (given to farm owners and tenants agreeing to leave agriculture) and retirement compensation. In the eight northern provinces, the agricultural boards are engaged in special rationalization programs, called KR-activities, aimed at mitigating the rapid depopulation of the north and providing agricultural reconstruction. Nearly half of all agricultural grants now go to such activities, which seek to increase northern holdings to 60 or 70 hectares of arable land

and 400 to 500 hectares of forest land. In addition, the boards are seeking to raise the level of agricultural technology by enrolling approximately 200,000 persons a year in courses concerned with the use of better agricultural methods.

A general price support system sets minimum domestic agricultural prices at levels that provide an average income for 'norm farms' (holdings of 20 to 30 hectares of agricultural land) equal to the average income of industrial workers in specified categories. Domestic prices for farm products are kept above

world prices by fairly restrictive, though variable, import duties and quotas. A 3-year price and market agreement in effect since 1 July 1971 calls for a US\$132 million increase in gross farm income over a 3-year period. In addition, a biannual adjustment of income is made on the basis of increases in the consumer price index. Direct subsidies to producers are of small and declining importance, about 2.5% of the gross agricultural income in fiscal year 1971 (1 July-30 June).

Agricultural price policy, however, has become subordinate to a production target corresponding to the maintenance of 80% self-sufficiency (in calories) by the late 1970's. This level is the minimum regarded as sufficient to see the country through a national emergency such as war or blockade. To prevent overstimulation of production, Swedish price policy keeps agricultural producer prices from rising as fast as other prices. Between 1968 and late 1971, farm producer prices increased only half as much as consumer prices.

Livestock raising and dairying are Sweden's most important agricultural activities. Excluding earnings from forestry, almost three-fourths of gross cash agricultural income usually is derived from the sale of animal products (over US\$900 million in 1969 for holdings of more than 2 hectares). Most of the numerous small farms outside the major agricultural belt in central and southern Sweden can subsist only by supplementing their basic farming activities by engaging in such labor-intensive activities as milk, meat, and egg production.

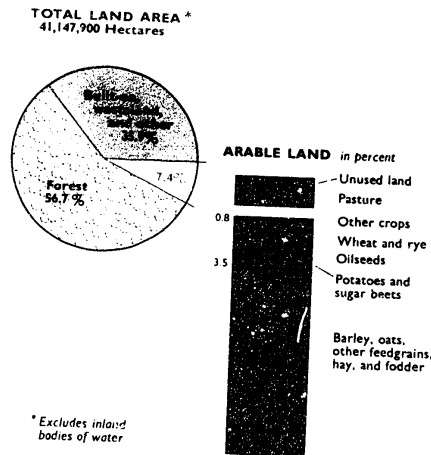
The emphasis in livestock production has been shifting from cattle and sheep to hogs and poultry. The decline in the number of cattle on Swedish farms since World War II resulted from the substantial decrease in the number of milk cows as smallholdings were closed down. The number of horses, meanwhile, has fallen sharply as a result of mechanization. Changes in the livestock population between 1951 and 1970 were as follows, in thousands of head:

| | 1951 | 1970 |
|-----------------|-------|-------|
| Cattle | 2,610 | 1,888 |
| Milk cows | 1,606 | 746 |
| Other | 1,004 | 1,142 |
| Sheep | 228 | 327 |
| Horses | 412 | *69 |
| Hogs | 1,324 | 2,037 |
| Poultry | 9,128 | 7,690 |

*1968.

The decline in the number of milk cows has been offset to some extent by increased milk yields per cow; between 1951 and 1970, the milk yield per cow more

FIGURE 5. Use of arable land, 1970 (U/OU)



than doubled. The average carcass weight of cattle slaughtered fluctuated irregularly during this period. The output of principal meat and dairy products for 1951 and 1970, in thousands of metric tons, was as follows:

| | 1951 | 1970 |
|---------------------|-------|--------|
| Milk* | 3,809 | 2,932 |
| Butter | 109 | 42 |
| Cheese | 54 | 60 |
| Eggs | **83 | 91 |
| Beef and veal | 138 | ***166 |
| Pork | 172 | ***232 |
| Poultry | **13 | 27 |

*Excludes milk consumed on the farms.
**1948-52 average.
***1969.

Because of the importance of animal husbandry, much of the agricultural land is used for the production of feed grains and grasses, a large part of which is consumed on the farms where they are produced. Cropland used for growing feedgrains, hay, and other fodder, together with meadows and pastures for grazing, comprise about four-fifths of the agricultural land. Land devoted to wheat, potatoes, and sugar beets comprises a significant portion of the remainder. Oilseeds, particularly winter rape, supply much of the domestic need for vegetable oils. Apples, pears, and plums are the main fruit crops. The most

important vegetables are peas, onions, and beans. The following tabulation shows the average annual production of principal crops, in thousands of metric tons:

| | 1946-50 | 1966-70 |
|---------------------------------|---------|---------|
| Hay | 4,487 | 3,281 |
| Barley | 188 | 1,644 |
| Oats | 780 | **1,299 |
| Mixed grains | 564 | *271 |
| Wheat (spring and winter) | 644 | 935 |
| Rye | 255 | 182 |
| Potatoes | 1,886 | 1,329 |
| Sugar beets | *1,767 | 1,648 |
| Oilseeds | *205 | 182 |

*1951-55.

**1965-69.

Mechanization, fertilizers, plant protection materials, and improved seeds have contributed to increased production of some crops. The migration of labor from agricultural to industrial areas since World War II and the practice of sharing machinery among small farmers have contributed to the spread of mechanization. On 1 January 1967, 174,067 tractors were in use, about triple the number in the period 1949-52. Similarly, the number of combines in use almost trebled between 1957 and 1967. The use of fertilizers and plant protection materials has also increased. Both animal wastes and chemical fertilizers, the latter manufactured from imported raw materials, are used. Most of the pesticides used in Sweden are imported. Swedish plant breeding has long enjoyed a high reputation, and research has resulted in the introduction of higher yielding, earlier maturing, and more disease-resistant strains of plants.

Swedish farmers are highly organized and have a long tradition of cooperation. There is one countrywide organization, the Federation of Swedish Farmers, which assists farmers in a broad range of activities, including the distribution of commodities and negotiations with the government. Practically every Swedish farmer is a member of one or more of the cooperatives operating under the direction of the Federation; these cooperatives account for the marketing of almost all milk, over three-fourths of the meat, and over two-thirds of the eggs and breadgrains.

Agricultural products are relatively unimportant to Sweden's foreign trade. In 1971 they accounted for only 2.8% of total exports and 9.8% of total imports. Wheat, flour, meat, and meat products comprised almost half of the value of agricultural exports; fruits, vegetables, and coffee accounted for more than half of food imports.

On the whole, domestic production and imports of agricultural products provide the Swedish population with a sufficient and varied diet. Preliminary statistics for 1967-68 place food supplies, in terms of energy value, at 2,880 calories per person per day. Consumption of dairy products and fish is very high; per capita fish consumption was, after that of Portugal, the second-highest in Europe. The daily intake of vegetables has risen significantly since 1948, while consumption of cereals and potatoes has declined. Compared with other Western European countries, however, Sweden lags in per capita consumption of fruits and vegetables.

b. Forestry

Covering more than half of the total land area, Sweden's forests—the most extensive in Western Europe—are a major economic resource. A well-developed forest products industry, based on the orderly exploitation of the forests, has made Sweden one of the world's leading producers and Europe's most important exporter of pulpwood, kraft papers, and building board. Among the European countries, only Finland exports more newsprint and printing paper than Sweden.

Coniferous trees comprise about 85% of the volume of standing timber. The two most important species are Norway spruce and Scotch pine. Birch is the commonest broadleaf associate of the conifers in the north and occurs with aspen, willow, and alder up to Sweden's northern boundary. In the southern part of the spruce-pine forest, however, oak, ash, and beech are significant.

The forests are largely privately owned. During the period of rapid economic development in the 19th century, industrial companies acquired most of the well-located, unappropriated crown lands of northern Sweden. The less profitable forests of the far north, however, remain under state ownership. Corporately owned forest land (25% of the total forest land) has been concentrated in the hands of a few firms as a result of the consolidation and purchase of smaller enterprises. About 35% of Sweden's forested area is owned by individual farmers. Less than one-fourth of the forest area is publicly owned. The central government is the principal public owner; the remainder is held by local and provincial governments and by the Church of Sweden.

Because of enlightened management and conservation practices, the average value of growing timber per acre of forest land is higher in Sweden than in most other countries with similar forestation. Sweden's first forest conservation law (1903) required 'hat cutting on

all private lands be conducted in such a way that satisfactory natural regeneration would occur. The Private Forestry Board has the responsibility of supervising the provincial forestry boards in order to achieve uniformity in the interpretation and enforcement of forestry laws. Forestry education and research are conducted under the direction of the Royal Academy of Forestry and Agriculture. The Royal School of Forestry trains people to fill higher positions on the Board of Crown Lands and Forests, the Private Forestry Board, forest owners' associations, and private companies.

Sweden is engaged in a 20-year afforestation and reforestation program, begun in 1954, to improve the quality and quantity of the timber growth. The program is concerned with prompt regeneration of cut-over areas, intensive silvicultural methods, and drainage of boggy forests. Consolidation of private holdings has been undertaken to promote efficient cutting and clearing and to release forest workers to other industries.

Woodpulp is the most important single item produced by the Swedish forest-product industries. About 53% of the timber cut annually goes into woodpulp production. Chemical pulp accounts for three-fourths of the total output, with mechanical pulp constituting the remainder. Both sulfite and sulfate chemical pulp are produced. Sulfite pulp can be bleached to a high degree of whiteness and is therefore desirable as a fill for mixing with long-fibered pulp in the manufacture of high-quality book and writing papers. The processing of sulfate pulp normally produces a greater yield than any other chemical method and results in a pulp with long and flexible fibers, suitable for use in strong wrapping paper, as well as in various kinds of paperboard.

The woodpulp industry experienced peak production levels between 1965 and 1970, during which time production rose 20%. In 1970 output increased by 7%, reaching an alltime high, and exports (42% of production) slightly surpassed their 1969 level, despite reduced European demand. The following tabulation shows woodpulp production and exports in 1970, in thousands of metric tons:

| | TOTAL OUTPUT | EXPORTS |
|--------------------------------------|-----------------|---------|
| Total woodpulp | 8,861 | 3,761 |
| Mechanical pulp | 2,258 | 361 |
| Chemical and semichemical pulp | 6,603 | 3,400 |
| Of which: | | |
| Sulfite pulp | 1,489 | 785 |
| Sulfate pulp | 4,456 | 2,322 |

Decelerating growth in foreign demand and declining domestic demand during late 1970 and the first half of 1971 resulted in a decrease in the inflow of

orders for both pulp and paper. Consequently, leading pulp producers closed their mills for up to 4 weeks during the 1971 summer vacation period to prevent accumulation of excessive pulp inventories.

Sweden is the seventh-largest producer of pulp and paper in the world and the third-largest in Western Europe, behind West Germany and the United Kingdom. With production exceeding 15% of the world total and 30% of the European total, Sweden ranks second to the United States in the output of fiberboard. The following tabulation shows Sweden's production and export of some of the more important types of paper, paperboard, and fiberboard in 1970, in thousands of metric tons:

| | TOTAL OUTPUT | EXPORTS |
|------------------------------|-----------------|---------|
| Newsprint | 1,030 | 687 |
| Magazine papers | 272 | 166 |
| Kraft papers | 1,033 | 839 |
| Sulfite paper | 221 | 65 |
| Fine papers | 309 | 132 |
| Paperboard, all grades | 1,023 | 905 |
| Fiberboard | 717 | 328 |

More than two-thirds of the total paper, paperboard, and fiberboard output is exported. Exports have been increasing rapidly, and in 1970 they almost reached the total tonnage produced in 1965.

The forest-products industry also produces railroad crossties, pitprops, and matchsticks as well as derivative products such as turpentine and tall oil. Crosstie output is adequate to meet the replacement demand of the Swedish railroads and provide for some exports. Tall oil, a byproduct of chemical woodpulp, is an important ingredient for the organic chemical industry, mainly for the production of soaps and grease.

Sweden's export prospects were enhanced in 1971 by the purchase of 53% of the capital stock of West Germany's *Hannoversche Papierfabriken AG*, a leading European manufacturer of bag and sack paper and fine paper, by *Norrlands Skogsagares Cellulosa AB*, a large Swedish pulp and paper producer. This acquisition insures a market for the Swedish firm's pulp (for processing into paper in the West German subsidiary) and paper (for conversion into bags and sacks), and it effectively ties the Swedish industry more closely to the important markets of the European Economic Community.

c. Fisheries

Sweden's annual fish catch (277,400 metric tons in 1970) is the smallest among the major fishing countries of northern Europe and has been declining since the mid-1960's. Between 1965 and 1970, the catch

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decreased 20% by volume and 5% by value. The number of professional fishermen has been declining steadily, and in 1970 it stood at 5,177—down more than 40% from 1960. The total value of Sweden's 1970 catch (US\$52 million) amounted to less than 0.2% of the GNP.

About three-fifths of Sweden's total catch is exported, mainly as direct landings in Denmark. A steadily rising domestic demand for fish, however, has led to an increasing dependence during the past decade on foreign direct landings in Sweden to supply the Swedish market. Sweden now has a substantial import surplus of fishery products in terms of both value and quantity. The most significant fish imports are cured fish products and marine animal oils, primarily from Norway and Denmark.

Herring and herring-like fish are generally the most important species taken by Swedish fishermen, generally accounting for about half of the total catch until 1970. In 1970, however, declining herring stocks in the northeast Atlantic due to overfishing and to the southern migration of these fish, coupled with unusually large increases in industrial fish catches, decreased the share of herring to one-third of the total catch that year, while industrial fish accounted for half of the total catch. In 1971, the catch of industrial fish returned to a more normal level and accounted for 38% of the total. Cod, mackerel, and haddock are other important species taken. Total domestic and foreign landings of the several species were as follows in 1969-71, in thousands of metric tons, landed weight:

| | 1969 | 1970 | 1971 |
|---|-------|-------|-------|
| Total catch | 259.4 | 277.4 | 217.1 |
| Of which: | | | |
| Industrial fish | 77.2 | 138.7 | 82.3 |
| Herring (including Baltic herring) ... | 124.1 | 89.3 | 86.9 |
| Cod | 24.9 | 22.8 | 47.9 |
| Haddock | 5.1 | 8.7 | |
| Mackerel | 10.8 | 3.4 | |

Most of Sweden's fishing is conducted along the west coast in the rich fishing grounds of the Kattegat, the Skagerrak, and the North Sea. The west coast fishermen account for about three-fourths of Sweden's annual fish catches. Some Swedish vessels also operate in the seas near Ireland and Iceland. Fishing in the Baltic Sea is much less productive because of the low salinity of that body of water. Increased dumping of industrial wastes into the Baltic has aggravated the problem. In addition to engaging in sea fishing, Swedish fishermen take an estimated 10,500 tons of fresh water fish annually from the country's lakes and rivers.

Since 1945 the number of vessels in the fishing fleet has declined, but the fleet has been continually modernized. At the end of 1970, the fleet numbered approximately 6,600 vessels, of which nearly 5,800 were motorized. Trawling is the most productive method of fishing used by the Swedes. Trawlers account for about three-fourths of the herring landed, as well as most of the bottom fish such as cod, haddock, and whiting. Swedish fishermen also use Danish seines, large nets suitable for deep sea fishing. Except for a few eel and salmon fishermen, most Swedish fishermen are self-employed and own their own vessels and gear, either individually or jointly.

Per capita consumption of fish in Sweden is among the highest in Europe. In 1970 Sweden consumed an estimated 181,100 metric tons of fish, 61% of which was imported and two-thirds of which was frozen or otherwise processed. There has been a marked increase in recent years in consumer preference for frozen fillets and for the more expensive varieties of fish and shellfish in processed form, to the detriment of the market for fresh fish. Refrigerating facilities, combined with fast inland transport, make possible an efficient and dependable supply of fresh and frozen fish to the consumer. Part of the catch, principally herring, is used for a wide variety of canned and cured products. Canned sardines and anchovies, fish balls, caviar and other fish roe, as well as smoked eel and salmon are also produced.

The manufacture of protein concentrates is claiming an increasing share of the industrial fish catch. The pharmaceutical firm AB Astra's plant at Bua on the Swedish west coast, for example, converts imported fishmeal into protein concentrate for animal feed (primarily for pig farms). Output of the plant reached approximately 7,000 metric tons in 1967.

Swedish policy has been to support and regulate fisheries so that fishermen might have a standard of living comparable to that enjoyed by employees in other sectors. Government support in the form of loans and price and marketing regulations, supplemented by restrictions on foreign trade, is considered a short-term measure. The long-term aim is to increase the efficiency of the fisheries and of the marketing system and thus, ultimately, to lessen the need for support.

The reduced availability of herring and soaring prices for fish landed abroad have led many fishermen into financial straits. These difficulties and the necessity of maintaining the small fishing villages in the north because of defense considerations led the government to pass in the spring of 1970 a number of financial support measures. They included government loan guarantees amounting to about US\$4

million for consolidation of fishing enterprises, a fisheries loan of less than \$2 million for promoting efficiency in the industry, and about \$623,000 for retraining fishermen in new occupations. During FY71, \$645,000 was appropriated to compensate fishermen for losses arising from the North Sea herring restrictions established by the Northeast Atlantic Fisheries Convention in May 1970. A comparable amount has been appropriated for FY72.

Two departments of the government, the Royal Board of Fisheries and the State Agricultural Marketing Board, oversee the activities of the fisheries. The Royal Board reviews the condition of marine and fresh water fisheries, promotes improved fishing methods, educates and trains fishermen, conducts scientific investigations, and directs Swedish cooperation in international fishery matters. The State Agricultural Marketing Board is concerned with price regulation, promotion of foreign trade in fishery products, and stockpiling of fish products to meet certain defense requirements.

3. Fuels and power (C)

The rapid development of hydroelectric power and the rise in imports of crude oil and petroleum products have enabled Sweden to attain one of the highest per capita levels of energy consumption in the world. Together, petroleum products and hydroelectric power account for about nine-tenths of Sweden's energy requirements, with the former (steadily rising in importance) now equal to two-thirds of the total. Coal consumption has been declining both in relative and absolute terms, so that it now accounts for less than 10% of Sweden's energy needs. Electric power generation based on nuclear energy is relatively insignificant, having failed to increase as rapidly as Swedish energy planners had hoped.

a. Petroleum and natural gas

Sweden has no known resources of petroleum or natural gas. Its lack of fossil fuels has resulted in a heavy dependence on imports to meet its energy requirements. Of the total petroleum imported in 1970, crude oil accounted for 30% and refined products, the remainder. The emphasis on the latter, imported mainly from the United Kingdom, the Netherlands, and, increasingly, the U.S.S.R., is due to the relatively small output of Sweden's refineries. In 1969 Sweden and the U.S.S.R. entered into an agreement whereby Sweden over the succeeding 4-year period would import Soviet fuel oil worth approximately US\$107.5 million in exchange for Swedish paper exports of corresponding value.

Refining capacity is relatively small, primarily because the parent companies of most of the foreign marketing subsidiaries in Sweden have chosen to build refineries in northern European countries that can support large, economically more competitive refineries. More emphasis, however, is being given to importing crude oil, largely from Venezuela, Saudi Arabia, and Iraq, at a lower cost than imports of finished products. Sweden has five conventional refineries in operation, accounting for two-fifths of the country's consumption of petroleum products, with a combined capacity of 234,500 barrels per day (b.p.d.) in 1970 (only 17% of which is Swedish owned); the following tabulation identifies the five refineries and their owners:

| COMPANY | LOCATION | CAPACITY (b.p.d.) |
|--|-----------|-------------------|
| AB Nynas-Petroleum (Swedish-owned) | Nynashamn | 30,000 |
| | Malmo | 4,000 |
| | Goteborg | 6,000 |
| BP Raffinaderi AB (owned by British Petroleum) | Goteborg | 100,000 |
| Koppartrans Olje AB (owned by the Royal Dutch Shell group) | Goteborg | 94,500 |

By the mid-1970's, Sweden's refinery capacity is to more than double, and the country may be nearly self-sufficient in refined products. *Storriges Oljekonsumenterna Riksforbund* (OK), a large Swedish wholesale distributor of petroleum products, is building a 100,000 b.p.d. refinery at Brofjorden, near Lysekil, as a joint venture with Texaco. *AB Nynas-Petroleum* is completing a refinery on the island of Hisingen. *Koppartrans Olje AB* is to expand its Goteborg refinery to about 200,000 b.p.d. by 1975.

Almost 70% of the total production of 87,089,000 barrels of refined products in 1970 was accounted for by residual and distillate fuel oil, both of which are used for bunkering ships and for heating (virtually all new buildings are oil heated). Motor gasoline accounted for 13% of total refinery output in 1970, as shown in the following tabulation, in thousands of barrels:

| | |
|------------------------|---------------|
| Residual fuel oil | 35,751 |
| Distillate fuel oil | 24,417 |
| Motor gasoline | 11,050 |
| Jet fuel | 936 |
| Kerosene | 349 |
| Lubricants | 455 |
| Other | 8,784 |
| Refinery fuel and loss | 5,347 |
| Total | 87,089 |

The government has sponsored a program for building storage installations (especially underground)

and stockpiling petroleum products to meet emergencies. Storage facilities dot the countryside of southern and central Sweden, as well as the coast as far north as Lulea. Some of the government-built facilities are leased to commercial companies, but some of the fuel stored in them is earmarked by the Economic Defense Council for use during a national emergency. To facilitate petroleum distribution in such an emergency, a pipeline linking the west coast refineries with central and eastern Sweden has been proposed by the government. This pipeline would have a capacity of about 2.5 million tons of petroleum products annually.

Sweden had 11 petrochemical plants in operation in 1969. The *Scenska Esso AB* petrochemical complex at Stenungsund near Goteborg (completed in June 1969) is the first steam-cracking installation of its kind in Sweden. The plant has a yearly capacity of 250,000 tons of ethylene, 120,000 tons of propene, 59,000 tons of butane, 36,000 tons of butadiene, and 150,000 tons of steam-cracked naphtha.

Oil exploration on the Swedish mainland, the continental shelf, and the Baltic Sea has been underway since the early 1950's. Preliminary investigations revealed that oil would most likely be found in southern Sweden, and British Petroleum's Swedish affiliate was given petroleum exploration rights in 1964. Both OK and Johnson have continued drilling for oil in southernmost Sweden and on Gotland. No oil has been discovered so far, but discovery of natural gas and crude oil in the Norwegian sector of the North Sea and improved drilling technology have generated a strong interest in expanding prospecting of the continental shelves of the North and Baltic Seas. A partly state-owned oil and natural gas prospecting company, *AB Oljeprospektering* (OPAB), was formed in 1969 to hold the exclusive rights to prospecting concessions in Sweden. Approximately US\$31 million has been earmarked for exploratory work both offshore and onshore during an initial 8-year period. OPAB's first drilling was begun last year in the Malmo region, with Italy's *Saipem* concern acting as the subcontractor for the work. Plans also call for test drilling in the Baltic to begin in 1972 and 1973.

Consumption of natural gas is minimal because of the lack of domestic gas resources and the relatively low cost of oil and electricity. Distribution systems for town use of gas are inadequate. Tentative government feelers have gone out for possible future gas imports from the U.S.S.R., the North Sea, or the Dutch mainland.

b. Electric power

At the end of 1971, Sweden ranked 11th in world production of electricity, having an output of nearly 67 billion kilowatt-hours (kw.-hr.). Installed capacity was 17 million kilowatts (kw.), of which 70% was hydroelectric and 30% thermal. Depending on seasonal variations in rainfall, hydroelectric output (46 billion kw.-hr. in 1971) contributes between 68% and 75% of annual production. In the past 5 years, electric power production rose at an average rate of 6% annually, slightly less than the 7% growth rate in consumption. To meet the demand for electricity, domestic production is supplemented by imports of electricity from neighboring countries, mainly Norway.

Electricity is widely employed in all sectors of the economy. The principal consumer is industry, which accounts for approximately three-fifths of the electric power used, mainly in electrochemical, metallurgical, and wood-processing installations. Households, commercial users, and public services are adequately supplied with electricity. About 57% of the total route-kilometers of railroads, including all major trunk lines, are electrified; these carry about 95% of total ton-kilometers of freight traffic.

Facilities of the central government's State Power Administration account for 45% of total production of electricity, municipal facilities another 15%, and privately owned utilities and industrial plants for the remaining 40%. The primary coordinating authority is the Central Operating Management, which is composed of representatives from the central and municipal governments, the largest privately owned utilities, and industrial powerplants. The central government, however, exercises general control over the entire industry, owns and operates the high-voltage distribution grids, sets consumer rates, and is responsible for overall planning to meet national requirements.

Economically exploitable waterpower potential is estimated at 85 billion kw.-hr., 70% of which has been developed. Development has been concentrated in the areas of greatest potential, on the rivers and lakes situated in the northern half of the country. Hydroelectric plants characteristically are built in series along the major rivers, with additional water supply being conveyed to the plant sites from lakes and reservoirs by means of underground conduits. Approximately half of the total national capacity is contained in the numerous large powerplants built among the Angermanalven, Indalsalven, Lulealv, and Umealv (rivers). Most of the water resources in

southern rivers and lakes have been harnessed. Nearly two-thirds of total hydroelectric capacity is in underground powerplants (Figure 6).

Thermal capacity has been expanded with the construction of large powerplants operating mainly on imported fuels. In 1971, total thermal capacity was 5.1 million kw., about three-fourths of which was concentrated in 10 installations with capacities of 100,000-kw. and over. The two largest thermal powerplants are the 870,000-kw. underground Stenungsund powerplant, near Goteborg, and the 650,000-kw. Karlshamn powerplant, northeast of Malmo. The third largest is a nuclear installation, the 440,000-kw. Oskarshamn powerplant, on the east coast.

The transfer of electric energy from the powerplants on the northern rivers—which account for 70% of the national hydroelectric output—to the major load centers of Stockholm, Malmo, and Goteborg has required the construction of an extensive north-south transmission system. The long distances involved have required the use of 220- and 380-kilovolt (kv.) primary lines. These are interconnected by a few key substations and supplemented by 110-kv. lines, resulting in a system that is highly efficient but very susceptible to disruption due to the great distances involved. Snow and ice loading and lightning frequently damage the transmission lines, creating a major maintenance problem. Electric power is delivered to Swedish consumers at 3-phase 50-cycle current at 220-380 volts.

The Swedish network is interconnected with those of neighboring countries. Links with Denmark consist of four 132-kv. alternating current cables under The Sound and one 250-kv. direct current cable under the Kattegat. A new 400-kv. a.c. cable under The Sound to Denmark will be operational by 1972. Connections with Norway consist of five lines ranging from 66 kv. to 380 kv. The Swedish and Finnish networks are linked by one 220-kv. and one 380-kv. line. In international interchanges of electricity during 1969-71, Sweden had an excess of imports over exports averaging 4 billion kw.-hr. yearly.

Expansion plans call for continued development of hydroelectric capacity in the north and for increased conventional thermal and nuclear capacity in the south. By 1980 total installed capacity is to reach 34 million kw., consisting of 40% hydroelectric, 40% conventional thermal, and 20% nuclear. All the new hydroelectric plants planned and under construction are north of the Arctic Circle on the headwaters of the Lulea river. They include the 300,000-kw. Ritsem powerplant, the 320,000-kw. Vietas powerplant, and

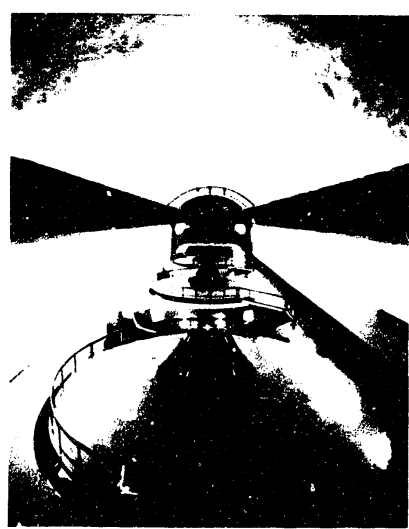


FIGURE 6. Underground machine halls at Stornorrforas powerplant, near Umea. Underground construction permits higher operating heads and greater installed capacity. Units shown are 137,000-kw. units. (U/OU)

the 100,000-kw. Kaitum powerplant. The planned oil-fueled thermal installations are to consist of a 600,000-kw. plant adjacent to the Karlshamn powerplant, and the 200,000-kw. Uppsala powerplant. Nuclear installations will include the 3,380,000-kw. Bingham powerplant, near Goteborg; the 1,800,000-kw. Forsmark powerplant, northeast of Stockholm; the 750,000-kw. Trosa powerplant, south of Stockholm; and the 580,000-kw. Barsebäck powerplant, near Malmo. In addition, the 440,000-kw. Oskarshamn powerplant is to be enlarged with two 525,000-kw. units for a final capacity of 1,490,000 kw. Increases in generating capacity are to be accompanied by expansion of transmission capacity either by adding to the number of 380-kv. lines or by constructing new 750-kv. lines. Secondary transmission and distribution facilities also are to be expanded.

c. Coal

Sweden's known coal reserves, consisting entirely of low-grade bituminous coals, are insignificant and are becoming increasingly uneconomical to mine. The principal coal deposits are located in the southwestern part of Sweden in the provinces of Kristianstad and

Malmohus. Output from these deposits declined rapidly between 1960 and 1967 and rose only slightly in 1968 and 1969. In 1969 only 21,666 metric tons of coal were mined, less than 9% of the 1960 output. Value of production fell steadily throughout the decade, from US\$993,214 in 1960 to \$21,172 in 1969.

Imports supply nearly all of Sweden's requirements for coal and coke. In 1970 Sweden imported 1.6 million metric tons of coal and 1.1 million tons of coke. Coal and coke have been largely displaced in industrial and household use by petroleum products, but the expansion of Sweden's steelmaking capacity continues to require a growing supply of coke. The government-owned steelworks, *Norbottens Jamverks AB*, is planning to build a coking plant at Lulea. The projected plant will have an annual capacity of between 1 million and 1.5 million tons of coke. *Granges AB* is planning to expand its existing 700,000-ton capacity coking plant at Oxelosund, but Sweden's other major coking plant, in Stockholm, was to close in 1972.

d. Nuclear power

With 10 new light-water reactors, totaling over 7,000 megawatts electrical (MWe) planned to go critical by 1980, Sweden's nuclear generating capacity is expected to reach an estimated 10,000 MWe by the end of this decade. All new major power facilities to be built after 1980 are expected to be nuclear, and by 1985 about half of Sweden's installed electrical generating capacity will be provided by nuclear power stations.

Sweden's entry into the nuclear power field has not been without difficulty. The country's first power reactor, the pressurized heavy-water Agesta unit placed in operation in 1963, is to be closed in 1974 because of excessively high maintenance costs, and technical failure of a 132 MWe heavy-water reactor at the Marviken powerplant led to its abandonment in 1971. In the latter year, however, the 440 MWe Oskarshamn I powerplant, Europe's largest light-water reactor not based on U.S. technology and Sweden's first commercial-scale power reactor, was successfully put into operation. Heavy-water reactors were consequently abandoned to concentrate fully on the further development of boiling-water/light-water reactors of Swedish design. Two additional light-water reactors, one 760 MWe and the other 820 MWe, are to be completed at Ringhals in 1974.

Sweden's greatest vulnerability in the nuclear power field lies in its lack of high-grade uranium ores and its dependence on foreign enrichment services. Its original nuclear policy enunciated its goal of

minimizing its dependence on imported fuel, thereby motivating the exploitation of its own uneconomical, low-grade shale resources. Efforts to minimize its dependence on foreign enrichment services also underlay Sweden's strenuous efforts to develop heavy-water reactors that could use the domestically produced natural uranium. The costs of extracting the uranium from domestic shale, however, have been prohibitive, and efforts to develop a natural uranium reactor have failed. Thus, Sweden has had to shift to the development of light-water reactors using enriched fuel, and its original goal of self-sufficiency has been replaced by the more modest goal of assuring its necessary supplies of fuel and/or enrichment services from foreign sources.

Both the state and private industry have been active in the nuclear power field since 1947. They cooperate closely in the government-run (but one-third industry financed) US\$24 million-a-year nuclear research center at Studsvik. In 1968 a joint state and private enterprise, ASEA-ATOM (a merger of the private nuclear division of *Allmanna Svenska Elektriska AB* with the commercial operations of the state-owned *AB Atomenergi*) energy company's commercial operations), was launched to develop, design, construct, and market nuclear stations on a turn-key basis.

4. Minerals and metals (U/OU)

The exploitation of the large deposit of high-grade iron ore in northern Sweden is by far the most important feature of the mining and basic metals industries. In 1970, Sweden's production of iron ore and concentrates was 4.1% of world output (Fe content). The bulk of the iron ore produced is exported to West Germany, the Netherlands, Belgium, and the United Kingdom. The domestic iron and steel industry, which is one of the world's largest exporters of specialty steels, normally utilizes less than one-fifth of the country's annual output of iron ore.

Sweden produces a number of other minerals and metals in substantial quantity. Output of lead and zinc ores in 1970 amounted to more than 3% and 2%, respectively, of world totals. Sweden is the world's leading producer of white arsenic, the commercial form of arsenic used in weed killers, sheep dip, and wood preservative. Significant amounts of sulfur pyrites, tungsten, and precious metals are also produced. Output of refined aluminum is based primarily on imported raw materials. Sweden is also developing into a large-scale producer of refined copper, primarily from imported ore obtained increasingly through Swedish holdings in foreign mining companies, but, more recently, from Sweden's very low-grade arctic copper ore.

Sweden's resources of metallic minerals are concentrated in three geographic areas: the largest deposits of high-grade iron ores are found in Norrbotten province (Lapland); the deposits that supply most of Sweden's copper, lead, zinc, and pyrite ores are in the northern Vasterbotten and southern Norrbotten provinces; and nonferrous ores are also found in south-central Sweden. The Norrbotten ores are mostly exported, and the domestic iron and steel industry's requirements are supplied by ores from south-central Sweden.

The heaviest concentration of metal industries is in the southern part of the country near consuming centers and well-maintained port facilities. Two important exceptions are the government-owned steelworks at Lulea on the Baltic coast in northern Sweden, and the nonferrous metal smelting complex at Ronnskar.

The transportation requirements of the minerals and metals industry are efficiently met by the existing highway, rail, and coastal shipping systems. In spite of adverse climatic conditions in the area, rail lines from the important Lapland ore deposits to the seaports of Narvik, Norway, and Lulea, Sweden, have been developed and maintained with considerable success.

The Swedish Government owns 95% of the largest and most productive iron mines, which account for almost three-fourths of total iron ore output. Most of Sweden's other mines and mineral processing plants are privately owned. Nonferrous mining and smelting are dominated by the Boliden Mining Company. Nonferrous metal finishing facilities are largely in the hands of the Swedish Metalworking Company (controlled since 1969 by the private mining and steel group, *Granges AB*), which is the country's sole producer of primary aluminum.

a. Iron, steel, and ferroalloys

Sweden is one of the world's largest producers of iron ore, ranking about sixth in the world in 1971. Total mine output in 1971 was 33.5 million tons, a 55% increase over the 1960 production level. The Lapland deposits, worked by the government-owned company *Luossavaara-Kiirunavaara AB* (LKAB), produced 23,700,000 tons (three-fourths of total output) in 1970, nearly all for export. The Kiruna ore field, which includes the Luossavaara and Svappavaara mines, is the largest in Lapland (Figure 7); the Gallivare ore field (also part of the LKAB complex) is the second-largest. Most ore produced is of direct-shipping quality, but small amounts are beneficiated at each mine prior to shipment. The high phosphorus

content of Lapland ores makes them unacceptable to the domestic iron and steel industry, and most of the ore produced is exported.

Much of the Lapland ore is sent to the port of Narvik, Norway, which can handle 17 million tons of ore annually and can accommodate ships up to 70,000 deadweight tons (d.w.t.). By the fall of 1973, LKAB is to complete a US\$45 million enlargement project of both the harbor facilities and the rail terminal at Narvik. The Swedish port of Lulea, which handles about 5 million tons of ore annually, has been modernized and has facilities for accommodating ships up to 37,000 d.w.t.

Most of the iron ore used by the domestic iron and steel works is mined in central Sweden. *Granges*, with an output of 3.7 million tons of ore in 1970, is the largest producer in central Sweden. About 80% of *Granges'* output was obtained from the *Grangesberg Export Field*. The remainder of *Granges'* output came from the *Stassa* mine. In *Kopparberg* province, the prospecting activity of *Stora Kopparbergs Bergslags AB* has led to the additional discovery of two iron ore deposits, each containing an estimated 50 million tons of iron ore.

The iron ore industry is efficient and partly automated. LKAB has 19 kilometers of underground track at its Kiruna field and 40 kilometers at Gallivare (Malmberget mine). In 1966, LKAB became the first mining company in the world to use electronic data processing techniques to control haulage in the mine. A computerized system of centralized traffic control regulates all ore train traffic on the main 420-meter level at Kiruna, and the 320-meter level is equipped with a relay-type automatic signaling system. Production at a third level, 540 meters, was scheduled to start in 1970.

Swedish ores have a high iron content (60% to 63% Fe), but they are also high in phosphorus, which has an adverse effect on the export price. Most of the ores produced are of direct-shipping quality, but small amounts are concentrated and/or pelletized prior to shipment; even these are high in phosphorous content. LKAB's mine concentrator in Svappavaara furnishes 1.5 million tons of concentrate annually to the Kiruna pelletizing plant. The 1969 completion of the Allis-Chalmers grate-kiln type pelletizing plant at Svappavaara and the installation of a pelletizing furnace at Malmberget raised LKAB's annual pelletizing capacity to about 4.5 million tons. A US\$42 million expansion program at Malmberget, to be finished in 1974, will double LKAB's pelletizing capacity. Another pelletizing plant, with an annual capacity of 500,000 tons, was completed at the

FIGURE 7. Loussavaara mountain in the Kiruna iron ore field is scarred from old open pit mining, although today miners work underground. The railroad crossing the frozen lake carries ore from the Lapland deposits to the port of Narvik, Norway. (U/OU)



Granges AB Strassa mine in early 1966. Coke-fueled blast furnaces account for about 90% of the pig iron production; they rely heavily on imports for their supply of coking coal.

Sweden's steel production has risen more rapidly than its iron ore output in the postwar period. Between 1960 and 1970, production of crude steel grew by more than 70% and the manufacture of finished and semifinished products, by almost 80%. Sweden's production of iron and steel products is shown in the following tabulation, in thousands of metric tons:

| | 1960 | 1965 | 1970 | 1971 |
|---|--------|--------|--------|--------|
| Iron ore and concentrates (excluding pellets) | 21,787 | 29,400 | 31,518 | 33,500 |
| Crude steel | 3,218 | 4,725 | 5,496 | 5,271 |
| Total finished and semifinished steel | 2,241 | 3,272 | 4,014 | 3,824 |
| Of which: | | | | |
| Heavy and medium plate | 309 | 791 | 1,297 | na |
| Light sections | 817 | 1,140 | 1,220 | na |
| Sheets | 154 | 333 | 472 | na |
| Wire rods | 246 | 278 | 305 | na |
| Semifinished steels and solids for tubes | 197 | 261 | 272 | na |

na Data not available.

Sweden's small but well-developed steel industry also produces over 180,000 metric tons of ferroalloys annually and is known for specialty steels such as quality steels for ball bearings. Production of ferroalloys is based on small domestic deposits of silicon and tungsten ores, supplemented by substantial imports, particularly of chrome ores and manganese.

Output of ferrochromium accounts for over one-third of total ferroalloy production. Sweden is an important producer of stainless steel, ranking roughly on a par with West Germany. *Avesta Jernverks AB* annually produces approximately 70,000 tons of stainless steel, 70% of which is exported. Over half of Sweden's high quality, low-impurity steel alloys are exported. Ferrosilicon and ferromanganese production is also significant.

The iron and steel industry is composed of a relatively large number of small to medium-sized companies and plants. Many of the companies are integrated from the production of pig iron through rolling-mill products, and several produce specialty steels that are processed through the final stage of fabrication within the corporate structure of the company, although the various operations may be at different locations.

The Swedish iron and steel industry has suffered from a dampening of European demand. The LKAB mines, for example, delivered 13% less ore than company officials expected in 1971, and inventories piled up throughout the industry. The December 1971 currency realignments aggravated the situation, raising the relative cost of Swedish ores in comparison with ores from Australia, South America, and West Africa. Stimulating orders in 1972 and 1973, however, are the long-term contracts signed in 1970 between Swedish suppliers and Polish and Japanese customers. Increasing ore prices are partly compensating for the loss in sales volume. Moreover, industry forecasts indicate a heavy concentration on cold-rolled and



specialty steels, products that have tended to maintain the value of Sweden's total steel exports in the face of declining markets.

b. Nonferrous metals

Ores for a number of important nonferrous metals are obtained from domestic deposits, but only a few of these are extensive enough to satisfy total domestic needs. Sweden exports large amounts of lead ores and concentrates and produces enough lead for domestic requirements. Exports of zinc ores and concentrates are substantial, but much of the zinc metal used is imported. Imported copper is used to produce semimanufactures and finished products in quantities of increasing significance. Sweden is Europe's largest producer and exporter of selenium, a semiconductor metal. The country exports some silver but is a net importer of gold. Sweden is generally dependent on imports for other nonferrous ores and semirefined metals.

Dominating the Swedish nonferrous mining industry, *Boliden AB* accounts for close to 90% of mine and smelter output of lead, zinc, and silver. The company's lead mining and processing complex at Laisvall, with some of the largest and richest ore deposits in the world, produced 41,600 tons of lead concentrates in 1969. Most of Boliden's production of zinc concentrates and zinc anker (85,400 metric tons in 1969) and part of the lead concentrates are exported, mainly to the Norwegian smelter of *Det Norske Zinkkompani A/S*, which is 50% owned by Boliden. The remaining zinc concentrates and all of the copper concentrates produced are normally sent to

the Boliden smelting complex at Ronnskar. The Ronnskar works include copper and lead smelters, a precious metals refinery, an arsenic refinery, a selenium refinery, a slag-fuming plant, and a new sulfuric acid plant.

Production of refined copper has grown rapidly over the past decade, rising from 21,706 tons in 1960 to 39,138 tons in 1969, with both Boliden and Granges obtaining increasing supplies of ore abroad. In addition to its 1971 acquisition of a 55% holding in Canada's Atlantic Nickel Mines, Ltd., Boliden holds 25% interest in Canada's Jameland Mines, Ltd. In 1971 Granges formed a consortium with an Australian firm, Mining Corporation Exploration, and a U.S. firm, Cities Service, to search primarily for copper, but also for nickel and other alloys, in Australia. Granges also acquired a 15% holding in 1969 in Bethlehem Copper of Canada and is engaged with U.S. and French interests in exploiting copper deposits in Peru. Domestically, LKAB and the government holding company, *Statsforetag AB*, formed a joint company in 1970 to mine copper deposits in the Stekenjokk field beginning in the fall of 1973. So far LKAB tests have shown 20 million tons of ore in the area (1.5% copper, 3% zinc, and some silver), that will ease the demand for foreign ore.

Sweden has no commercial reserves of aluminum raw materials, but the availability of low-cost electric power has made smelting of imported alumina, chiefly from Jamaica, economically feasible. Domestic smelter output, however, has not been sufficient to meet the rapidly growing demand for aluminum. Swedish rolling-mill capacity exceeds ingot capacity by a considerable margin. Although Sweden exports small amounts of aluminum, domestic requirements necessitate imports of both ingots and semimanufactures. *Svenska Aluminum AB* (a subsidiary of *Svenska Metalverken AB*) is the country's sole producer of primary aluminum. The company's Sundsvall and Kubikenborg plants produced 64,500 metric tons of primary aluminum in 1970, both alloyed and unalloyed.

Svenska Metalverken AB, controlled by Granges, is the largest processor of nonferrous metal ingots in the country. Its production also includes semifinished and finished goods of copper, lead, zinc, zinc alloys, aluminum, and aluminum alloys. The company's Vasteras works produces mainly copper and copper alloy strips, sheets, plates, bars, rods, and wires, while the Finspang plant specializes in a wide variety of copper, brass, and bronze semifinished tubing, as well as semifinished nickel-silver items.

5. Manufacturing (S)

Sweden's economy, although small, is one of the most highly industrialized in the world. Manufacturing accounts for about 30% of both GNP and employment, and for three-fourths of total exports. Manufacturing in Sweden, based on abundant iron ore, extensive forests, and low-cost hydroelectric power, covers a wide range of products from semimanufactures to machinery and transportation equipment of advanced design and high quality (Figure 8).

Producers of metals and machinery and transport equipment constitute the largest branch of industry, accounting in 1969 for almost half of all value added in manufacturing (Figure 9) and over 40% of Sweden's total exports. Ranking among the world's biggest enterprises of their kind, many of these firms rely on their own patented designs. Output of machinery and equipment has grown by an average of 9% to 11% annually in recent years. Sweden has maintained its position as the world's second-largest shipbuilding country, being surpassed only by Japan. Despite a lack of indigenous deposits of coal and petroleum, the chemical industry has developed into Sweden's most dynamic industry, particularly in the production of fertilizers and sulfuric acid. The food-processing industry, traditionally oriented to the domestic

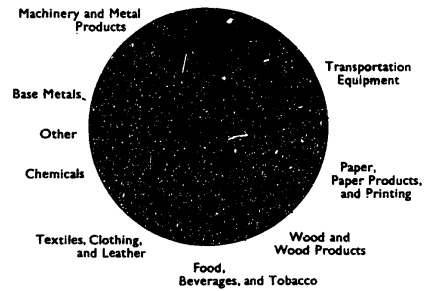


FIGURE 9. Value added in manufacturing, 1969 (U/OU)

market, has developed rapidly and now exports considerable quantities of frozen vegetables and fish. The domestic textile industry, however, has been hit hard by cheap imports, and an average of nearly 25 firms closed annually during the 1960's. The garment industry, however, has built up a sizable export trade.

Outstanding technology and engineering have kept Swedish products competitive in world markets, despite the steadily rising costs of labor and materials.

FIGURE 8. Output of selected manufactured products (U/OU)
(In thousands of metric tons except as noted)

| | 1967 | 1968 | 1969 | 1970 | 1971* |
|---|--------|--------|--------|--------|--------|
| Crude steel..... | 4,768 | 5,095 | 5,322 | 5,496 | 5,271 |
| Finished steel (excluding semis for sale)... | 3,406 | 3,600 | 3,845 | 3,951 | 3,824 |
| Copper, electrolytic..... | 47.8 | 46.6 | 52.3 | 51.6 | 50.1 |
| Aluminum..... | 34.3 | 55.8 | 66.8 | 66.2 | 75.9 |
| Lead..... | 42.1 | 42.0 | 42.1 | 40.6 | 32.2 |
| Cement..... | 3,837 | 3,912 | 3,958 | 3,994 | 3,827 |
| Cotton yarn..... | 15,387 | 14,077 | 13,445 | 11,698 | 9,514 |
| Cotton fabrics, woven..... | 15,947 | 15,471 | 14,984 | 13,825 | 12,990 |
| Woolen fabrics, woven..... | 4,068 | 3,957 | 3,550 | 2,466 | 2,126 |
| Manmade fiber fabrics..... | 12,204 | 12,563 | 14,463 | 15,078 | 14,045 |
| Woodpulp, all types..... | 5,441 | 5,460 | 5,855 | 6,259 | 6,062 |
| Newsprint..... | 704 | 809 | 934 | 1,030 | 969 |
| Other paper and paperboard..... | 2,592 | 2,826 | 3,179 | 3,329 | 3,270 |
| Sole and insole leather..... | 498 | 331 | 76 | 27 | 19 |
| Upper, lining, kid, and goatskin leathers (1,000 sq. ft.)..... | 57,784 | 62,557 | 63,818 | 55,756 | 55,867 |
| Leather shoes (million pairs)..... | 8.1 | 6.9 | 6.6 | 5.8 | 4.5 |
| Tractors (units)..... | 13,252 | 12,905 | 14,185 | na | na |
| Household refrigerators, electric (thousand units)..... | 317 | 450 | 620 | na | na |
| Passenger cars (thousand units)..... | 194 | 222 | 245 | 279 | 287 |

na Data not available.
*Preliminary data.

FIGURE 10. Major industrial corporations, 1970 (U/OU)
(Sales in millions of U.S. dollars)

| COMPANY | MAIN PRODUCTS | SALES | NUMBER OF EMPLOYEES |
|---------------------------------------|--|----------|---------------------|
| Volvo AB* | Passenger cars, tractors, bus chassis, trucks, and military vehicles. | 1,029.1 | 38,866 |
| SKF (AB Svenska Kullagerfabriken)* | Ball and roller bearings, iron and steel castings, and machine tools. | 919.7 | **64,039 |
| †SEA (Allmänna Svenska Elektriska AB) | Electrical machinery and equipment. | **644.9 | **34,714 |
| SAAB-Scania AB | Aircraft, motor vehicles, diesel engines, electronic equipment, control instruments, and X-ray and medical equipment. | ***852.0 | ***29,000 |
| Kooperativa Forbundet (KF) | Sweden's most important consumer cooperative, engaging in diverse industrial activity, but mainly concerned with wholesale and retail trade. | 438.4 | **18,450 |
| Telefon AB L. M. Ericsson | Telecom, electronic, and signal equipment, automatic control devices, and wire. | 618.6 | **53,829 |
| Granges AB | Mining, steel, and shipping. | **549.9 | **25,000 |
| Skanska Cementgjuteriet AB | Building contracting and construction. | 589.0 | 22,300 |
| Svenska Tandsticks AB* | Matches, paper and pulp, chemicals, machinery and equipment, and packaging material. | 444.6 | **32,354 |
| BPA Byggproduktion AB | Construction. | **318.8 | **17,146 |
| Stora Kopparbergs Bergslags AB | Steel, pulp and paper, chemicals, lumber, and machinery and equipment. | ***363.7 | ***14,200 |
| Elekroluz AB* | Household appliances, motors, and kitchen equipment. | ***440.7 | **27,770 |
| Svenska Cellulosa AB | Wood products, pulp, paper, and chemicals. | ***247.7 | ***12,000 |
| Sandviken Jernverks AB | Steel and machinery and equipment. | **177.8 | **10,827 |
| Afa-Laval AB | Machinery and equipment. | **257.1 | **14,615 |
| Atlas Copco AB | Pneumatic tools and machinery. | 280.6 | 13,760 |

*Sales and employment data for the group controlled by parent company.

**Data for 1969.

***Data for 1971.

A number of Swedish companies, including several of the major firms identified in Figure 10, have established a high reputation for the quality of their products, which are in demand throughout the world. Also among the internationally prominent firms are AB Bofors (armaments) and Arendal Shipyard (merchant ship construction).

Swedish industry is heavily oriented toward foreign markets, and nearly half of its manufacturing output is exported annually (46% was exported in 1971). Western European countries take three-fourths of Sweden's exports, and most of the major Swedish firms have established subsidiaries in those countries. During the decade of the 1960's, the number of Swedish companies establishing foreign subsidiaries doubled, reaching 1,806 at the end of the decade. One-third of these were established in member countries of the European Communities (EC), in large part to avoid the EC's Common External Tariff.

a. Machinery and equipment

Sweden produces some of the best quality machinery and equipment in the world. Its output,

however, is not large compared to that of countries such as the United States, the U.S.S.R., the United Kingdom, West Germany, and Japan. Power generating machinery, household appliances, agricultural machinery, and communications equipment are the main products consumed domestically; the most important exports are ball and roller bearings, office machinery, telephone apparatus, and dairy equipment.

Production of ball and roller bearings is one of the major branches of the machinery and equipment industry. Svenska Kullagerfabriken (SKF), Goteborg, is one of the world's foremost producers of bearings. With sales of US\$920 million in 1970, SKF is the second-largest Swedish manufacturing enterprise. SKF has manufacturing subsidiaries in nearly 20 countries, including the United States, as well as sales subsidiaries in all principal industrial markets. It supplies the EC countries with a large percentage of their requirements for bearings from plants in West Germany, France, and Italy. Exports of bearings, primarily by SKF, amounted to \$69 million, or 5% of Sweden's nonelectrical machinery exports in 1970.

Production of nonelectrical power machinery is substantial and normally satisfies domestic requirements. Marine engines (both diesel and other internal combustion types), hydraulic turbines, and steam boilers and turbines are produced in quantity. Most of the engines for transportation equipment are produced in the respective shipyards, aircraft plants, and automobile factories. The important manufacturers of stationary engines include the following:

- Kockums Mekaniska Verkstads AB*
- Eriksbergs Mekaniska Verkstads AB*
- AB Motala Verkstad*
- AB Bolinder-Munkstell*

Sweden is a leading producer of agricultural equipment. Tractors, combines, and plows are the principal items produced for the domestic market, while cream separators and milking machines are the most important export items. In terms of value of production, tractors are the most important item, over 14,000 tractors were produced in 1969. Sweden manufactures mostly lightweight wheeled tractors that are adapted to the small-scale, intensive farming typical of the country. There is a trend, however, toward larger, heavier models. A single firm, *AB Bolinder-Munkstell*, a wholly owned subsidiary of *Volvo AB*, completely dominates agricultural tractor production in Sweden.

Swedish dairy machinery, produced domestically as well as by foreign subsidiaries, is noted in world markets for its high quality. *Alfa-Laval AB* is Sweden's largest producer and the world's largest exporter of dairy equipment. Sweden has attained more than a proportionate share of the world market for dairy equipment, accounting for about one-fifth of the major industrial countries' exports of dairy equipment. Much of Sweden's exports of these items goes to the two largest European agricultural producers, the U.S.S.R. and France. Foreign markets are also supplied by manufacturing subsidiaries abroad; *Alfa-Laval*, for example, has plants in the United States, Canada, and West Germany. Swedish dairy equipment dominates the Scandinavian and Finnish markets, for which its small-scale design is particularly well suited. Swedish production of dairy equipment totaled US\$24 million in 1969.

Sweden enjoys a worldwide reputation as a producer and exporter of high-quality office machines. Of its output of US\$121 million of office machines in 1969, about 45% was exported; adding machines, calculators, typewriters, and cash registers account for most of the export earnings from this class of equipment. The two largest producers, *Facit AB* and *AB Addo*, are members of the Facit Group, which was

formed in mid-1966 to pool the resources of the firms as a means of improving their international competitiveness. The Facit Group has completely dominated the domestic market for adding machines and calculators and is increasing its penetration of world markets, including the United States. Although most of its requirements for computers and peripheral equipment are met by imports, Swedish industry has been engaged for some time in the production of computers. *SAAB-Scania AB* has a small but growing role in the domestic computer market. At the end of 1970 Sweden had 700 electronic computer installations in use; on a per capita basis, this ranked Sweden eighth in the world.

Among the other important types of industrial machinery produced in Sweden are machine tools; pulp, paper, and wood processing machinery; mining and excavating machinery, particularly rock-cutting drills; blowers, compressors, and ventilators; and industrial centrifuges. Sweden's highly specialized and export-oriented machine tool industry produces quality centerless and internal grinding machines, lathes, and milling machines. The pulp, paper, paperboard, and wood processing industry has fostered the production of a wide range of machinery, from logging and sawmill equipment to specialized pulp and paper machinery. The leading firm in the field is *AB Karlstads Mekaniska Verkstad*, Karlstad (Figure 11). *Jonsreds Fabriker AB* and *Kockums Landsverk AB* specialize in industrial woodworking machinery and special cranes for handling timber.

The principal categories of electrical equipment and machinery produced in Sweden are electric power generating machinery, telephone and telegraph apparatus, wire and cable, batteries, and household appliances. The most important firm in the industry, with a sales volume of US\$692 million in 1970, is ASEA, Sweden's third-largest industrial firm. ASEA is the leading Swedish producer of electrical motors and generators, as well as power and distribution transformers. *Telefon AB L. M. Ericsson*, Sweden's major producer of telephone and telegraph equipment, ranks second in the electrical equipment industry and is the country's sixth-largest firm (sales volume of \$645 million in 1970). Through its subsidiary, *Sieverts Kabelverk AB*, it is also a large producer of insulated electric wire and cable.

Both ASEA and L. M. Ericsson produce substantial amounts of equipment for far-flung overseas markets. ASEA has had significant success in selling in Australia and has participated in the construction of power transmission systems in the United States. Telephone and telegraph equipment is a leading earner of foreign

exchange for Sweden, accounting in 1971 for over 41% of all Swedish exports of electrical machinery and equipment. L. M. Ericsson, which accounts for the lion's share of these exports, is concentrating its sales activity in less developed countries such as Colombia, Mexico, Saudi Arabia, and Kuwait.

Sweden manufactures a wide variety of household appliances and, with the exception of radio and television components, is able to satisfy most of its domestic needs for these items. The principal Swedish manufacturer of household appliances is *Elektrølux AB*, controlled by ASEA as a result of the 1962 merger of *Elektrølux* and the ASEA firm, *Elektrohelios*. *Elektrølux*, which produces primarily refrigerators, is well known in foreign markets through its exports and the activities of its network of manufacturing subsidiaries.

The Swedish electronics industry is still heavily dependent on imported components, particularly semiconductors and integrated circuits; local production of solid state circuitry and microcomponents is limited by the small domestic market, the shortage of labor, and high wage rates. As a result, domestic production of electronic equipment is primarily an assembly operation.

b. Transportation equipment

Sweden's output of transportation equipment is highly diversified and includes automobiles, trucks, buses, and motorevels; merchant ships, primarily tankers and cargo carriers; and railroad locomotives and rolling stock. Specialized military vehicles, naval vessels, and military aircraft are also manufactured.

With an output of 317,000 units in 1971, Sweden ranked twelfth in the world as a producer of motor vehicles. The country produces most types of motor vehicles for civilian and military use. Two manufacturers, *Volvo AB* and *SAAB-Scania AB* (formed in 1968 by the merger of *SAAB* and *Scania-Vabis*, which was mainly a producer of trucks), control Swedish vehicle production. *Volvo* is the larger firm, producing passenger cars, trucks, buses, and military vehicles at plants in Goteborg and Torslanda. In addition, *Volvo* performs assembly operations at subsidiaries in 10 countries. *SAAB-Scania*, Sweden's principal aircraft and missile producer, also produces passenger cars and trucks. *SAAB* started producing automobiles in 1950 as a stopgap measure during a slack period in aircraft production, and passenger car sales became a major source of its revenues.

Sweden is also a leading shipbuilding nation, ranking second only to Japan. In 1971 it produced 49



FIGURE 11. Part of press section in newsprint machine built by *AB Karlstads Mekaniska Verkstad*, one of the largest and most highly regarded paper machinery builders in the world (U/OU)

ships aggregating 2.0 million gross registered tons (g.r.t.) and worth US\$446 million. Swedish owners took delivery of 20 vessels, aggregating 537,000 g.r.t. Of the 29 vessels exported, 11 vessels (580,000 g.r.t.) went to the United Kingdom; 10 vessels (574,000 g.r.t.) to Norway, traditionally Sweden's chief ship customer; and the balance, to various countries, including West Germany, France, and the U.S.S.R.

During the past decade Swedish shipyards have been expanding and modernizing their facilities. Improved efficiency has been largely responsible for Sweden's ability to remain competitive in world markets despite high and rising labor costs and the necessity to import steel plate and structural forms. *Gotaverken* Shipyard, Goteborg, in addition to its older facilities, operates the automated *Arendal* Shipyard, one of the world's most advanced. The recently completed expansion of the *Kockums* Shipyard at Malmo enables this yard to construct ships up to 300,000 g.r.t. As a result, the *Kockums* yard led Sweden's shipbuilders in tonnage produced in 1971, delivering six vessels totaling 750,000 g.r.t.

14-00000

Swedish shipbuilding firms have entered into other areas of construction in order to make full use of existing capacity during periods of slack orders: Eriksbergs Shipyards, Goteborg, and *AB Civilengineering*, for example, jointly designed a floating pulp factory capable of producing 40,000 tons of pulp annually. Oskarshamn Shipyard, Oskarshamn, has successfully developed a prefabricated one-family steel home in an attempt to diversify its output.

Swedish manufactures of railroad motive power and rolling stock supply most of the requirements of the Swedish State Railways, with the exception of some diesel locomotives, special freight cars, and tank cars. A considerable quantity of coupling equipment is also imported, but Sweden exports braking equipment, wheels, axles, locomotives, and some rolling stock. *AB Svenska Jarnvagsverkstaderna* is a major producer of diesel locomotives and all types of rolling stock and a prominent manufacturer of diesel railbuses. ASEA supplies electrical components for electric locomotives built by *Nydqvist och Holm AB*. *Kockums Mekaniska Verkstads AB* produces diesel switching locomotives and rolling stock.

Sweden also produces a wide variety of military transportation equipment and material. Production in the technologically advanced aircraft industry is limited to military-type aircraft and certain missiles and space boosters. Almost all aeronautical research is performed under government sponsorship. Jet aircraft are produced by SAAB-Scania at its Linkoping plant, while *AB Malmo Flygindustri* manufactures light aircraft. *Svenska Flygmotor AB* modifies and adapts foreign-designed engines for installation in Swedish aircraft. Domestic shipyards build submarines, light cruisers, and destroyers used by the Royal Swedish Navy. Swedish industry also produces a wide range of land combat vehicles.

c. Chemicals

The chemical industry produces about US\$1 billion worth of organic and inorganic chemicals in a wide variety. Domestic output is not sufficient, however, and substantial quantities of chemicals must be imported. In 1970 Sweden had a \$300 million trade deficit in chemicals, accounted for chiefly by imports of organic chemicals, basic plastics, plastic semimanufactures, and synthetic rubber. Primary Swedish chemical manufactures in 1970 were sulfur oxide (703,000 metric tons), oxygen (364,000 tons), chlorine (300,000 tons), and fertilizer compounds (1,500,000 tons).

The chemical industry is almost entirely privately owned and is concentrated in a few large companies.

A few of the leading firms are *Boliden AB*, the predominant manufacturer of inorganic chemicals (except for chlorine and related products normally manufactured by the pulp and paper industry—primarily *Svenska Cellulosa AB*); *AB Helios Kemisk-Tekniska Fabriker*, a producer of soaps and detergents; and *Mo och Domsjo AB* and *Korsnas-Marma AB*, leading producers of organic chemicals.

The important Swedish chlorates output is closely linked to the operations of *Svenska Tandsticks AB*, Jonkoping; a subsidiary, *Alby Nya Klorat Fabriks AB*. Avesta, manufactures chlorates for the domestic and foreign match factories of the parent company. *AB Bofors Nobelkrut*, in addition to producing dynamite, propellants, and high explosives, holds an important position in pharmaceutical manufacturing and research.

The production of organic chemicals was spurred by the outbreak of World War II, which cut off normal trade flows. Since the war, and particularly since 1963 when the Stenungsund petrochemical complex began operations, the manufacture of organic chemicals has expanded rapidly. Plants of three companies, *Fosfatbolaget*, *Unifos Kemt AB* (owned partly by Union Carbide), and *Svenska Esso AB*, are located at Stenungsund, just north of Goteborg. The *Svenska Esso* cracking plants produce a number of basic materials including ethylene. Large quantities of the ethylene are used to produce plastics, mainly polyvinyl chloride. During 1970 and 1971, the Swedish chemical industry continued to grow at about 10% a year, nearly double the rate of growth for all industry, in spite of depressed profits and extremely slow growth in the economy as a whole.

d. Food processing

The food processing industry provides quantities of basic foodstuffs sufficient for domestic needs, as well as small amounts of certain commodities, notably meat, dairy products, and flour, for export. In terms of value added, the most important branches of the industry are slaughtering and meatpacking, baking, and dairy products. Most of the commodities processed by the industry come from domestic farm output. The market value of the total production of processed food, vegetables, and tobacco was US\$5 billion in 1966.

To a much greater degree than in other Western European countries, a high degree of cooperative activity and state control characterizes the Swedish agricultural processing industry, but direct state operation is confined to the tobacco and liquor monopolies. Governmental influence, however, is

extensive throughout the industry, both as a result of measures designed to protect and promote the production of raw materials used by the industry and as a result of certain licensing or excise measures affecting the sale of beer, soft drinks, and confectionery. Producers' cooperatives are particularly active in the dairy, meat, and fish processing industries, and consumers' cooperatives are involved in baking, flour milling, and margarine production. The cooperatives handle the major share of agricultural wholesale trade and processing.

The trend in Sweden has been toward greater consumption of commercially produced baked goods. Although a multitude of neighborhood shops cater to consumer demand for fresh baked goods, the number of commercial bakeries is increasing. One of the largest of these is *AB Wasa Spisbrodsfabrik*, a manufacturer of rye crisp bread.

Meat processing, like baking, has moved from homes and small shops to plants of industrial size. The Consumers Cooperative Union (*Kooperativa Fobundet—KF*) has acquired a large number of plants from both producers' and consumers' associations and has closed down a number of the less economical units. At the same time, a number of large modern plants are being built. One of the largest meat-processing plants now in operation is owned by *Konsum Stockholm*, an independent consumers' cooperative in the capital.

Other important food products include processed milk, sugar, and fats and oils. Both cooperatives and private plants are engaged in milk processing. Of the latter, *Svenska Mjolkprodukter AB*, with factories in Kimstad and Gotene, is one of the largest. Sugar beets, two-thirds of them domestically grown, normally supply over 95% of Sweden's demand for sugar. The sole manufacturer of sugar in Sweden is *Svenska Sockerfabriks AB*, a private corporation with headquarters in Malmo.

e. Textiles

The textile industry (Figure 12) is predominantly oriented toward the domestic market, and its growth has been restricted by foreign competition. To counter this competition, and to rationalize production, Swedish textile firms have undertaken substantial horizontal and vertical integration, much of it with the aid of the Investment Bank of Sweden. To some extent, textile producers have been attempting to compensate for increased costs by shifting to the manufacture of higher quality, higher priced goods that are in greater demand in export markets.

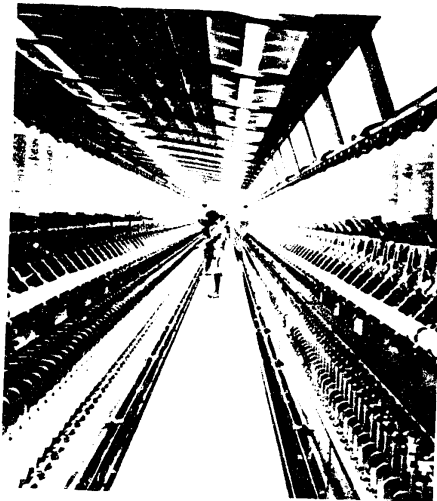


FIGURE 12. High-speed automated spindles in one of Sweden's largest cotton textile plants. One skilled worker supervises the operation of 3,000-4,000 spindles. (U/OU)

Arrangements have also been made for joint marketing of textile products by several of the local manufacturers.

As a result of mergers, the number of establishments in the textile industry declined from 307 in 1962 to 558 in 1969. Employment in the textile industry also has fallen by more than half, from over 80,000 in 1962 to about 35,000 in 1969. Despite the fall in the number of firms and employees, however, the value of textile production reached an all time high of US\$555 million in 1969 (value added was \$277 million).

6. Construction (U/OU)

Construction accounts for approximately 9% of GNP and total employment. Gross investment in buildings and other construction averaged 66% of the country's gross fixed asset formation between 1965 and 1970 and reached about US\$5 billion in 1970. This high level of activity largely reflects the pressing consumer demand for housing and vigorous government efforts to ameliorate the chronic housing shortage, combined with large government outlays for infrastructure and public works. As shown in the following table, housing and local authorities' public works outlays in 1970 each accounted for about

one-third of total gross investment in construction and building (value in millions of U.S. dollars):

| | INVESTMENT | PERCENTAGE SHARE |
|---|--------------|------------------|
| Permanent housing | 1,696 | 34.1 |
| Local authorities, excluding housing and industries | 1,553 | 31.2 |
| Manufacturing | 440 | 8.9 |
| Commerce | 340 | 6.8 |
| Central government enterprises | 311 | 6.3 |
| Other central government, including defense | 280 | 5.6 |
| Private agriculture, forestry, fishing | 59 | 1.2 |
| Other investments | 291 | 5.9 |
| Total | 4,970 | 100.0 |

Rationalization of the industry has progressed steadily since World War II; work has been scheduled during winter months (thus promoting year-round employment and increasing labor's efficiency), methods and procedures on job sites have been improved, and structural members have been prefabricated in factories. As a result, the man-hours required to produce a cubic meter of building space have been halved since the mid-1950's. Further increases in worker productivity are expected to compensate for a scheduled reduction of the workweek from 43.5 hours to 40 hours, to occur in two stages in 1971 and 1973.

Housing construction has been one of the major problem areas of the country, and in an effort to ameliorate the housing shortage, the government in 1965 set a dwelling construction goal of 1 million units during the following decade. In 1966, 82,000 new housing units were built, and in 1968-70, over 100,000 units were built annually. After the achievement of the planned annual rate of construction, emphasis was shifted to the improvement in quality and increase in size of units being built.

C. Economic policy (U/OU)

Sweden has a long tradition of governmental intervention in the economy through comprehensive social welfare programs, control of natural resources, and strict licensing requirements for business activities. The concept of countercyclical compensatory fiscal policy was adopted in the late 1930's, and since 1948 governmental budgeting has taken account of an annual report providing background information on the course of the economy. In the postwar period, expansion of government activity and intervention in the economies of many Western European countries has been such that Sweden no longer differs markedly

from the European norm in this respect; however, the actions that the Swedish Government takes to influence the course of the economy go beyond those ordinarily taken by the U.S. Government.

The Swedish Government's success in formulating and implementing economic policies results in part from a long history of working together with the private sector in pursuit of common goals. The national federations of employers, trade unions, and other occupational groups engage in extensive consultation and discussion with the government concerning broad economic policy, and a number of these organizations have assumed administrative or regulatory functions performed in other countries by government agencies. Thus, labor unions help to administer the unemployment insurance program, and trade associations control the entry of new enterprises into some fields of business. Although the government does not participate directly in periodic wage negotiations, it attempts, mainly through persuasion, to bring about noninflationary wage settlements.

Government influence on the economy is exerted primarily through conventional fiscal and monetary policy, as well as by regulation of investment in housing, of National Pension Insurance Fund (social security system) operations, and of domestic and international capital-market transactions. In addition, the various levels of government are directly engaged in a broad range of economic activities. More than half of electric power production, and almost all railroad transportation, local bus and streetcar service, and communications facilities are in public hands. Although 94% of all commercial and industrial enterprises are in private hands, the government owns and operates large firms in the key industries of forestry, iron ore mining, and steel production, as well as one of Sweden's largest commercial banks (Figure 13).

The central government provides about 24% of municipal income and strongly influences many local financial decisions even though the local authorities exercise a high degree of independence. Roughly half of Central Government support to local governments consists of grants-in-aid for certain social expenditures, primarily for education. The central authorities also exert economic pressure on their local counterparts through control of municipal bond issues and use of standby powers to impose taxation on nonpriority building.

Sweden desires to continue developing its economy on the basis of optimum utilization of indigenous resources. In consequence, immigration is tightly

FIGURE 13. Public enterprises and selected companies in which the government has a majority interest, 1970 (I/OU)
(Values in millions of U.S. dollars.)

| COMPANY | ACTIVITIES | CAPITAL | PERCENT GOVERNMENT- OWNED | TURN- OVER | EMPLOY- MENT |
|---------------------------------|---|---------|---------------------------------|---------------|-----------------|
| Public enterprises | | *440.0 | 100.0 | 2,134.8 | 151,300 |
| Board of Telecommunications | Telephone, telegraph and telex services, radio and television transmission. | *164.6 | 100.0 | 586.0 | 42,600 |
| State Railways | Railroad and road traffic | *78.5 | 100.0 | 509.5 | 45,900 |
| Post Office (excl. Postal Bank) | Postal service | *16.4 | 100.0 | 523.8 | 38,400 |
| Airport Administration | Civilian airport service | *10.3 | 100.0 | 26.2 | 1,300 |
| State Power Board | Production and transmission of electric power. | *153.3 | 100.0 | 271.0 | 8,900 |
| State Forest Service | Forestry | *7.3 | 100.0 | 102.4 | 7,100 |
| National Industries (defense) | Manufacture of arms, engineering, laundry service. | *9.6 | 100.0 | 115.9 | 7,100 |
| Business firms** | | 791.5 | ... | 2,390.5 | 64,947 |
| Of which: | | | | | |
| AB Aerotransport | Holding company for Sweden's share of Scandinavian Airlines (SAS) (31.7ths). | 27.7 | 50.0 | 3.1 | <i>Insig</i> |
| AB Statens Skogsindustrier | Sawn timber and wallboard; forest products. | 58.5 | 100.0 | 118.5 | 4,280 |
| AB Atomenergi | Research and development of atomic energy. | 2.9 | 100.0 | 24.8 | 1,106 |
| Statens Bilinspektion | Motor vehicle testing | 0.9 | 52.0 | 22.8 | 1,558 |
| AB Ceaxerken | X-ray film and other photographic products. | 2.1 | 100.0 | 4.5 | 172 |
| AB Kabi | Pharmaceuticals | 8.8 | 65.0 | 24.6 | 1,015 |
| Kalmar Verkstads AB | Transport equipment, especially deliv- ery vans. | 0.2 | 90.3 | 16.8 | 1,077 |
| Karlskrona Shipyard | Shipbuilding, engineering | 8.4 | 100.0 | 11.0 | 1,633 |
| LKAB | Iron mining | 289.1 | 95.7 | 235.0 | 7,145 |
| Norbottens Järnverks AB | Iron and steel manufacture | 37.3 | 100.0 | 70.4 | 3,423 |
| SMT Maskiner AB | Numerically controlled machines | 2.9 | 100.0 | 11.2 | 743 |
| AB Statsgruvor | Mining, mainly lead and zinc | 5.2 | 100.0 | 3.1 | 124 |
| Uddevalle Shipyard | Shipbuilding | 5.0 | 50.0 | 53.3 | 2,841 |
| Svenska Reproduktions AB | Printing and publishing, mainly maps | 2.1 | 100.0 | 7.3 | 435 |
| Sveriges Centrala Restaurang AB | Hotel and catering service | 8.2 | 99.0 | 74.1 | 6,902 |
| Svenska Tobaks AB | Manufacture and sale of tobacco products. | 64.3 | 99.3 | 84.1 | 2,115 |
| Systembolaget AB | Retailing wines, spirits, and strong beer (monopoly) | 14.5 | 100.0 | 601.8 | 1,990 |
| AB Vin- & Spritcentralen | Import, production, and wholesale of wines, spirits, and strong beer (mo- nopoly) | 3.0 | 97.3 | 83.3 | 986 |
| Swedish State Lottery | Monthly money lottery (monopoly) | 1.2 | 100.0 | 79.6 | 65 |
| Swedish Football Pools | Football pools | 29.9 | 100.0 | 88.5 | 76 |
| Credit institutions*** | | 305.1 | ... | 47.5 | 1,795 |
| Of which: | | | | | |
| Swedish Credit Bank | Commercial banking | 58.8 | 99.9 | 20.8 | 1,752 |
| Investment Bank of Sweden | Investment banking | 216.5 | 100.0 | 20.5 | 11 |
| Swedish Export Credit | Export credit finance | 22.7 | 50.0 | 3.3 | 5 |

... Not pertinent.

*Capital entries refer to fixed investments only.

**The state controls a number of joint-stock companies, including 37 industrial firms, 7 transportation firms, 4 state monopolies, 7 credit institutions, and 12 other firms, owning 50% or more of their stock, in addition to the public-service type organizations cited above.

***The turnover entry for credit institutions relates to net interest income.

controlled and, although normally permitted, foreign capital transactions and transfers must be licensed by the Swedish National Bank (*Sveriges Riksbank*). The policy toward foreign investment is generally liberal; foreign firms that operate through incorporated Swedish subsidiaries receive national treatment. However, foreign acquisition and exploitation of natural resources (mineral deposits, for example) and of certain services such as shipping are stringently controlled. Swedish law excludes foreigners from banking and insurance enterprises. The government also uses its authority to license firms to do business and uses its fiscal and exchange controls affecting disposition of business net income to control the extent of foreign investment in the economy.

1. Planning

Economic planning in Sweden is indicative in nature. In contrast to plans that establish rigid and comprehensive production targets, Swedish long-term (5-year) plans comprise a systematic study of the economy's future development, outlining a flexible strategy to achieve stated economic goals. Among these goals are full employment, rapid growth of output, a more equal distribution of incomes, price stability, and external payments balance. The government seeks to promote these goals through its fiscal, monetary, trade, and industrial policies. Promotion of investment and achievement of welfare objectives are given priority consideration. The balance of payments is also a matter of prime concern because of the importance of external economic transactions to the Swedish economy. Economic planning, which is less comprehensive than in France, involves greater interaction with groups in the private sector than in those European countries in which planning is limited largely to projections presented by the authorities.

Short-term planning consists basically of the formulation of a short-term economic forecast (embodied in the national budget) to provide an economic basis for the preparation of the Finance Bill. The national budget is prepared in the Economic Division of the Ministry of Finance and Economy, with the assistance of the National Institute of Economic Research. A Research Council, consisting of the heads of industrial, labor, and agricultural associations, is consulted in connection with preparation of the national budget, but the council bears no responsibility for the content of the report.

2. Implementation of policy

Relying primarily on monetary policy to promote full employment and rapid growth, Sweden generally followed an easy credit policy during the 1950's and early 1960's. Low interest rates and accelerated investment, however, combined with an increasingly tight labor market to produce spiraling inflationary pressures. Concerned with the need to restrain inflation, the government turned to countercyclical measures. The economic boom that began in mid-1968 was met with tight selective fiscal constraints and severe monetary restrictions. Imposed in late 1969 and early 1970, well after the boom peaked, these measures proved too restrictive and led to a strong downturn by 1971. The increasingly severe swings in Swedish economic activity since the mid-1960's have been accompanied by a falling investment ratio, slower real growth, spiraling cost-push inflation, and, except in the recession year of 1971, growing deficits in the current account of the balance of payments.

Reacting to these developments, Swedish planners have raised two major issues concerning demand management. The 1971-75 long-term plan recommends increased capital formation as a means of expanding exports and improving Sweden's international competitive position. Additionally, it proposes restriction of the growth of private consumption to make possible a shift of resources toward the export sector.

The policy measures introduced in 1971 aimed at stimulating industrial investment and employment at the expense of consumption expenditures. To promote balanced growth, a general price freeze, the first in the postwar period, was put into effect in October 1970 and was later extended from its original expiration date of 31 March 1971 through the rest of the year. In response to growing dissatisfaction over rapidly rising food prices, the government reinstated a partial price freeze on essential food items in January 1973.

Government policy continues to stress a more equal distribution of income and rising levels of living. To this end, approximately one-fourth of the central government's expenditures are income transfers to households, including basic pensions, children's allowances, housing allowances, health insurance benefits, and unemployment compensation. Low-income groups, primarily farmers and fishermen, receive state subsidies in the interest of a "just income" for all. To maintain rising levels of living, the government strives to increase employment, particularly through training and retraining programs for farmers and for unskilled and handicapped workers.

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The government maintains employment in stagnating or declining industries by extending structural adjustment assistance.

In addition to providing housing allowances, the government supports adequate housing at reasonable prices for all citizens through low-interest credit to the housing sector and a system of rent controls. Although an average of about 100,000 housing units are completed each year, the demand for housing has continued to exceed the supply. Furthermore, the housing subsidization has at times conflicted with other aims. The construction of dwellings competes with industrial investment for scarce resources, leading to inflationary increases in costs and wages within the building industry.

Sweden's comprehensive social welfare programs are supported by high levels of direct and indirect taxation. The progressive personal income tax, first introduced in Sweden in 1902, has been repeatedly revised upward as the financial requirements of the government have increased. Although Swedish income tax rates are higher than those in most European countries (up to over 55% of gross personal income), the authorities have found it necessary to tap other sources of revenue. Indirect taxes (particularly turnover taxes and motor vehicle purchase taxes) were used increasingly during the 1960's as means of raising revenue and of reducing consumer demand. The 4% retail turnover tax was introduced in 1960, for example, and was gradually raised to 10%. In conformity with the trend prevailing in Western Europe, the turnover tax was replaced in 1969 by a value-added tax of 10% on tax-inclusive retail prices. The tax covers two-thirds of consumption expenditures, with the primary exclusion of housing, energy, medical care, and certain drugs.

To shift more of the tax burden to upper-income brackets, a reform of the entire tax system (both local and central) was effected on 1 January 1971. For the two-thirds of all taxpayers with incomes up to US\$8,700, direct taxation was lowered. A common tax scale was applied for both married and single individuals, and to stimulate greater employment of women, joint tax returns for married persons were abolished. The result of these changes was a reduction of direct tax revenues, and the government sought to offset this loss by increasing the value-added tax to 15% of the tax-inclusive prices of goods (17.6% of the before-tax price).

To influence the level of investment expenditures, the government exempts corporations from corporate income taxes on a portion (not to exceed 46%) of their net income. This is accomplished by placing the tax-exempt funds in blocked accounts at the central bank, and when the Labor Market Board decides that these funds can be released for investment purposes, the firms must add the other 54%, which during the interim has been at the firms' disposal. Thus, firms are encouraged to set aside funds during a boom and invest them when the economy needs stimulation.

3. The budget

Largely because domestic transfers and subsidies have risen faster than revenues, Sweden's overall budget has generally shown deficits since the mid-1960's. These deficits typically have amounted to about one-tenth of total expenditures (including lending). They are financed primarily by borrowing from the central bank and, to a lesser extent, from commercial banks. Long-term borrowing takes the form of Treasury bond issues and bond loans; short-term financing is accomplished through the issuance

FIGURE 14. Central government budget (U/OU)
(Millions of U.S. dollars)

| | FY71 ACTUAL | FY72 ESTIMATES | FY73 BUDGET PROPOSAL |
|--|----------------|-------------------|----------------------------|
| Total revenues..... | 8,690.2 | 9,916.8 | 10,706.9 |
| Of which: | | | |
| Direct taxes..... | 3,575.9 | 3,659.0 | 4,519.6 |
| Indirect taxes..... | 4,386.7 | 5,363.8 | 6,049.6 |
| Total outlays..... | 9,251.6 | 10,852.5 | 11,413.7 |
| Of which: | | | |
| Current purchases of goods and services..... | 2,931.4 | 3,388.8 | 3,659.0 |
| Transfers and subsidies..... | 5,031.2 | 5,904.4 | 6,133.1 |
| New building and construction..... | 395.0 | 499.0 | 561.3 |
| Lending (largely construction loans)..... | 894.0 | 1,060.3 | 1,060.3 |
| Overall deficit (-)..... | -561.4 | -935.7 | -706.8 |

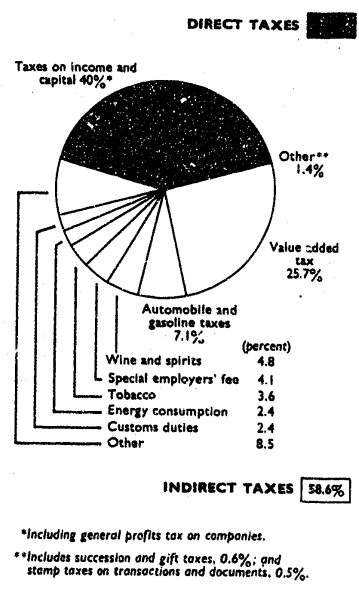


FIGURE 15. Sources of central government tax revenue, FY72 (U/OU)

of Treasury bills. As of 31 December 1971, the national debt stood at US\$8,063.6 million, or 21% of the GNP.

The measures taken in 1970 to restrain public expenditures and cool the overheated economy led to an atypically small deficit in FY71 (Figure 14). In the latter half of 1971, however, a reversal of policy in an attempt to stimulate business activity pushed the deficit to a new estimated high of US\$936 million in FY72. Anticipating an upturn in the domestic economy and in foreign demand, Sweden's FY73 budget proposal was restrictive, calling for a relatively small increase in total spending and a decline in the overall deficit.

Taxes accounted for nearly 92% of central government revenue in FY71 and covered approximately 86% of total expenditures. Since FY65, receipts from direct taxation have doubled, while indirect tax receipts have increased more rapidly, by about 150%, providing over half of the total revenue since 1960. The value-added tax is the most important indirect tax, while the income and property taxes yield the lion's share of direct tax revenues (Figure 15).

About half of the government's combined current and capital outlay is concentrated in three areas—education and research (18%), social security benefits (18%), and defense. The defense budget for the period 1 July 1968 through 30 June 1973 averaged 13% annually of the central budget. Communications (including roads) and electric power together add another 9%. In the previous five budgets, the growth rate of expenditures has ranged from a low of 6% to the high of 17% posted in FY71. The restrictive FY73 budget projects a growth in expenditure of 5%. Rather than raise the already high general level of taxes during a recovery, the government has chosen to restrain expenditures. Priority, however, has been given to increases in expenditures for labor support programs, child support, electric power development, and environmental protection.

D. Banking and commerce (U/OU)

I. Banking and monetary policy

The Swedish banking system is generally similar to banking systems elsewhere in Western Europe and North America. A network of commercial banks with numerous branches nationwide, a large number of savings banks, and a central bank—the Swedish National Bank (*Sveriges Riksbank*)—account for most

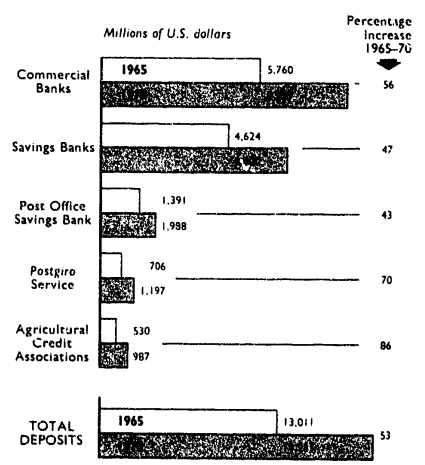


FIGURE 16. Deposits by the public in selected credit institutions (U/OU)

of the banking activities, although the Post Office Savings Bank (*Postsparsbanken*) and the Postal Check Service (*Postgiro*) provide some competition. In addition, a number of credit associations are run by cooperatives, primarily to give rural residents greater access to banking services. As in most other developed countries, the growth of the banking system has been rapid. Total deposits in most banking institutions grew 53% between 1965 and 1970 (Figure 16). The deposits held by the *Postgiro* grew 70%, while deposits in agricultural credit associations grew 86%. These two institutions are relatively small, however when compared with the commercial banks and savings banks.

Commercial banks are prominent suppliers of credit to industry and commerce. In 1970 they provided about 40% of the total outstanding credits to these sectors. The housing construction industry is also a significant borrower. Swedish commercial bank loans are almost entirely short-term, with repayment due in 6 months. It is common, however, for loans to be renewed, or "rolled over," so that in effect they provide long-term financing. This practice has enabled the commercial banks to meet a substantial part of industry's long-term capital requirements.

The trend in Swedish commercial banking has long been toward mergers into fewer, larger banks. Effective 1 January 1972, two of Sweden's largest banks, Scandinavian Bank and the Private Bank of Stockholm, merged to form Sweden's largest bank, the Private Bank of Scandinavia (*Skandinaviska Enskilda Banken*), with assets totaling US\$4.8 billion as of 30 April 1972. This deal, the largest in Swedish financial history, placed almost 40% of the country's commercial banking activity in the hands of the new institution. This move was followed by the 30 June 1972 merger of the Bank of Goteborg, with over \$1 billion in assets, and *Smalands Bank*, one of the leading provincial banks, with over \$200 million in assets. From a high of 84 in 1908, the number of commercial banks (all privately owned with the exception of the state-owned Swedish Credit Bank) has declined to 14 in 1972. As of 31 December 1970, the five largest banks, which handled approximately four-fifths of the commercial banking business, were as follows (assets in millions of U.S. dollars):

| BANK/LOCATION | TOTAL ASSETS | NUMBER OF BRANCHES |
|---|--------------|--------------------|
| Swedish Commercial Bank (<i>Svenska Handelsbanken</i> , Stockholm) . . . | 3,768 | 521 |
| Scandinavian Bank (Goteborg, Stockholm, Malmo) | 3,348 | 357 |
| Swedish Credit Bank (Stockholm) . . . | 1,541 | 138 |
| Bank of Goteborg (Goteborg) | 1,092 | 153 |
| Private Bank of Stockholm (Stockholm) | 1,075 | 52 |

Checking accounts are not widely used in Sweden. Moreover, individuals and businesses with surplus cash generally prefer time and savings deposits as an alternative to portfolio investment. In consequence, time and savings deposits, rather than demand deposits, predominate among the liabilities of the Swedish commercial banks and represent about four-fifths of the total deposits of the public in commercial banks.

Commercial banks act as underwriters of bond issues and as agents in bringing together borrowers and lenders in the case of privately arranged loans. They also perform stockbrokerage services; it is estimated that 95% of all transactions on the Stockholm Stock Exchange are executions of orders transmitted by banks. Through correspondent banks in various parts of the world, together with a few overseas subsidiaries, the Swedish banks efficiently finance Sweden's foreign trade.

The increasingly close economic ties among Scandinavian nations have led to greater collaboration among Scandinavian commercial banks. To facilitate the financing of Nordic enterprises' foreign transactions, a group of Scandinavia's leading banks (the Swedish Commercial Bank, the Norwegian Credit Bank, the Copenhagen Commercial Bank, and Finland's National Stock Bank) established the *Nordfinanz-Bank* in Zurich in 1964, and, together with certain Swiss interests, they established the Nordic Bank of Commerce, Paris, in 1967. The banks in this group together finance approximately one-third of Scandinavia's foreign trade. Further expansion of international banking ties included the 1968 purchase by the Bank of Goteborg and the Christiania Bank and Credit Fund, Oslo, of a minority interest in the Transatlantic Bank, Paris. In 1969, the Scandinavian Bank, Ltd., London, was established by Sweden's Scandinavian Bank, Finland's Northern Union Bank, Ltd., Denmark's Danish Farmers Bank, and Norway's Bergen Private Bank. The most recent joint foreign banking operation was the formation in 1971 of the Nordic Bank, Ltd., in London, in which the Swedish Commercial Bank, the Norwegian Credit Bank, and Finland's *Kansallis-Osake-Pankki* each have a one-third interest.

The commercial banks face keen competition from other banking and financial institutions. Sweden's 273 savings banks at the end of 1970 accounted for approximately 34% of total bank deposits by the public. These banks are generally smaller than, but similar to, the commercial banks. They offer a wide range of ordinary banking services, including checking accounts, and are important in serving small savers. The outstanding credits of the savings banks consist

mainly of mortgage loans on urban and agricultural property. Aided by tax treatment more favorable than that accorded to the commercial banks, the savings banks usually pay a higher rate of interest on time and savings deposits. The savings banks have their own commercial bank, the Savings Banks Bank (*Sparbankernas Banken AB*), which acts for them as a correspondent bank.

The Investment Bank of Sweden, established by a 1967 parliamentary resolution and wholly owned by the government, provides capital for some of the larger, longer-term, and riskier investments in industry and commerce. The bank does not accept public funds, but obtains funds primarily by borrowing from the National Pension Insurance Fund.

The Post Office, in addition to its postal functions, receives deposits on savings accounts and maintains a checking service. The primary purpose of the Post Office Savings Bank is to serve small savers. Growth of this system has been rapid during the last decade, due in part to the government's guarantee of deposits and in part to the numerous branches that allow customers to deposit or withdraw funds at hours when the commercial and savings banks are closed. The Postal Check Service was founded in 1925 to provide facilities for the ready transfer of money through a system of postal checking accounts. Nearly all business firms and many individuals maintain *Postgiro* accounts as a matter of convenience. The government, local authorities, and state corporations also make extensive use of the system, and the large banks collect funds from branch offices through their *Postgiro* accounts. The system is widely used by people who do not have checking accounts elsewhere in the banking system.

Although the commercial and savings banks have traditionally supplied part of the credit requirements of agriculture, a number of credit institutions are organized especially for this purpose. Rural mortgage associations, local associations that make loans exclusively against first mortgages on farm property, are the most important institutions for supplying long-term finance to agriculture. The Union of Agricultural Credit Associations (*Sveriges Jordbrukskassöforbund*), through its district and local societies, conducts a banking business in the agricultural field, accepting deposits and supplying credit to farmers through loans, overdrafts, and the discounting of bills.

The influence of the central bank—the Swedish National Bank—extends to most of the financial activities in the economy. The bank issues currency notes, serves as a banker's bank and "lender of last resort," and regulates the country's monetary and

credit system. In addition, the bank is a depository for government funds and grants advances or credits to the government as needed. It also has custody of the country's reserves of gold and foreign exchange. The bank is custodian for the cash reserves of the commercial banks and, through its offices in Stockholm and Goteborg, serves as a clearinghouse for the commercial banking system.

Private insurance companies, the National Pension Insurance Fund, and the numerous mortgage institutions provide specialized financial services. The insurance companies, administering capital of US\$6.471 million in 1970, invest chiefly in blue-chip securities and in real estate mortgages. The National Pension Insurance Fund, administering \$7.953 million, invests employers' pension contributions and voluntary contributions by employees. The fund's portfolio includes bonds and unsecured debenture loans publicly tendered by Swedish banks, government securities, issues by credit institutions, and special loans to employers of up to 50% of their pension contributions during the preceding year. The majority of mortgage institutions and credit companies are active in the housing loan market. The largest of these are the Urban Mortgage Bank (\$5.380 million in loans outstanding in 1970) and the Housing Credit Bank (\$1.851 million), which grant primary and secondary loans for real estate in towns and urban communities.

Swedish monetary policy relies mainly on traditional techniques to achieve its goals, such as changing the official discount rate, conducting open-market operations, altering reserve requirements for commercial banks, and moral suasion. In addition, the authorities influence the level of credit and bank liquidity through debt management policy (primarily the borrowing and lending activity of the National Debt Office), investment ratios for other financial institutions, penalty rates for continued or excessive discounts by commercial banks with the Swedish National Bank, and bond issue controls. Since 1967 annual agreements between the government and commercial banks have determined the credit level for housing construction.

In 1969-70, monetary policy was increasingly restrictive to cope with a rising balance of payments deficit and increasing inflationary pressures. This restraint continued in 1971 despite a dampening of domestic demand. Credit was eased for industrial investment, however, while restrictions on other credit extensions, particularly to consumers, were maintained.

2. Domestic trade

Sweden has well-developed distribution and marketing systems. The cities of Stockholm, Goteborg, and Malmo are the principal merchandising centers and ports of entry. Residing mainly in the southern third of the country, most of the population is well served by a rapid and efficient transportation network.

The greater part of all wholesale and retail trade is carried out through private channels. The share of state enterprises is confined to the liquor and raw tobacco monopolies. Cooperatives, which account for about 10% of all retail stores, account for about one-sixth of total retail sales. Although chain stores are increasing in importance, the most common type of retailer is, by far, the independent shopkeeper. Because of the greater mobility resulting from the increase in the ownership of automobiles, the trend has been toward fewer, but larger stores.

E. International economic relations

The Swedish economy has benefited substantially from large-scale industrialization and specialization made possible by its ready access to foreign markets. The country's foreign trade turnover is equal to nearly half of its GNP; basically, it exports semimanufactured and highly specialized manufactured goods and imports raw materials and components. By specializing in production of goods embodying high quality, advanced technology, and unique design, Sweden is able to compete successfully in world markets despite its relatively high wage costs. Indeed, exports have expanded more rapidly than domestic production over the past decade and presently absorb almost half of the country's industrial output. Sweden's liberal trade policy has facilitated an equivalent growth of imports. Generally, annual imports exceed exports, and the resulting trade deficits are financed largely by earnings from shipping and inflows of long-term capital. (U/OU)

1. Foreign trade (U/OU)

Traditionally, Sweden's exports consisted primarily of crude materials and products derived directly from its natural resources—notably, its forests and iron ore. Since World War II, however, there has been a significant shift away from crude materials and basic products toward more highly processed exports. Although wood, woodpulp, and paper products, as well as iron ore and concentrates, remain significant export items, machinery and transportation equipment accounted for 42% of total export earnings in

1971, compared with 32% a decade earlier (Figure 17). Manufactured products comprise almost 78% of total exports.

The structure of imports also has changed markedly. As Sweden's highly specialized trade in industrial components developed, the share of foodstuffs, crude materials, and mineral fuels in total imports fell from 34% in 1961 to 27% in 1971. At the same time, there was an increase in demand for imported capital goods and manufactured consumer items. Substantial quantities of metalworking machinery and electric power equipment were needed in connection with industrial expansion, and increasing amounts of photographic supplies, musical instruments, sound equipment, sporting goods, and toys were imported to satisfy burgeoning demand stimulated by rising consumer incomes. The most important imports and exports in 1971, as percentages of total imports and exports, respectively, are shown in the following tabulation:

| | |
|--|------|
| Imports: | |
| Machinery, other than electric | 14.8 |
| Petroleum and petroleum products | 10.7 |
| Electric machinery and appliances | 7.9 |
| Road motor vehicles | 5.9 |
| Iron and steel | 5.5 |
| Textile yarns, fabrics, etc. | 5.0 |
| Clothing | 3.6 |
| Fruit and vegetables | 2.7 |
| Coffee, tea, cocoa, spices, etc. | 1.9 |
| Ships and boats | 1.2 |
| Exports: | |
| Machinery, other than electric | 18.0 |
| Road motor vehicles | 9.8 |
| Paper and paperboard | 7.8 |
| Electric machinery and appliances | 7.8 |
| Iron and steel | 7.5 |
| Pulp and waste paper | 7.3 |
| Wood, shaped or simply worked | 5.3 |
| Ships and boats | 5.2 |
| Manufactures of metals not elsewhere specified | 3.5 |
| Iron ore and concentrates | 3.3 |

Sweden's rapid industrial growth since 1960 has been sustained by a strong West European demand for Sweden's industrial raw materials and manufactures. The countries of the European Communities (EC) and the European Free Trade Association (EFTA) together took over 72% of Sweden's total exports in 1971 (Figure 18). The United Kingdom and West Germany are Sweden's most important export markets, especially for wood, pulp, paper products, metals, and metal products. The British and West German shares in the Swedish export market have been declining, however, from 16% in each case in 1960 to 14% and

FIGURE 17. Foreign trade, by commodity groups* (U/OU)
(Standard international trade classifications; millions of U.S. dollars)

| | 1961 | | 1971 | |
|--|----------------|------------------|----------------|------------------|
| | Amount | Percent of total | Amount | Percent of total |
| Imports, c.i.f.: | | | | |
| Food and live animals..... | 316.5 | 10.1 | 655.6 | 8.7 |
| Beverages and tobacco..... | 47.6 | 1.5 | 80.2 | 1.1 |
| Crude materials, inedible, except fuels..... | 253.3 | 8.1 | 345.0 | 4.6 |
| Mineral fuels, lubricants, and related materials..... | 425.5 | 13.6 | 918.7 | 12.2 |
| Animal and vegetable oils and fats..... | 20.6 | 0.7 | 46.4 | 0.6 |
| Chemicals..... | 239.0 | 7.6 | 649.0 | 8.6 |
| Manufactured goods classified chiefly by material..... | 720.0 | 23.0 | 1,643.6 | 21.8 |
| Machinery and transport equipment..... | 839.7 | 26.8 | 2,315.8 | 30.8 |
| Miscellaneous manufactured articles..... | 251.8 | 8.0 | 854.8 | 11.4 |
| Commodities and transactions not classified according to kind..... | 22.4 | 0.7 | 14.5 | 0.2 |
| Total..... | 3,136.4 | 100.0 | 7,523.6 | 100.0 |
| Exports, f.o.b.: | | | | |
| Food and live animals..... | 91.5 | 3.1 | 190.9 | 2.4 |
| Beverages and tobacco..... | 0.6 | <i>Insig</i> | 9.6 | 0.1 |
| Crude materials, inedible, except fuels..... | 885.0 | 30.1 | 1,443.0 | 18.2 |
| Mineral fuels, lubricants, and related materials..... | 11.6 | 0.4 | 72.9 | 0.9 |
| Animal and vegetable oils and fats..... | 9.8 | 0.3 | 23.1 | 0.3 |
| Chemicals..... | 85.7 | 2.9 | 317.0 | 4.0 |
| Manufactured goods classified chiefly by material..... | 792.9 | 27.0 | 2,050.0 | 25.8 |
| Machinery and transport equipment..... | 950.2 | 32.3 | 3,344.7 | 42.2 |
| Miscellaneous manufactured articles..... | 100.1 | 3.4 | 438.8 | 5.5 |
| Commodities and transactions not classified according to kind..... | 12.5 | 0.4 | 40.7 | 0.5 |
| Total..... | 2,939.9 | 100.0 | 7,930.7 | 100.0 |

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

11%, respectively, in 1971. Since World War II, West Germany has been Sweden's most important supplier, providing automobiles, buses, and machinery, as well as luxury items such as jewelry and musical instruments.

During the 1960's, Sweden's trade pattern was directly affected by its membership in EFTA. Sweden joined with the United Kingdom, Norway, Denmark, Austria, Switzerland, and Portugal in forming EFTA in 1959, to promote the expansion of trade among themselves and thus to counter adverse effects on their trade anticipated from the creation of the European Economic Community. Sweden's export trade accelerated in the 1960's, largely as a result of the developing EFTA market. By 1971, EFTA (including Finland as an associate member and Ireland as a full member) accounted for 42% of Sweden's foreign trade, compared with 29% in 1960.

The intensification of economic ties among the Nordic countries also has played an important part in the development of trade among the Scandinavian countries. By pooling their resources and instituting new ties in banking, aviation, shipping, industrial research, and hydroelectric power exploitation, Sweden and its neighbors have spurred their industrial development. Of particular importance is a flourishing trade in manufactured components that permits greater industrial specialization in Sweden, while allowing a number of Danish and Norwegian firms to thrive solely by subcontracting for Swedish manufacturers. About one-fifth of Sweden's imports originate in the other Scandinavian countries, and those countries take a quarter of its exports.

The enlargement of the E.C. on 1 January 1973 to include the United Kingdom, Denmark, and Ireland as full members led Sweden to sign an industrial free

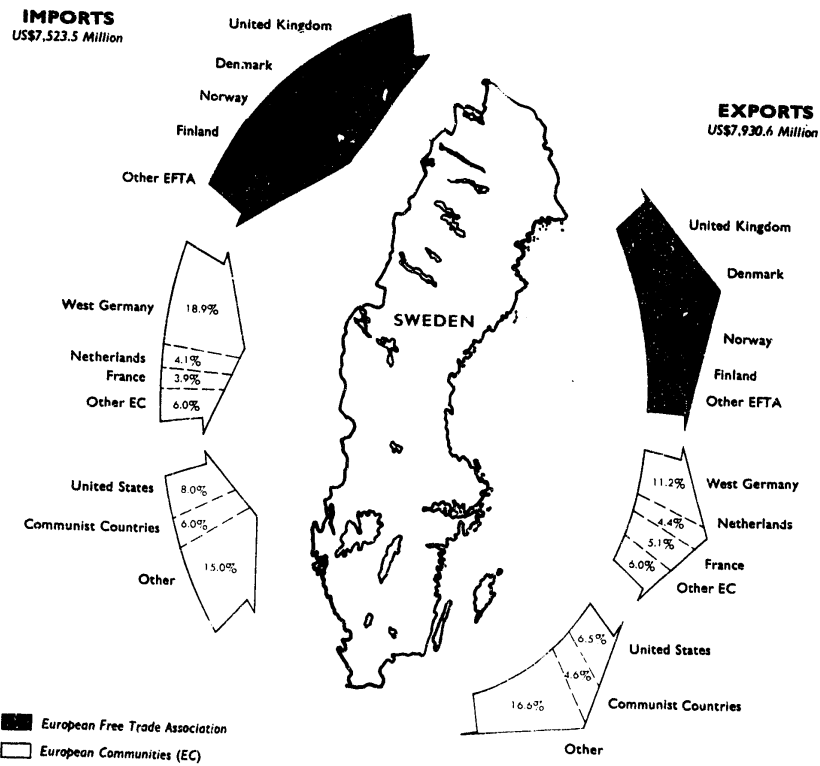


FIGURE 18. Geographic distribution of foreign trade, 1971 (U/OU)

trade agreement with the EC in July 1972. (The agreement also included Norway, which later rejected full membership in the EC). Sweden's traditional neutrality prevented it from seeking full membership in the EC, but economic considerations made some agreement vital: the new community of nine is expected to take about 55% of Sweden's exports. Sweden's agreement with the EC, and presumably also with Norway, will be implemented over a 5-year transitional period beginning in 1973. The transitional period is to be extended beyond 5 years for items such as paper, in order to protect "sensitive" EC industries.

Although expanding, Sweden's trade with the Communist countries still accounts for less than 5% of

its total trade. Under various trade and cooperation agreements, Sweden exports a wide variety of products to the U.S.S.R. and East European Communist countries. The principal commodities traded include Swedish machinery, pulp, paper, motor vehicles, and specialty steels in exchange for foodstuffs, fuels, ores, wood and lumber, fertilizers, chemicals, iron and steel, textiles, and machinery and transport equipment. Sweden has intensified its trade initiatives toward the People's Republic of China. In April 1972, for example, Sweden held a large trade fair in Peking, displaying mainly Swedish and selected foreign (including U.S.) machinery. In the past few years, China has bought an increasing quantity of Swedish

metals, machinery, wire, and chemicals. Specialty steels comprise the most important category of exports to China. Sweden's relatively small imports from China include foodstuffs, ores, chemicals, textile yarns and threads, and clothing.

The importance of foreign trade to Sweden's economy is reflected in the country's liberal commercial policy. Sweden actively supports the concept of free multilateral trade and follows a policy aimed at the progressive lowering of trade barriers to encourage an expansion of trade. As a participant in the General Agreement on Tariffs and Trade (GATT), Sweden actively engaged in the Kennedy Round of tariff negotiations. Sweden is an active member of the Organization for Economic Cooperation and Development (OECD), International Monetary Fund (IMF), and International Bank for Reconstruction and Development (IBRD). Additionally, Sweden has signed the General Agreement to Borrow and regularly takes part in the Group of Ten meetings.

Sweden's customs tariffs are among the lowest in the world. Nonagricultural products are virtually free from quantitative restriction and import licensing. Goods from Japan require licenses, but these are usually issued freely. Imports of specified textiles and clothing from certain countries, such as South Korea, are subject to licensing. All imports from Rhodesia are prohibited. Swedish exports of ships, scrap iron, and arms are subject to licensing, and the Swedish Board of Trade has standby authority to license exports of other goods to assure adequate supplies for the domestic market.

To insure farm incomes adequate to meet rising costs of living, Sweden employs variable levies on certain imported food products. Farm prices are annually adjusted upward with increases in the consumer price index in excess of 3%. This adjustment is part of the annual agricultural price agreement concluded between the government and the farm associations.

Although its policies toward capital flows traditionally have been liberal, Sweden has followed a somewhat restrictive policy since 1969. Direct investment in other industrial countries is normally permitted only if the investment is of obvious benefit to Sweden's foreign exchange position. Preferential treatment is accorded to direct investment in countries that are the main recipients of Swedish development aid. The purchase of foreign securities by Swedish residents requires authorization that is usually not granted. Commercial banks' foreign assets and liabilities are also controlled. The authorization necessary for foreign direct investment in Sweden is

normally given, and authorization for the liquidation of such investments and repatriation of profits is always granted. Investment in real estate, however, is restricted to residents.

2. Balance of payments (U/OU)

Until the mid-1960's, Sweden's chronic trade deficits were comfortably financed by net receipts from services, especially shipping earnings, and from substantial inflows of capital. The rising level of imports induced by economic expansion and domestic prosperity, however, resulted in a widening of trade deficit. There was also a marked increase in foreign travel by Swedish nationals, in remittances abroad by foreign laborers (largely Finns) employed in Sweden, and in the propensity of Swedish firms to invest abroad, all of which contributed to a general weakening of the overall balance of payments (Figure 19). In consequence, Sweden's external reserve position declined sharply between 1966 and 1969. In the latter year, a US\$350 million deficit resulted from an unusual outflow of capital and larger-than-normal government transfers abroad, combined with the worsening trade and services accounts. By the end of 1969, Sweden's official external reserves of \$696 million corresponded to only 1.4 months' imports.

The worsening of the trade balance during 1968-70 was to some extent a temporary condition reflecting an upturn in imports for inventory in anticipation of future increases in import prices. Similarly, the sudden reversals in the net flow of capital in 1969 and 1970 had their origins in transitory conditions. In 1969, much of the capital outflow resulted from the comparatively low Swedish interest rates and from speculation against a revaluation of the West German mark. Rising interest rates in Sweden from mid-1969 to mid-1970 and tightening of controls on capital exports reversed the flow and contributed to the substantial capital account improvement in 1970.

With import growth virtually halted in 1971 as a result of the recession, Sweden posted a sizable trade surplus—its first since 1951. Imports grew less than 1%, while exports grew 9%. The 1971 trade surplus, largely the result of a sudden but temporary check in demand and a reversal of inventory build-up, was probably an aberration. As demand revives, imports again will tend to exceed exports. Moreover, although a net long-term capital inflow was maintained throughout 1971, there are indications that Swedish long-term investment and lending abroad will increase as restrictions on capital exports are gradually lifted.

FIGURE 19. Balance of payments (U/OU)
(Millions of U.S. dollars)

| | 1967 | 1968 | 1969 | 1970 | 1971* |
|---|------|------|------|------|-------|
| Overall balance..... | -41 | -16 | -350 | 128 | 291 |
| Current account..... | -47 | -116 | -211 | -334 | 189 |
| Trade balance (exports minus im- ports)..... | -149 | -181 | 183 | -207 | 407 |
| Services (net)..... | 186 | 167 | 126 | 35 | -27 |
| Of which: | | | | | |
| Freight and other transporta- tion..... | 403 | 448 | 452 | 478 | 466 |
| Unilateral transfers (net)..... | -84 | -102 | -154 | -162 | -191 |
| Nonmonetary sector capital account..... | 120 | 111 | -50 | 236 | 22 |
| Direct investment..... | -10 | 64 | -88 | -93 | -97 |
| Other private long-term capital..... | 110 | 71 | 102 | 297 | 172 |
| Private short-term capital**..... | 26 | -13 | -15 | 78 | -20 |
| Central government borrowing..... | -6 | -11 | 19 | -46 | -33 |
| Allocations of SDR's..... | | | | 41 | 38 |
| Net errors and omissions**..... | 114 | -11 | - | 345 | 42 |
| Monetary sector accounts***..... | 41 | 16 | 350 | 128 | 291 |
| Central institutions (net)..... | 210 | 17 | 151 | -1 | na |
| Of which: | | | | | |
| Monetary gold..... | 0 | -24 | -1 | 28 | na |
| SDR holdings..... | | | | 11 | -38 |
| IMF General Account position..... | 29 | -28 | 68 | -27 | na |
| Foreign exchange..... | 172 | 78 | 61 | -30 | na |
| Private institutions (net)..... | -169 | -1 | 199 | -84 | na |

na Data not available.
... Not pertinent.
*Estimated.
**Most short-term trade credits and changes in certain other private short-term assets and liabilities are included in "Net errors and omissions."
***Net increases in Bank of Sweden and commercial bank foreign assets are debits (-); decreases are credits (+).

Substantial amounts of medium-term and long-term credits are usually extended in connection with the financing of Sweden's growing exports of capital goods.

3. Foreign aid (\$)

In 1968, the U.N. Conference on Trade and Development recommended that developed countries extend development aid (official and private) to less developed countries in an amount that, by 1975, would be equal to 1% of each donor country's GNP. Sweden, however, adopted a more ambitious goal, in that it agreed to exclude private aid from the computation and to extend official aid equal to 1% of its GNP. It is not likely, however, that Sweden will achieve this goal until the late 1970's. By virtue of successive increases in aid appropriations, the Swedish official aid budget has grown from about 0.2% of the GNP in FY68 to 0.6% in FY72 and is estimated at 0.7% in FY73. The 25% increase in total aid budgeted

for FY73 is largely concentrated in bilateral aid, as shown below, in millions of U.S. dollars:

| | FY72 | FY73 (proposed) |
|--|--------------|--------------------|
| Multilateral aid..... | 88.4 | 101.9 |
| Bilateral aid..... | 127.8 | 166.5 |
| Grants..... | 72.9 | na |
| Credits..... | 54.9 | na |
| Administration, recruitment, and information..... | 7.1 | 11.0 |
| Total..... | 223.3 | 279.4 |

na Data not available.

Since 1968 the general tendency has been toward more nonproject bilateral aid for specified economic sectors. Multilateral aid, although rising, has been gradually declining as a share of the total since the mid-1960's and now accounts for about 40% of the total. Official bilateral credits are extended without being tied to imports from Sweden. Standard terms are 25-year maturity, 10-year grace period, and 2%

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interest rate, but an increasing share of the bilateral credits is being extended on terms of 50 years and 0.75% interest rate. Bilateral aid is provided primarily for education, health, clothing, family planning, and refugee assistance.

Some shifts have occurred in the geographic distribution of bilateral aid. In the past, Swedish aid policy concentrated strictly on those countries with low per capita incomes, and the largest aid appropriations went to India, Ethiopia, and Pakistan. There has been an intensified effort by the Social Democrats, however, to extend more aid to countries with leftist, "progressive" regimes—such as Tanzania, North Vietnam, and Cuba—that are considered sympathetic with Sweden's current political orientation. Moreover, aid is being channeled to African liberation movements—primarily in Angola, Portuguese Guinea, and Mozambique. A small sum is

also being given as "humanitarian" aid to the national liberation movements in Indochina, the Pathet Lao and Viet Cong. At the same time, Sweden has chosen not to replenish its share in the Asian Development Bank because the Swedes consider it to have aided rightist military regimes.

Sweden offers several additional kinds of economic support to the developing countries. A system of governmental guarantees of private investments and suppliers' credits has been in effect for some time. In June 1971 Sweden exempted from customs duty almost all imports of industrial goods and processed raw materials from the developing countries. Raw material imports from those areas are also generally duty free. A reserve fund of approximately US\$10.4 million for catastrophe aid is also being considered by the Swedish International Development Authority.

Places and features referred to in this chapter (U/OU)

| COORDINATES | | | COORDINATES | | |
|--|-------|-------|----------------------------------|-------|-------|
| | ° 'N. | ° 'E. | | ° 'N. | ° 'E. |
| Agesta | 59 14 | 18 05 | Luleå | 65 34 | 22 10 |
| Angermanalven (<i>strm</i>) | 62 48 | 17 56 | Luleålv | 65 35 | 22 03 |
| Arendal | 58 59 | 17 20 | Luossavaara (<i>mt</i>) | 67 52 | 20 14 |
| Avesta | 60 09 | 16 12 | Lysekil | 58 16 | 11 26 |
| Barseback | 55 46 | 12 57 | Malmberget | 67 10 | 20 40 |
| Brofjorden | 58 22 | 11 26 | Malmö | 55 36 | 13 00 |
| Bua | 57 14 | 12 07 | Marviken (<i>cape</i>) | 60 07 | 18 49 |
| Domnarvet (<i>sec. of Borlänge</i>) | 60 30 | 15 27 | Motala | 58 33 | 15 03 |
| Finspång | 58 43 | 15 47 | Narvik, Norway | 68 26 | 17 25 |
| Forsmark | 60 22 | 18 09 | Nynashamn | 58 54 | 17 57 |
| Gällivare | 67 08 | 20 42 | Oskarshamn | 57 16 | 16 26 |
| Goteborg | 57 43 | 11 58 | Oxelösund | 58 40 | 17 06 |
| Gotene | 58 32 | 13 29 | Ringhals (<i>point</i>) | 57 15 | 12 05 |
| Gotland (<i>isl</i>) | 57 30 | 18 33 | Ritsemjökkåtan (<i>resort</i>) | 67 43 | 17 28 |
| Grangesberg | 60 05 | 14 59 | Ronnskar | 64 40 | 21 16 |
| Hisingen (<i>isl</i>) | 57 46 | 11 53 | Skagerrak (<i>strait</i>) | 57 45 | 09 00 |
| Indalsulven (<i>strm</i>) | 62 31 | 17 27 | Sound, The (<i>sound</i>) | 55 50 | 12 40 |
| Jonköping | 57 47 | 14 11 | Stenungsund | 58 05 | 11 49 |
| Jonsered | 57 45 | 12 10 | Stockholm | 59 20 | 18 03 |
| Kaitum | 67 33 | 27 07 | Stråssa | 59 45 | 15 13 |
| Karlskoga | 56 10 | 14 51 | Studsвик | 58 46 | 17 23 |
| Karlskoga | 59 20 | 14 31 | Sundsvall | 62 23 | 17 18 |
| Karlstad | 59 22 | 13 30 | Svappavaara | 67 39 | 21 04 |
| Kattegat (<i>strait</i>) | 57 00 | 11 00 | Torslanda | 57 43 | 11 45 |
| Kimstad | 58 32 | 15 58 | Trosa | 58 54 | 17 33 |
| Kiruna | 67 51 | 20 13 | Umeå | 63 50 | 20 15 |
| Kubikenborg (<i>sec. of Sundsvall</i>) | 62 23 | 17 21 | Umeålv (<i>strm</i>) | 63 47 | 20 16 |
| Laisvall | 66 08 | 17 10 | Uppsala | 59 52 | 17 38 |
| Lapland (<i>region</i>) | 68 00 | 25 00 | Vasterås | 59 37 | 16 33 |
| Leningrad, U.S.S.R. | 59 55 | 30 15 | Vietasjokk (<i>strm</i>) | 67 29 | 18 22 |
| Linköping | 58 25 | 15 37 | | | |

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