Industry & Trade Summary

Oilseeds

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PREFACE

In 1991 the United States International Trade Commission initiated its current *Industry and Trade Summary* series of informational reports on the thousands of products imported into and exported from the United States. Each summary addresses a different commodity/industry area and contains information on product uses, U.S. and foreign producers, and customs treatment. Also included is an analysis of the basic factors affecting trends in consumption, production, and trade of the commodity, as well as those bearing on the competitiveness of U.S. industries in domestic and foreign markets.[1]

This report on oilseeds covers the period 1986 through 1990 and represents one of approximately 250 to 300 individual reports to be produced in this series during the first half of the 1990s. Listed below are the individual summary reports published to date on the agricultural, animal, and vegetable products sector.

USITC publication number	*Publication date*	*Title*
2459 AG-1	November 1991	Live Sheep and Meat of Sheep
2462 AG-2	November 1991	Cigarettes
2477 AG-3	January 1992	Dairy Produce
2478 AG-4	January 1992	Oilseeds

[1] The information and analysis provided in this report are for the purpose of this report only. Nothing in this report should be construed to indicate how the Commission would find in an investigation conducted under statutory authority covering the same or similar subject matter.

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INTRODUCTION

This summary report provides information on all commonly known oilseeds, such as soybeans, sunflower seed, cottonseed, and flaxseed. Also included are products classified as oilseeds but often used for other purposes, such as sesame seed. A leading oilseed, peanuts, is excluded from this report and is to be included in a separate summary on edible nuts, its highest value domestic use. Vegetable oils and animal fats are also covered in a separate report, as are oilseed meals. All of the oilseeds are provided for in chapter 12 of the Harmonized Tariff Schedule of the United States (HTS). Information is presented in this report on the structure of the U.S. and foreign oilseed-farming sectors, domestic and foreign tariff and nontariff measures, and the competitive conditions in domestic and foreign oilseed markets. The analysis generally covers the period 1986-90.

U.S. production of the oilseeds covered in this report amounted to about $12 billion at the farm level in 1990. Soybeans accounted for about 92 percent of such production; cottonseed, 6 percent; sunflower seed, 2 percent; and the remaining oilseeds, including flaxseed, less than 1 percent. Oilseeds are used chiefly to produce vegetable oil and oilseed meal, which in turn are used to produce food fats and oils products, and animal feed (for poultry, hogs, and cattle). The U.S. Government price-support system provides oilseed farmers in the United States with certain benefits, and the U.S. Government (the U.S. Department of Agriculture) operates an export credit guarantee program to assist U.S. exports of oilseeds (and other U.S. farm products).

Foreign markets are very important for U.S. oilseed products, directly purchasing about 33 percent of domestic output, and indirectly, through purchases of U.S. vegetable oil and oilseed meal, purchasing an additional 7- percent equivalent of U.S. oilseed production. Soybeans are the principal U.S. oilseed export; the U.S. imports of significant quantity are rapeseed (canola) and flaxseed (both imported principally from Canada) and sesame seed (imported chiefly from Latin American and Asian countries).

World trade of oilseeds is substantial and involves most of the leading countries of the world either as exporters, importers, or both. In 1989 (the latest year for which world data are available), world imports of oilseeds amounted to about $10.5 billion, according to data of the Food and Agriculture Organization (FAO). In 1990, U.S. oilseed exports of $3.7 billion constituted about 9 percent of the $40 billion of exports of all U.S. agricultural products. In 1986, U.S. oilseed exports accounted for about 15 percent of U.S. agricultural exports of $31 billion. The following is a brief description of the key oilseeds cited in this report.

Soybeans

The soybean is the principal source of vegetable oil for the U.S. diet; the leading supplier of protein needed to produce poultry, pork, and beef; and an important source of raw materials for the chemical industry. Soybeans are the seeds of an annual plant that requires from 75 to 175 days to mature after emergence, depending on the variety of the soybeans and the growing conditions. The soybean yields on the average, by weight, 18 percent oil, 79 percent meal, and 3 percent miscellaneous byproducts including waste. The popularity of the soybean has increased so that only corn among all U.S. field crops has a greater value of commercial production.

Certified soybean seed (as well as other certified crop seeds) consists of quality seed of superior varieties grown and distributed to insure genetic identity and purity. In the United States, the production of such seeds is controlled by crop improvement associations and by private seed companies. Commercial seed can be protected under a patent-protection process for a period of 18 years under the Plant Variety Protection Act, as amended.[1]

The principal uses of soybeans are for reduction into meal and oil ("crushing"), for use as a planting seed, or for direct use in animal feed or for human consumption. In 1989/90 (the latest full year for which data are available), 92 percent of the domestic consumption of 1,246 million bushels of soybeans were crushed to produce soybean meal and soybean oil; 8 percent were used for seed, directly for animal feed, for food, or for other uses. In recent years, about 62 percent of the value of soybeans has come from the sale of soybean meal and 38 percent from that of soybean oil.[2]

Soybeans, though currently used in the United States mainly for crushing, have been a traditional direct source of food in Asia, and in recent years the use of soybeans for food has grown in the United States. After processing, soybeans can be used as food as textured protein (such as meat extenders or substitute meat products), or in oriental foods as tofu (bean curd), miso (bean paste), or soy sauce (tamari). Edible-grade soybeans have become an important item, particularly for the U.S. export market in Japan, where importers contract directly with U.S. farmers for the growing and shipment of edible-grade soybeans.

Cottonseed

Cottonseed is a byproduct of cotton ginning. About 60 percent of the domestic output of cottonseed is used for oil, and the remaining 40 percent for planting, feed, or fertilizer. Cottonseed yields 16 to 17 percent of its weight as cottonseed oil; the residue consists of oilcake, linters, and hulls. Crude cottonseed oil, first extracted from the seed, is often separated into its olein and stearin fractions by chilling (so-called

[1] Mary Knudson and G. Frisvold, "Patents May Boost Plant Research," *Agricultural Outlook*, U.S. Department of Agriculture (USDA), Nov. 1989, pp. 24-26.

[2] James Schuab and others, *The U.S. Soybean Industry*, USDA, May 1988, p. 10.

winterizing) methods. In 1989/90, about 63 percent of U.S. reported consumption of cottonseed oil was to make salad or cooking oil, 30 percent for baking and frying fats, and the remaining uses mostly for other edible food products.[3] Since cottonseed is bulky and perishable, most of the crop is processed as quickly as possible after harvest. Cottonseed is particularly well suited for direct feeding to cattle owing to its palatability, high protein content, and high energy content. In California, the second-leading producing State, most of the cottonseed grown is fed to cattle. Because of its bulk and perishability, little cottonseed enters international commerce.

Sunflower Seed

Sunflower seed, one of the world's major oil-bearing seeds, is obtained from the sunflower, a hardy drought-resistant plant that is well suited to the colder or arid areas where many other oilseed crops cannot be grown. Although primarily used as a source of oil, sunflower seed also is eaten as a nut and used in bird feed mixtures. The varieties of sunflower seeds grown in the United States for bird feed and human food have a larger kernel than those grown for oil. Typical sunflower seed yields oil equivalent to about 40 percent of the weight of the kernel and hull. According to the U.S. Bureau of the Census, about 55 percent of reported U.S. consumption of sunflower seed oil went into salad and cooking oil, 32 percent into baking and cooking fats, and the remainder principally for making resins and plastics.

The oil-stock sunflower seed used to produce oil and meal accounted for about 70 percent of apparent U.S. consumption in 1989/90. The other uses of sunflower seed, which are mainly for use in confectionery (edible nuts) but also as a birdseed, have taken about 30 percent of apparent U.S. consumption over the past 7 years. Demand for confectionery sunflower seed has been growing sharply over the past several years, and roasted, shelled sunflower seeds are frequently found in retail stores as alternatives to peanuts.

Flaxseed

Virtually all the domestic flaxseed produced in the United States (except that used for seeding) is used for extracting linseed oil. Flax grown for fiber is a different type, and not suitable for oil production, owing to its low seed yield. In the United States, little or no flax is grown specifically for fiber. Flaxseed yields about 36 percent of its weight in linseed oil and a residual linseed cake or meal used for feeding livestock. The value of linseed oil obtained from flaxseed represents about 70 percent of the combined value of the linseed oil and the linseed meal. Linseed oil can be used only for inedible purposes in the United States: in 1989/90, the most important use was in the production of resins and plastics (47 percent of reported U.S. consumption), paint and varnish (27 percent), and other industrial applications.

Other Minor Oilseeds

Rapeseed, also known as colza or canola, is the seed obtained from several species of the genus *Brassica*, which also includes mustard, turnips, and cabbage. Rapeseed, when pressed, typically yields about 40 percent of its weight in rapeseed oil, which is notable for its high content of erucic acid, a known carcinogen, and is thus inedible. The more recently developed varieties of rapeseed, which have very low or no erucic acid are called "canola." Canola oil is used mainly as a salad oil and in shortening and margarine in competition with other edible vegetable oils; the Food and Drug Administration approved the use of canola oil in food products in the United States in 1985.

Sesame seed is grown chiefly in tropical countries; none is grown domestically. Sesame can be used either as whole seed or is crushed for its oil and meal, but in the United States, the whole seed is used primarily as a topping for bakery products, principally in competition with poppy seed, and as a filling in pastry and candy. Some low-grade seed is also used for birdseed. When crushed, sesame seed yields an exceptionally high proportion of superior quality oil (about 47 percent of the weight of the seed).

Safflower seed, an annual crop, is grown principally in the United States, Mexico, India, and the Middle East. In the United States, virtually all the safflower seed produced is reduced into vegetable oil and meal. This oilseed contains about 32 to 40 percent vegetable oil; safflower seed meal is generally fed to livestock as a protein feed supplement. U.S. farmers often grow safflower seed under irrigation in a rotation pattern with grains or other crops.

None of the other leading oilseeds found in the world—copra, castor beans, and poppy seed—are produced in significant commercial quantities in the United States. Copra is the dried meat kernel of the coconut, from which coconut oil is expressed, with the average yield of oil of about 64 percent of the weight of the copra. Castor beans, the seed of the castor plant, a perennial crop in the tropics and subtropics and an annual in temperate areas, are utilized almost entirely to make castor oil. Castor oil constitutes about 45 percent of the weight of the beans and is an inedible oil used chiefly in industrial applications, with minor amounts used in pharmaceuticals. Poppy seeds are used chiefly as bakery topping in competition with sesame seed.

[3] See U.S. Bureau of the Census, *Current Industrial Reports: Fats and Oils, Production, Consumption, and Stocks, Crop Year 1989/90*, p. 6.

The other oilseeds classified under chapter 12 of the HTS include shea nuts, palm nuts and kernels, apricot and peach kernels, and oilseeds and oleaginous fruits, not elsewhere classified. None of these oilseeds are traded in significant volumes either domestically or internationally.

U.S. INDUSTRY PROFILE

Industry Structure

The structure of the U.S. oilseed industry is illustrated in figure 1. The SIC categories applicable to the industry are 0116, soybeans; 0119, cash grains, not elsewhere classified (flaxseed, safflower seed, rapeseed, and sunflower seed), and 0131, cotton (cottonseed).

The number of U.S. oilseed farms declined by 2.5 percent annually from about 576,300 in 1982 to about 503,100 in 1987 (the only years for which official U.S. data are available).[4] Of the oilseed farms existing in 1987, 442,000 were soybean farms (88 percent of the total); 43,000 were cotton farms (9 percent), 12,000 were sunflower seed farms (2 percent); 6,000, flaxseed farms (1 percent); and 1,000, safflower seed farms (less than 0.3 percent). There were 476 farms listed as producing rapeseed (canola) in 1987.

The soybean farm sector is the key component of the domestic oilseed industry. In 1987, the average U.S. soybean farmer grew 125 acres of soybeans. The largest 50 percent of U.S. soybean farmers (each of whom has at least 260 acres of soybeans) together produced 85 percent of U.S. soybean output. The largest 10 percent of soybean farmers (each having at least 1,000 acres of soybeans) accounted for 32 percent of U.S. production.[5]

In 1990, soybeans were grown in commercial quantities in 29 States; however, 7 States (Illinois, Iowa, Minnesota, Indiana, Ohio, Missouri, and Nebraska) accounted for 71 percent of the 1990 crop, according to the U.S. Department of Agriculture.[6] The so-called "Corn Belt States," including Illinois (18 percent of the 1990 crop), Iowa (17 percent), Minnesota (9 percent), Indiana (9 percent), and Ohio (7 percent), dominate the production of soybeans. Corn-Belt States have consistently had the lowest cost of production of all U.S. soybean regions, in part a reflection of their favorable rainfall and climate and excellent soils.[7] Soybeans also fit into the crop rotation patterns complementing corn, wheat, and other grain and forage crops, also planted in Corn Belt farms; for example, soybeans are often planted in lieu of corn and other grain when adverse weather conditions delay spring planting of the grain crops.

U.S. cottonseed is produced in commercial quantities in 17 States in the Southeast or in the Southwest. Six States produced about 85 percent of U.S. cottonseed output in 1990; Texas accounted for about 34 percent of 1990 U.S. cottonseed output, followed by California (18 percent), Mississippi (12 percent), and Louisiana, Arkansas, and Arizona (7 percent each).

Sunflower seeds are grown in 5 States, but 90 percent of the production is grown in the Dakotas and Minnesota. North Dakota is the leading producing State, with a 68-percent share of 1990 U.S. sunflower seed production; South Dakota and Minnesota, with respective shares of 18 and 4 percent, accounted for most of the remaining production. Kansas and Texas were minor producers, with a 4- and 1-percent share of U.S. sunflower seed output, respectively.

Most of the other minor oilseeds are grown in the Northern States and in California. The Dakotas and Minnesota account for all U.S. production of flaxseed. North Dakota produced 82 percent of U.S. flaxseed in 1990; South Dakota, 12 percent; and Minnesota, the remaining 6 percent. Safflower seed, another minor oilseed, is grown in eight States, according to the U.S. Bureau of the Census, but three States—California, with 77 percent of U.S. safflower seed output in 1987; Montana, with 15 percent; and North Dakota, with 6 percent—accounted for all but a small fraction of U.S. safflower seed output. Four Northern States grew 92 percent of U.S. rapeseed or canola in 1987: North Dakota (41 percent of 1987 U.S. output), Idaho (26 percent), Washington (15 percent), and Montana (10 percent).

Employment

Data on employment in the U.S. oilseed industry are not available, since the farm labor used to produce oilseeds typically produces a variety of other field crops or livestock at the same time. A considerable amount of actual farm labor is "unpaid" farm labor of the farmer and family members. As indicated above, there were a reported 503,000 oilseed farms (generally each with at least one farmer) in 1987. In addition to their own labor, farmers also employ hired labor, either seasonally or permanently, to produce oilseeds. Hired labor is used relatively infrequently in sunflower seed and soybean production, for example, accounting in 1989 for less than 2 percent of total costs of producing soybeans, but is more important for cotton farming, for which hired labor costs in 1989 accounted for about 9 percent of total costs of production.[8]

Employment in the farming sector is seasonal. Soybeans, the principal oilseed, generally are planted

[4] U.S. Bureau of the Census, *1987 Census of Agriculture*, vol. 1, December 1989.

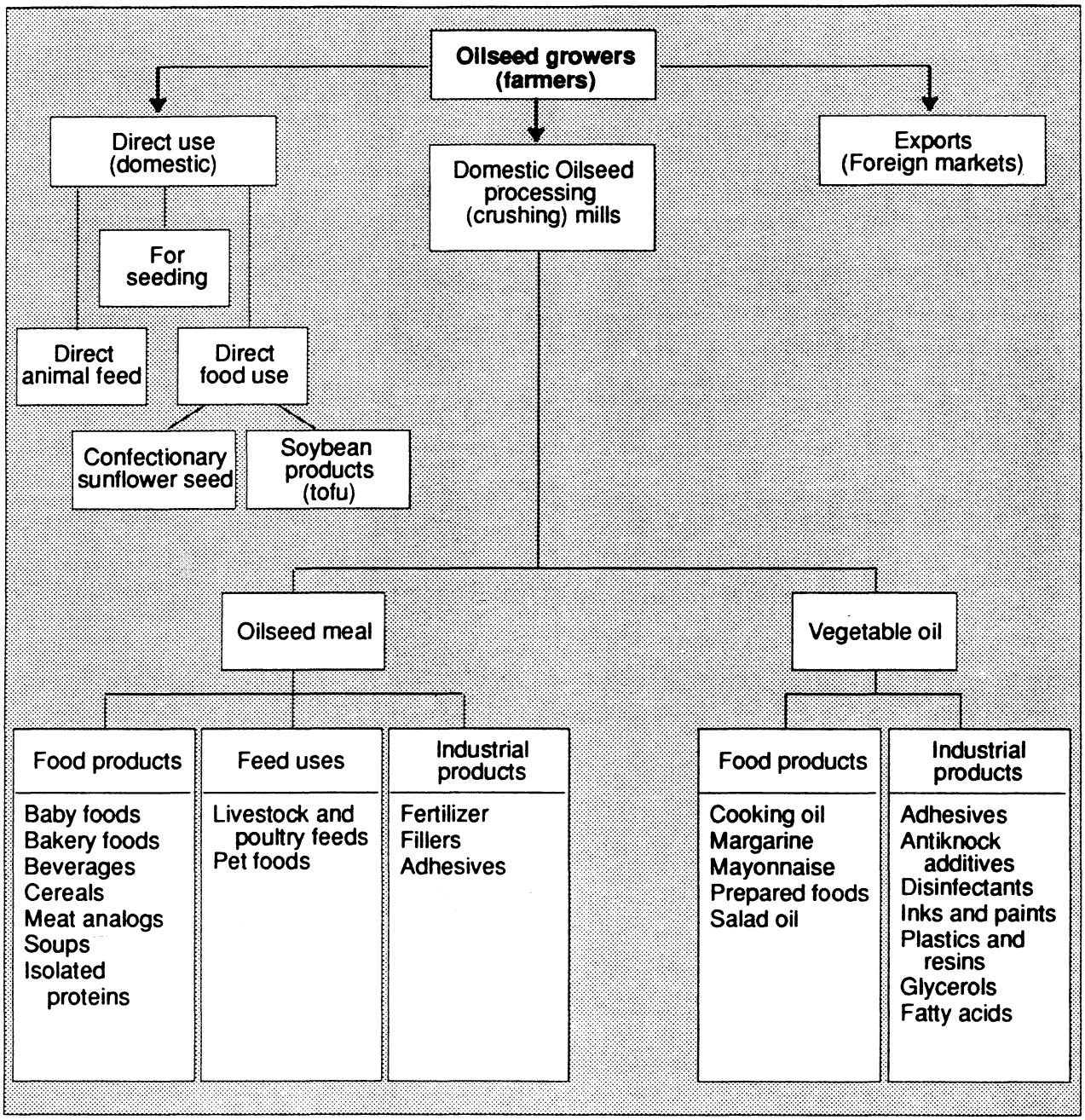
[5] Ibid., *table 51*.

[6] USDA, *Crop Production 1990 Summary*, Jan. 1991, p. A-39.

[7] See later discussion on soybean costs of production.

[8] USDA, *Costs of Producing—Major Field Crops, 1989*, Apr. 1991, pp. 61 and 71. See the section "Conditions of Competition Between Foreign and U.S. Oilseeds" in this summary report.

Figure 1
Oilseeds: Structure of the U.S. Industry



in May and June, cultivated during July and August, and harvested between September and mid-November.[9] Farmers typically rotate planting soybeans with a number of crops, such as corn, cotton, rice, or wheat, depending on local growing conditions; similar crop patterns occur with cottonseed and sunflower seed. In addition, soybean farmers typically have off-farm income (i.e., dividing their time between farm and industrial or service employment). Cottonseed, sunflower seed, safflower seed, and flaxseed follow slightly different crop patterns. In the case of "double cropping" (growing two usually different crops consecutively in the same field during a single growing season), planting schedules differ slightly.

Labor Intensity, Skill Levels, Level of Automation, and Productivity

Farm labor involves a multitude of mechanical, horticultural, and managerial skills. For most oilseed farmers, economic returns from growing oilseeds can be attributed to their own labor, managerial abilities, and returns on capital (such as machinery), and on land, as well as returns on risk taking. The growing of oilseed crops is a relatively land-intensive and capital-intensive activity that has become over the past several decades a highly mechanized operation in the United States.

Most oilseed farmers operate as sole proprietors, owning the land they farm. In recent years, about 84 percent of soybean farms were owner operated by sole proprietorships, 13 percent by partnerships, and 3 percent by corporations.[10] Most soybean farmers are full or part owners of the land they farm. In 1982, 36 percent fully owned their own farm land, 46 percent were part owners (renting some land and owning the remainder), and 18 percent were tenants renting the land from the owners.

In oilseed farming, a commonly accepted measure of productivity is the crop yield. In the United States, oilseed yields on a per-acre basis have generally increased during the past 40 years, largely because of better cultivating and harvesting practice and improved plant varieties. Soybean yields rose from 18 bushels per acre in 1953 to a record 34 bushels per acre in 1985;[11] this record was equaled in both 1987 and 1990 (table A-9). However, annual crop yields vary widely, since weather is a key factor in year-to-year changes. For example, below-average rainfall and high temperatures in key growing months reduced the soybean yield to 27 bushels per acre in 1988. Fewer than 4 percent of soybean farmers irrigate their crops, and thus crops are sensitive to variable rainfall.

[9] James Schaub, and others, *The U.S. Soybean Industry*, USDA, May 1988, p. 1.

[10] Ibid., p. 8.

[11] Ibid., p. 3.

Vertical and Horizontal Integration

Oilseed farmers, as indicated above, are numerous and decentralized, with the majority of farmers either full or part owners of a single farm. No single farmer controls a significant share of U.S. output. There is little direct foreign ownership of U.S. oilseed farms, and few U.S. oilseed farmers operate abroad. The U.S. Department of Agriculture has indicated in its annual report to Congress that foreigners owned in 1990 about 1 percent of all U.S. agricultural land.[12]

As a way to obtain higher prices and to more efficiently market their harvest, many soybean farmers have formed or joined cooperatives. Cooperatives provide various services for their members, including marketing crops to elevators and crushers. Cooperatives also own and operate oil-crushing mills. By acting as the sole agent for many farmers at once, cooperatives may be able to obtain greater bargaining leverage for farmers. Cooperatives play an important role in the marketing of soybeans and grain, accounting for slightly over one-third of all such farm-level marketing in the mid-1980s.[13]

Marketing and Pricing Practices

The important factors that characterize the marketing of soybeans and other oilseeds are first, the uniformity of the products themselves; second, the importance of export trade in providing markets; third, the dominance of export trade by a relatively small number of companies; and fourth, the importance of transportation in marketing this bulk product. The marketing channels used by oilseed farmers are shown in figure 2. Farmers can either market their crops to export markets or sell to U.S. oilseed (crushing) mills; however, in some cases, the exporter is also the local mill.

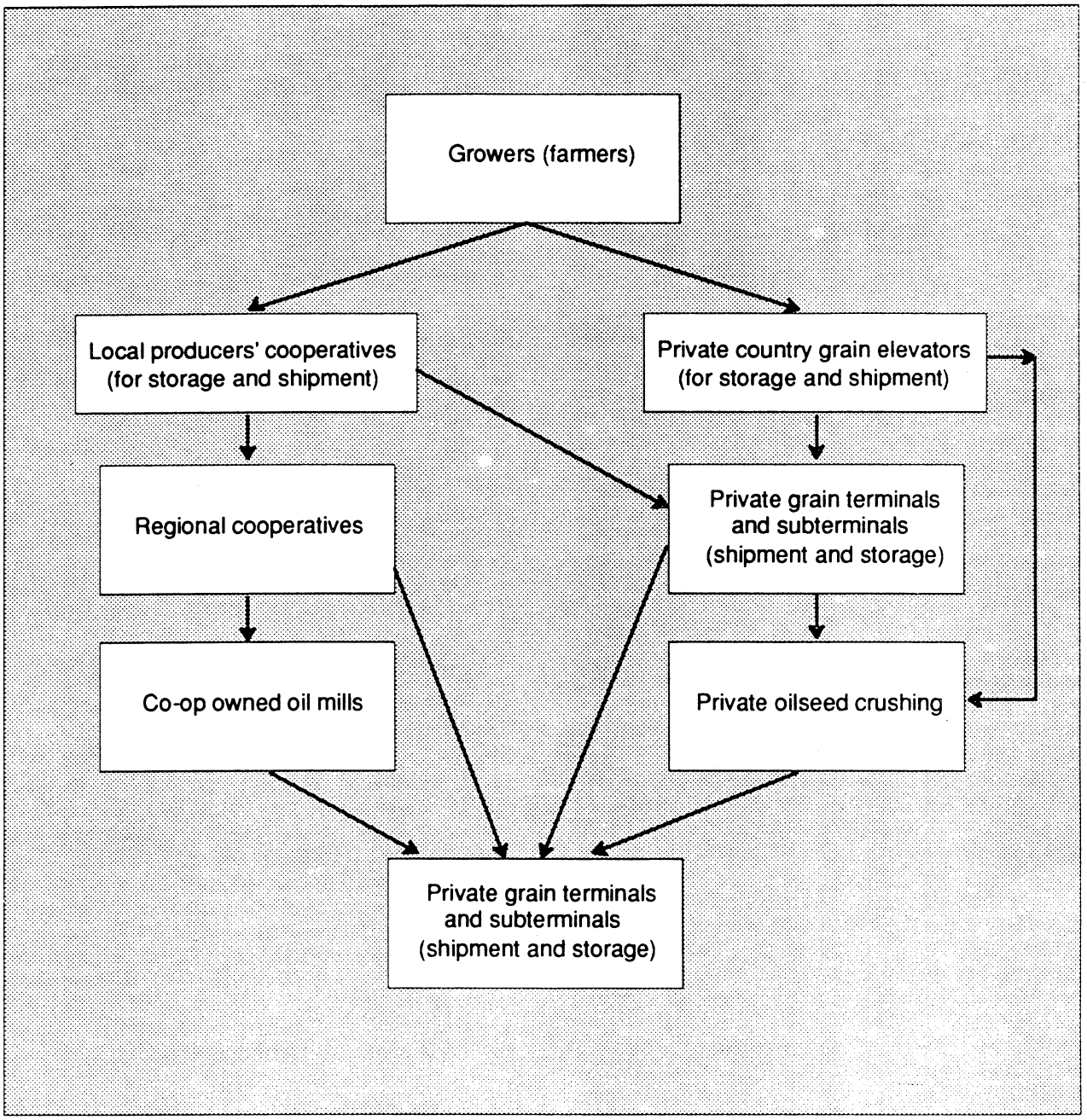
Soybeans are bulky and largely a homogeneous, fungible commodity for which price is often an overriding factor in the purchase decision.[14] The ability to plant a variety of crops simultaneously allows farmers to enter or exit soybean farming easily as year-to-year prices change. Further, although prices are determined at the local level in the United States between farmers and elevators or local processing (crushing) mills, in the competitive market across States or regions, prices will not differ for extended periods by more than the cost of transport to common market areas such as export terminals.

[12] Peter DeBraal, USDA, Economic Research Service, on Sept. 9, 1991, indicated that there was foreign ownership of 14 million acres out of 1.3 billion acres of U.S. agricultural land.

[13] USDA, Cooperative Management Service, Agricultural Cooperative Service, *Farmer Cooperative Statistics, 1985*, Washington, DC, ACS Report No. 17, Dec. 1986, pp. 9-10.

[14] This section is based in part on Mack N. Leath, "Pricing Strategies Used by Soybean Producers," Staff Paper No. 86E-343, Feb. 1986, University of Illinois at Urbana-Champaign, Department of Agricultural Economics.

Figure 2
Oilseeds: Principal marketing channels for U.S. crops



Local markets are heavily influenced by aggregate supply and demand at the national and international levels through the futures markets and Government price-support policies. Since a large share of domestic oilseeds is sold in international markets, local prices reflect world supply and demand. A bumper crop (or a shortfall) in a major competitor, such as Brazil, can have a significant impact on international prices and thus on the price received by U.S. farmers. When a farmer delivers the oilseed to the local elevator or mill, the price received is largely beyond the control of either party, buyer, or seller. Buyers and sellers may seek prices that bring a targeted return on investment or a predetermined gross margin or that simply move the harvest or keep the mill running, but in all cases, local prices cannot be sustained above or below a relatively small range surrounding national market prices.

Despite their lack of bargaining power, farmers do have price strategies available to them. Farmers can plan the selling of an oilseed crop preceding the planting of the crop, and continue selling until the harvested crop has all been sold, as late as the middle of the following year. This long planning period is required for farmers to take full advantage of the three basic price strategies open to them: a forward cash contract, in which quantity and price arrangements are made prior to delivery from the field or storage facility; a cash market under which a given quantity is sold for immediate delivery at the current market price; and a price-later contract, which provides for immediate delivery but at a price to be determined at a later date.

Prices set in the future may be based either on the cash-market or futures-market price quoted by the Chicago Board of Trade, depending on the particular arrangement. Most U.S. soybean farmers typically deliver slightly over half of their crop immediately after harvest to an off-farm location such as a grain elevator or a crusher and store the remaining crop on-farm for marketing during the following winter or spring.[15]

U.S. Government Programs

U.S. farm programs are extensive and complex. This section summarizes the key provisions of the support program and highlights those provisions that are believed to influence U.S. oilseed production significantly, namely the oilseed loan program and the planting flexibility provisions. Another U.S. Government program that affects U.S. exports of oilseeds is the U.S. Department of Agriculture's export credit guarantee program, summarized below.

U.S. oilseed farmers have the option of placing their oilseed as collateral for USDA loans, called nonrecourse loans, which can be redeemed by the farmer prior to maturity with funds from the market sale of the product. If market prices are below the loan repayment rate, the farmer may default on the loan obligation and forfeit the product, which becomes Government property, or repay the loan at the prevailing world market price.

The Food, Agriculture, Conservation, and Trade Act of 1990 modified the prior crop-support program for soybeans (which was then the only oilseed eligible for assistance) and established for oilseeds a new "marketing loan" repayment provision that was extended to include soybeans, sunflower seed, canola, rapeseed, safflower seed, flaxseed, mustard seed, and other oilseeds, as determined by the Secretary of Agriculture (the Secretary).[16] The act also allowed farmers who receive program support for nonoilseed crops, such as corn, wheat, or rice, for the first time to plant oilseeds crops in place of the nonoilseed crop under certain conditions ("the planting flexibility provisions").

The minimum loan rates are $5.02 per bushel under the support program for soybeans and no less than $0.089 per pound for the minor oilseeds for the 1991-95 marketing years. Loans made for an oilseed crop mature 9 months after the loan application is made. The act established that if the Secretary includes other oilseeds in the program, their loan rate "must be set at a fair and reasonable level to that for soybeans." If a marketing loan program is established for cottonseed, its level cannot be less than the level established for soybeans on a per-pound basis for the same crop year. The 1990 Budget Act amended the 1949 act to place a 2-percent loan origination fee on all oilseed loans.

Loans can be repaid at the lower of either (1) the loan rate determined for the crop or (2) the prevailing world market price (adjusted to U.S. quality and location), or a level (not to exceed the loan rate) that USDA determines will minimize forfeitures to the Commodity Credit Corporation (CCC), oilseed stock accumulation by the CCC, and the CCC's cost of storing oilseeds. The determined repayment level must allow oilseeds produced in the United States to be marketed freely and competitively in the United States and abroad.

On May 2, 1991, USDA established a formula to define the adjusted world market price for oilseeds (adjusted to U.S. quality and location) and a mechanism for periodically announcing this price.[17] Producers who are eligible to obtain a price-support loan for each of the 1991-95 crops but who choose to forgo it are eligible to receive loan deficiency payments. These payments equal the loan payment rate multiplied by the quantity of oilseeds the producer would otherwise have been eligible to place under loan. The loan payment rate equals the amount by which the loan level for the crop exceeds the level at which the loan may be repaid. Oilseeds are not eligible for any commodity reserve storage program.

[15] Leath, "Pricing Strategies."

[16] This section is derived from Susan Pollack, "Title VII—Oilseeds," *Provisions of the Food, Agriculture, Conservation, and Trade Act of 1990*, USDA, June 1991, p. 24.

[17] 56 F.R. 20101 (May 2. 1991).

The planting flexibility provisions in the act of 1990 allowed farmers who have enrolled a fixed acreage under one specific crop to change crops planted on that acreage in order to respond to market signals as price ratios vary between the various crops, such as oilseeds versus grain.[18] The act of 1990 authorized farmers to plant previously ineligible crops (including oilseeds) on up to 25 percent of their enrolled program acreage (the "base").[19]

Surveys of farmers' planting intentions for the 1991 crop year (the first crop following enactment of the act of 1990) indicated that farmers have used the flexibility provisions and increased their acreage planted in the minor oilseeds, as well as those planted in soybeans.[20]

The U.S. Department of Agriculture provides an export credit guarantee program for two principal types of credit used to finance the sale abroad of U.S. oilseeds, oilseed products, and other farm products: an Export Credit Guarantee Program (called "GSM-102") and the Intermediate Credit Guarantee Program (called "GSM-103").[21] Limited foreign exchange is often a constraint to developing-country imports, making credit an essential factor in the purchase decision. The credit guarantee program provides that in the case of a default on a commercial loan used to finance the purchase of U.S. farm products by a foreign purchaser, the USDA will repay the principal and nearly all of the interest owed to the financing bank. The GSM-102 program provides credit guarantees for commercial credit from 6 months to 3 years and the GSM-103 program for periods of 3 to 10 years. About 90 percent of the credit guarantees were for the shorter term GSM-102 program in fiscal year (FY) 1989. In FY 1989, the value of U.S. oilseed exports assisted by the USDA credit guarantee program was about $439 million, or about 10 percent of the total value of U.S. oilseed exports in that year. Most of the credit guarantees have been used to assist the exports of soybeans.

Research and Development Expenditures and High-Technology Processes

The Office of Technology Assessment (OTA) studied U.S. technological development in agriculture and the subsequent transfer of such technology abroad to competitors and concluded that technology transfer is indeed a factor in explaining changes in U.S. competitiveness in the 1980s in agriculture, including oilseeds.[22] Although the United States maintains a long-held technological advantage, the OTA reports said the increasing ease with which new technology is disseminated internationally is "closing the gap" between U.S. producers and their foreign rivals. There are several causes of technology transfer, including U.S. academic training of foreign students, the dissemination of research results in journals and other publications, the direct transfer by U.S. multinational firms to foreign subsidiaries, and differing national treatments of seed variety patent protection, which may affect technological development, according to the OTA.[23]

The transfer of soybean seed varieties from the United States to competitive oilseed exporters has been the primary agricultural production technology shift in the oilseed sector, according to a USDA study.[24] U.S. soybean varieties used in the South were suitable for the temperate areas of Brazil and Argentina and were planted in sizable amounts, thereby increasing soybean production in these countries. However, high-yielding U.S. soybean varieties are not suitable to the tropical regions of Third World countries, and thus there are limitations on further direct transfer of U.S. soybean seed varieties. Subsequently, Brazil has developed a soybean research organization with 300 full- and part-time scientists, but few other developing countries have the resources needed to develop such a research structure. The United States has about 350 scientists directly involved in soybean production research.[25]

Consumer Characteristics and Factors Affecting Demand

Characteristics of Consumers or Users

As indicated above, the principal use of oilseeds is to produce vegetable oil and its coproduct, oilseed meal. Smaller amounts of oilseeds are also used directly in food products, such as confectionery sunflower seed or sesame seed, after being roasted or cleaned. Oilseeds are used for planting and for direct feeding to livestock (see figure 1).

Oilseed processors, also known as "crushers" or "vegetable oil mills" are located mostly in the leading growing regions or, in some cases, adjacent to leading livestock producing areas with high demand for oilseed meal.[26] The U.S. Census of Manufactures indicated

[18] Ian McCormick, "Minor Oilseeds and the 1990 Farm Bill," *Oil Crops*, USDA, July 1991, pp. 16-23.

[19] The flexibility provisions of the act of 1990 are complex; see USDA, *Provisions of the Food, Agriculture, Conservation, and Trade Act of 1990* , June 1991, p. vii.

[20] Ian McCormick, "Minor Oilseeds and the 1990 Farm Bill," *Oil Crops*, USDA, July 1991, pp. 16-23.

[21] USDA, ERS, *Foreign Agricultural Trade of the United States*, Nov./Dec. 1990, pp. 8-10.

[22] U.S. Congress, OTA, *Technology, Public Policy, and the Changing Structure of American Agriculture*, OTA-F-285 (Washington, DC: GPO, Mar. 1986); and U.S. Congress, OTA, *A Review of U.S. Competitiveness in Agricultural Trade—A Technical Memorandum*, OTA-TM-TET-29 (Washington, DC: GPO, Oct. 1986).

[23] OTA, *A Review of U.S. Competitiveness in Agricultural Trade*, p. 52.

[24] Gary Vocke, "New Technology Shifts World Grain and Soybean Trade," *Agricultural Outlook*, USDA, 1989.

[25] Ibid.

[26] Oilseed crushers will be covered in a separate summary on the fats and oils industry and will be not be described in detail in this report.

that in 1987 in the United States there were 47 companies with 106 establishments classified as soybean oil mills; 20 companies with 52 establishments classified as cottonseed oil mills; and 20 companies with 23 establishments classified as miscellaneous vegetable oil mills.[27] Soybean oil mills located in the Corn Belt States produced the majority of shipments of soybean products, and all of the cottonseed oil mills were located in Arkansas, California, Mississippi, and Texas, the leading cotton-producing States.

Oilseeds tend to be a homogeneous commodity within their particular subgroup or for an established grade, and thus price is the principal factor influencing sale, although transportation costs (reflected in the price basis) are also important. Soybeans used for oilseed crushing are sold under several grades established by the USDA, such as grade Number 1 yellow, and grade Number 2 yellow. Food-grade oilseeds are generally sold under private contract terms and generally require much more stringent qualities with regard to cleanliness, specific colors, and other factors.

Factors Influencing the Demand for Oilseeds

The leading market for oilseeds, the crushing sector, produces two coproducts that are sold in separate and independent markets. Oilseed meal is used principally by the livestock industry. It is a feedstuff with a large number of grain or protein substitutes. Consumer demand for meat, poultry, and dairy products creates the demand for oilseed meal and for its grain or feed substitutes. The primary factors affecting consumer demand for meat and dairy products are the level of consumer incomes, population growth, retail prices, and changes in food preferences. Vegetable oil derived from oilseeds is sold mainly in the food fats and oils markets to be used to produce cooking oils, margarine, and baking fats. Consumer demand for fats and oils responds mainly to changes in population growth, changes in food preferences (related to demographic changes), and income growth.[28] Price changes have had relatively little effect in the United States on the total quantity demanded of vegetable oil.[29] U.S. per capita consumption of fats and oils and protein (meat) is among the highest in the world, so that U.S. demand for these products is relatively saturated and increasing very slowly.

For world or foreign demand, the leading factors affecting oilseed demand are virtually the same as those for domestic demand, with at least two added variables, namely foreign exchange effects and the relatively low per capita consumption levels of these products in most countries of the world.[30] The more dynamic markets for oilseed products tend to be the developing countries and non-market-economy countries, where very low per capita consumption levels occur and where population growth is higher than in the developed-country markets such as the EC or Japan.

Foreign Industry Profile

Major World Producers

In crop year 1990/91, the United States was the leading producer of oilseeds in the world, accounting for about 31 percent of the 187 million metric tons of the leading oilseeds, soybeans, cottonseed, sunflower seed, rapeseed, and flaxseed, grown throughout the world, according to the U.S. Department of Agriculture.[31] China produced about 15 percent of the world production of these leading oilseeds; Brazil, 9 percent; Argentina, 8 percent; the EC, 7 percent; the Soviet Union, 6 percent; India, 5 percent; Canada, 2 percent; and Pakistan, 2 percent. Together, these countries produced about 85 percent of world output of the leading oilseeds, other than peanuts.

World production of these leading oilseeds rose by 3 percent annually from 167 million metric tons in crop year 1986/87. The factors affecting world supply and the increased world production of oilseeds include increasing acreage and/or crop yields, prices, and government support programs. The area planted in these oilseeds rose from 115 million hectares to 125 million hectares during 1986/87 to 1990/91, and yields rose from 1.45 metric tons per hectare to 1.50 metric tons per hectare.

World Producers' Involvement in Export Markets and Competitiveness Factors

About 15 percent of the world production of major oilseeds enters the international export markets, although this share is higher if the equivalent weight of oilseed meal and vegetable oil were to be included. Five of the leading producers are net importers or negligible exporters—China, the EC, the Soviet Union, India, and Pakistan. Most oilseed-producing countries

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[27] U.S. Bureau of the Census, *1987 Census of Manufactures: Industry Series, Fats and Oils*, Dec. 1989, p. 20G-6.

[28] Brian Gould, T.L. Cox, and F. Perali, "Demand for Food Fats and Oils," *American Journal of Agricultural Economics*, Feb. 1991, pp. 212-221.

[29] Gould, Cox, and Perali, found the price elasticity of U.S. demand for vegetable oil products generally below -0.50.

[30] See Cecil Davison and others, "Box-Cox Estimation of U.S. Soybean Exports," *American Journal of Agricultural Economics*, summer 1990, vol. 41, No. 3., p. 8; and Margot Anderson, *U.S. Soybean Trade and Exchange Rate Volatility*, USDA, Oct. 1988.

[31] USDA, Foreign Agricultural Service (FAS), *World Oilseed Situation and Outlook*, July 1991, p. 31. Peanuts are excluded from coverage as an "oilseed" in this summary but are to be included as an "edible nut" in a separate summary report covering those products. World production of peanuts totaled 22 million metric tons in 1990/91, with the U.S. share at 1.6 million metric tons, and with India and China producing about 7.3 million and 6.4 million metric tons, respectively. About 53 percent of the world production and 20 percent of U.S. production of peanuts was crushed for vegetable oil.

tend to process or consume the majority of the oilseeds produced within their economies, and many of the large producing countries are also large consuming countries.

World trade in oilseeds must thus be evaluated along with that in oilseed meal and vegetable oil; a number of producing countries have government policies that encourage the domestic processing of the oilseed and the export of the higher valued meal and oil to world markets. Exports of oilseeds from the United States compete not only with exports of foreign oilseeds, but also with exports of oilseed meal or of vegetable oil from other leading oilseed growers.

In a 1987 report on U.S. global competitiveness of oilseeds and products, the U.S. International Trade Commission identified several key competitive factors for oilseed trade and production: price, transportation and infrastructure (marketing) costs, government intervention, and foreign exchange rates.[32] Price is a key factor in both domestic and world trade of oilseeds and grain among the different competitive factors. Price ratio affect the cross-substitution among oilseeds, between oilseeds and their byproducts, and between oilseed meal and grain substitutes. The U.S. oilseed industry benefits from excellent crop yields and soil productivity, efficient transportation systems, and sophisticated marketing systems. Both the U.S. Government and foreign government policies directly affect oilseed market competition, particularly the EC Common Agricultural Policy. Changes in foreign exchange rates have also affected oilseed trade.

U.S. TRADE MEASURES

Table A-1 shows the column 1 rates of duty, as of January 1, 1991, for the articles included in this summary (including both general and special pre-Uruguay Round rates of duty) and U.S. exports and imports for 1990. (Statistical tables are in appendix A. An explanation of tariff and trade agreement terms is shown in appendix B.) The aggregate trade-weighted average rate of duty for all products covered in this summary, based on 1990 imports, was 1.1 percent ad valorem equivalent; the average trade-weighted rate of duty for the dutiable products was 2.0 percent ad valorem equivalent. About 55 percent of the imports included here, mostly sesame seed and soybeans, are duty free.

There are few nontariff measures (NTMs) or health and sanitary regulations that affect trade in oilseeds. The leading exception is the restriction on entry of cottonseed into the United States from Mexico because of the presence of the pink bollworm. This quarantine is maintained by the U.S. Department of Agriculture. However, since there is little trade in cottonseed because of other factors, the quarantine has had little effect.

There have been no statutory investigations filed concerning U.S. imports of oilseeds over the past decade.

FOREIGN TRADE MEASURES

Tariff Measures

The EC, Japan, Taiwan, Mexico, and Canada are by far the leading foreign markets for U.S. oilseeds, together purchasing over 80 percent of U.S. exports in 1990. The remaining foreign markets include a large number of developing countries, Eastern Europe, and the Soviet Union. The duty on soybeans imported into the EC was bound duty-free under GATT to the United States (see following discussion on the 301 trade case); all of the other leading oilseeds imported into the EC are also free of duty. Japan similarly imposes no duties on its imports of leading oilseeds. Mexico imposed average duties on imports of oilseeds of about 5 percent ad valorem in 1990; Mexico also imposes a seasonal tariff on soybean imports that in 1990 amounted to 10 percent.[33] Canada imposes no import duties on oilseeds.

Nontariff Measures

A number of countries impose nontariff measures on oilseeds, although the most important NTMs affecting world oilseed trade are those used in the EC as part of its Common Agricultural Policy (CAP), which formed the basis for a section 301 trade complaint case against the EC.[34] On December 16, 1987, the American Soybean Association filed a petition with the United States Trade Representative (USTR) seeking relief under section 301 of the Trade Act of 1974 against certain alleged unfair practices of the European Community (EC) that discriminate against the importation of soybeans and soybean meal from the United States. The association indicated that these EC trade practices nullified and impaired the zero tariff binding on soybean imports into the EC, a concession granted to the United States under the General Agreement on Tariffs and Trade (GATT). The association asserted, among other things, that the EC requires processors in the EC to pay minimum prices to EC farmers for soybeans, rapeseed, and sunflower seed in excess of world market prices, that it grants processing subsidies to EC oilseed processors, and as a result the EC reduced its demand for imported U.S. oilseeds.[35]

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[32] U.S. International Trade Commission, *U.S. Global Competitiveness: Oilseeds and Oilseed Products* (investigation No. 332-240), USITC publication 2045, Dec. 1987, pp. xix-xxi.

[33] USDA, FAS, "Soybean Seasonal Import Tariff Increase," FAS telegram, from Mexico City, Aug. 2, 1991.

[34] American Soybean Association, *Petition Seeking Relief Under Sec. 301 of the Trade Act of 1974, as Amended*, Dec. 16, 1987; and USITC, *U.S. Global Competitiveness: Oilseeds and Oilseed Products*, USITC publication , ch. 4.

[35] ASA, *Petition Seeking Relief Under Sec. 301 of the Trade Act of 1974, as Amended*, Dec. 16, 1987, pp. 2-4.

The USTR initiated an investigation and requested consultation with the EC in January 1988.[36] The United States consulted with the EC to no avail several times under GATT article XXIII and requested a GATT panel to resolve the dispute.[37] In December 1989, a GATT panel ruled in favor of the U.S. complaint that the EC oilseed subsidy regime was inconsistent with GATT since EC subsidies given to its processors discriminated against foreign suppliers of oilseeds, and on January 25, 1990, the panel report was adopted by the GATT Council of Representatives.[38] The GATT panel report indicated that EC payments to its oilseed processors for their purchases of EC oilseeds was inconsistent with article II:4 of the GATT and that benefits accruing to the United States under article II of the GATT in respect of the zero tariff bindings for oilseeds were impaired as a result of the EC subsidy scheme, according to USTR.

The EC agreed to accept the panel findings and to submit a reform proposal to its EC Council.[39] To date, the EC Council has not agreed to any specific changes in its oilseed support policies; however, in August 1991, the Council formally proposed a complex plan that would, among other things, take EC subsidies provided directly to oilseed crushers and processors and give them instead to oilseed producers (farmers).[40] The amount of subsidy a oilseed farmer would receive would then be based on the size of the farm acreage. As of this date, this proposal has not been approved by the EC Council nor accepted by the United States to resolve the GATT panel findings.

The CAP provides EC farmers with a variety of benefits, such as minimum prices on the leading oilseeds grown in the EC—sunflower seed, rapeseed, flaxseed, and soybeans. The major price-support tool for EC oilseeds is a subsidy paid to EC crushers or first purchasers of EC-grown oilseeds, and part of this subsidy is passed on to EC oilseed farmers through the higher EC market prices, according to USDA.[41] Because the EC tariff on soybeans was bound duty free under GATT, the EC has used these direct subsidies to first purchasers and to its oilseed processors in lieu of tariffs to favor its own producers over foreign suppliers of oilseeds, chiefly U.S. soybean exporters.

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[36] USTR case No. 301-63, 53 F.R. 984.

[37] Donna Vogt, *Addressing Unfair Trade: Agricultural Cases Under Sec. 301 of the Trade Act of 1974*, Congressional Research Service, Sept. 11, 1989, p. CR-33.

[38] USTR, *Semiannual Report to Congress on Section 301 Investigations*, Aug. 1991, p. 21.

[39] USDA, FAS, "European Community Oilseed Update," *World Oilseed Situation and Market Highlights*, Jan. 1990, pp. 41-42.

[40] Bruce Barnard, "EC Changes Oilseed Subsidies to Comply With GATT Ruling," *Journal of Commerce*, Aug. 1, 1991, p. 9; and "EC Adopts MacSharry Plan for Oilseeds," *The Public Ledger*, Aug. 1, 1991, p. 1.

[41] Timothy Rocke and Rodney Paschal, "EC 12 Oilseed Production Outlook," *World Agricultural Production*, Sept. 1990, p. 56.

U.S. MARKET

Consumption

Trends and Import-Penetration Levels

Apparent U.S. consumption of oilseeds rose by an average of 12 percent annually, from $5.4 billion to $8.4 billion during 1986-90 (table A-2 and figure 3). The import-penetration level averaged 1.6 percent annually over the 5-year period; a significant share of the imported oilseeds are not produced in the United States, particularly sesame and poppy seed.

On a volume basis, U.S. consumption of the leading oilseed, soybeans, remained virtually unchanged at about 1.3 billion bushels annually during crop years 1986/87 to 1990/91 (table A-3). Domestic processors (crushers) accounted for 92 percent of the domestic consumption of soybeans, crushing soybeans into soybean oil and soybean meal.

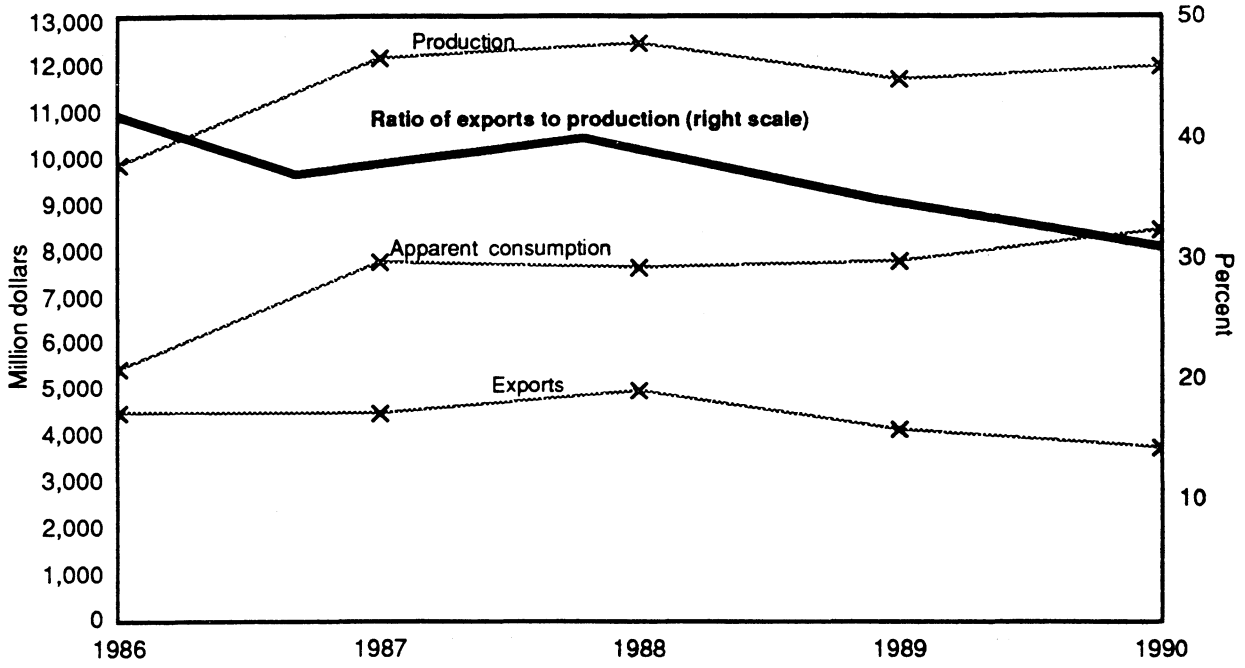
The consumption trends of the other leading oilseeds, sunflower seed, cottonseed, and flaxseed, varied, with consumption of sunflower seed and flaxseed dropping and that of cottonseed rising. During 1986/87 to 1990/91, U.S. consumption of sunflower seed remained flat at about 900,000 short tons annually; about two-thirds of the consumption was for crushing to produce sunflower seed oil, and the remainder went largely into confectionery (edible nut) use (table A-4). Domestic consumption of flaxseed fell by about one-quarter during 1986/87 to 1990/91; with a sharp decline in U.S. flaxseed production, the import-penetration ratio for flaxseed rose from 21 to 78 percent during this period (table A-5).

Cottonseed consumption, unlike that of the other leading oilseeds, increased during the 5-year period, rising irregularly from 3.9 million short tons in 1986/87 to about 5.8 million short tons in 1990/91 (table A-6). Favorable prices for cotton fiber (lint) induced higher U.S. plantings of cotton and indirectly boosted U.S. cottonseed output and consumption. About two-thirds of domestic consumption of cottonseed was by domestic oilseed crushers, and the remainder largely was consumed by livestock. Low prices of cottonseed oil increased the attractiveness of feeding cottonseed to cattle rather than crushing it into oil.

Conditions of Competition Between Foreign and U.S. Oilseeds

The key competitive factors in oilseed trade and production, namely price, transportation and infrastructure costs, government intervention, and foreign exchange rates, have generally not favored U.S. oilseed exporters, which have lost world market share since the early 1980s. U.S. oilseed farmers in the key producing area, the Corn Belt, have generally better crop yields (a reflection of rainfall patterns), and lower costs of production than producers in other U.S.

Figure 3
Oilseeds: U.S. production, exports, and apparent consumption, 1986-90



Source: Compiled from official statistics of the U.S. Departments of Agriculture and Commerce.

regions that have been more negatively affected by foreign competition and less able to retain export sales.[42] U.S. sunflower seed farmers have also been adversely affected by lower world prices, and they reduced their output accordingly. Cottonseed farmers, who sell little seed directly in foreign markets, have benefited from the excellent world market for cotton fiber.

Brazil and Argentina have generally had lower total costs of production for soybeans than have U.S. soybean growers. As a result, Brazil and Argentina have generally increased their production of soybeans since the late 1970s, whereas that of the United States has generally fallen. In 1986 for example, U.S. soybean farmers in the Corn Belt, the lowest cost U.S. producing area, had total production and marketing costs of $6.77 per bushel of soybeans, compared with $6.21 per bushel in Brazil, and $5.04 per bushel in Argentina (table A-7). There was a slight U.S. advantage in yield per acre—33.7 bushels of soybeans over Brazil's 26.7 bushels per acre and Argentina's 31.2 bushels per acre. A 1989 USDA study found that for crop years 1986/87 and 1987/88 the cash costs of soybean production (excluding fixed land costs) in the U.S. Corn Belt ($3.02 per bushel) were lower than Brazil's $5.03 per bushel but slightly above Argentina's $2.60 per bushel.[43]

Compared with its chief rivals, Brazil and Argentina, the United States has a more efficient transportation and marketing network, which translates into lower freight costs for shipping soybeans to the leading foreign market, the EC. For example, in 1986, the freight cost of shipping U.S. soybeans to Rotterdam was $12.62 per metric ton, compared with $16.50 for Brazil and $18.50 for Argentina.[44] In Brazil, limited internal transportation capacity has restricted the ability of farmers to expand production in remote soybean areas in the western part of the country.

Production

The value of U.S. production of oilseeds increased by an average 5 percent annually, from $9.8 billion to

[42] See Paul Trapido and R. Krajewski, "Soybean Costs of Production in Argentina, Brazil, and the United States: A Regional Farm Budget Analysis," *World Agriculture Situation and Outlook*, Mar. 1989.

[43] Paul Trapido and R. Krajewski, Ibid.

[44] USITC, *U.S. Global Competitiveness: Oilseeds and Oilseed Products* (investigation No. 332-240), USITC publication 2045, Dec. 1987, p. xx.

$11.9 billion, during 1986-90 (table A-8). U.S. production of oilseeds averaged about 58 million metric tons annually during 1986-90, excluding 1988, when drought sharply reduced crop yields. U.S. production fluctuated, largely because of weather-induced changes to crop yields; the U.S.-harvested acreage in oilseeds changed little during this period, averaging about 70 million acres annually (table A-9).

There were some changes in production levels during 1986-90 for individual oilseeds, however. The harvested acreage in soybeans fell during this period as soybean prices remained unfavorable and generally flat, while the harvested acreage in cotton grew as the more favorable markets for cotton fiber benefited cottonseed production. Harvested acreage in sunflower seed generally remained unchanged, whereas flaxseed acreage fell to only a third of its 1986 level (table A-9).

Prices received by U.S. farmers for oilseeds during this period reached a peak in 1988, a drought year, and thereafter declined. Prices of oilseed crops are generally inversely related to crop yields and production levels so that the highest prices are generally recorded in years of drought in major growing areas.

Costs of production for the average U.S. soybean farmer generally rose during this period while prices remained stable, resulting in generally lower economic returns to growers. The U.S. Department of Agriculture reported that total cash costs of producing an acre of soybeans in the United States rose from $94 to $108 per acre during 1987-89; total costs of production (which include land charges and returns to unpaid labor) rose from $169 to $198 per acre (tables A-10 and A-11). On a per-bushel basis, in 1989, total costs of producing soybeans in the United States amounted to about $6.06 per bushel, which exceeded the harvest-period price of $5.55 and caused a loss for soybean farmers.

Imports

The value of U.S. imports of oilseeds in 1986-90 is shown in table A-12. About 36 percent of the imports in 1990 consisted of flaxseed; 32 percent consisted of sesame seed; 13 percent, rapeseed; and the remaining 19 percent, largely sunflower seed and soybeans.

During 1986-90, U.S. imports of oilseeds increased from $50 million to $179 million, a more than twofold increase. The volume of total imports rose from about 144,000 metric tons to about 456,000 metric tons, also a more than twofold increase. Most of the increase reflected sharply higher imports of flaxseed, rapeseed, and sesame seed.

Imports of rapeseed (canola) rose from less than $0.5 million in 1986 to over $23 million in 1990. Since 1985, when the Food and Drug Administration authorized the use of canola oil in food products in the United States, the domestic demand for canola and canola oil has grown dramatically. Most of this increased demand for canola has been met by imports, since little is currently produced in the United States. Imports of flaxseed also rose sharply as domestic production of flaxseed fell by over two-thirds during this period. Sesame seed imports rose by $32 million, to about $57 million in 1990.

The majority of U.S. oilseed imports enter duty free, with dutiable imports paying an average tariff of 2 percent ad valorem. About 55 percent of U.S. oilseed imports enter under HTS subheadings that are duty free; in addition, about 2 percent of the imports are free of duty under the Generalized System of Preferences. Duty-free imports under the Caribbean Basin Economic Recovery Act and the U.S.-Israel Free Trade Area Implementation Act of 1985 are negligible. About 39 percent of the imports entered at reduced rates of duty in 1990 under the United States-Canada Free Trade Agreement.

Canada has been the leading foreign supplier of oilseeds to the United States, with a 55-percent share of U.S. imports in 1990. Canadian exports of oilseeds to the United States have been chiefly flaxseed and rapeseed (canola), of which Canada is one of the world's leading producers. Mexico, India, and Guatemala are the leading suppliers of sesame seeds to the U.S. market, together accounting for 31 percent of 1990 U.S. imports of oilseeds (table A-12). Poland entered the U.S. oilseed market in 1990 with sales of $11 million in rapeseed (canola). Canada accounted for 60 percent of the $129 million increase in U.S. imports of oilseeds during 1986-90, taking advantage of the sharply increased U.S. demand for canola and diminished U.S. production of flaxseed. Implementation of the U.S.-Canada Free Trade Agreement also may have played a role in encouraging Canadian trade.

Since the imported oilseeds are chiefly raw agricultural products that need considerable processing or are inputs used to produce other consumer goods, the importers tend to be large oilseed crushers or food processors. Domestic oilseed crushers tend to purchase rapeseed (canola) and flaxseed as raw materials to derive the respective vegetable oils. Sesame seed is imported raw, and then roasted or otherwise processed before reaching bakeries or other food processors.

Foreign Markets

Foreign Market Profile

In most years, only about 15 percent of world production of oilseeds enters international commerce as such, with the majority being consumed or crushed within the producing country. Total world imports of the major oilseeds (except peanuts) declined by about 12 percent from the 1986/87 level, to 32 million metric tons in 1990/91, according to USDA.[45] The EC, Japan,

[45] USDA, FAS, *World Oilseed Situation and Outlook*, July 1991.

the Soviet Union, Taiwan, and Mexico purchased about 87 percent of world imports of oilseeds in 1990/91, according to data of the USDA. About three-quarters of world imports of oilseeds consisted of soybeans; about one-eighth, of rapeseed; and all of the remaining oilseeds together (including sunflower seed) constituted less than one-eighth of world imports.

In 1990/91, the EC imported about 17 million metric tons, and thus alone accounted for 53 percent of the total world market for oilseeds. Japan, the second-leading world market for oilseeds, imported 5 million metric tons in 1990/91, or about 16 percent of the world total. The Soviet Union imported about 2.5 million metric tons of oilseeds (chiefly in the form of soybeans) in 1990/91, accounting for 8 percent of world market sales. Taiwan and Mexico followed in importance, accounting for, respectively, 6 and 4 percent of the world market in 1990/91.

The share of the world soybean import market supplied by the United States declined from 86 percent in 1981/82 to 59 percent in 1990/91. Several factors contributed to this decline in U.S. trade performance:

- the effects of rising exports of Brazilian and Argentine soybeans, soybean meal, and soybean oil;
- the appreciation of the dollar in foreign exchange markets;
- the foreign debt and exchange problems of many developing and Eastern European countries;
- slow world economic growth; and
- the effects of the EC internal support policies that diminished the EC demand for U.S. soybeans.

U.S. exporters lost sales in the developed countries' markets, and, for a variety of reasons, have been unable to increase sales in developing countries, which have low per capita consumption levels of vegetable oil and animal products (requiring soybean meal in animal feed), and thus presumably have unmet demand.

U.S. Exports

Most U.S. exports of oilseeds consisted of soybeans, with very minor amounts of sunflower seed. This export product composition followed the pattern of domestic production wherein soybeans were the dominant product. In 1990, soybeans accounted for 96 percent of the $3.7 billion in U.S. exports, and sunflower seed for about 3 percent of the total.

During 1986-90, U.S. exports of oilseeds fell irregularly by 17 percent, from $4.5 billion to $3.7 billion (table A-13). Sales of soybeans fell from $4.3 billion to $3.5 billion (table A-14). On a volume basis, the decline in U.S. export sales is larger: soybean exports fell by 28 percent, from 21 million metric tons in 1986 to 15 million metric tons in 1990.

For the domestic soybean industry, exports were equivalent to one-third of domestic output during 1986-90 (table A-3). When the export sales of soybean oil and soybean meal are included, the share of soybean or soybean-derived products being sold abroad approaches 40 percent of domestic output of soybeans. However, since reaching a peak in the early 1980s, the share of domestic soybean output being sold abroad has fallen from 47 percent in 1981/82 to 28 percent in 1990/91.

Domestic sunflower seed growers are equally dependent on exports, and their export sales decline is also large. During 1986/87 to 1990/91, the share of sunflower seeds being sold abroad fell from 29 percent of domestic output to 10 percent (table A-4). Export sales of sunflower seed oil were equivalent to about 60 percent of domestic output during this same period. U.S. exports of sunflower seeds have fallen as a result of direct competition with sunflower seeds grown in the EC, which sharply reduced its purchases.

The principal destinations for U.S. oilseed exports have been the EC member countries, Japan, Taiwan, Mexico, and South Korea, which together purchased over 85 percent of U.S. oilseed exports during 1986-90. U.S. exports of soybeans went mostly to these countries.

Most of the U.S. exporters of oilseeds have been the large grain-trading and oilseed-processing companies, which operate multinationally. A 1976 USDA study determined that the six largest grain exporters accounted for 90 percent of total exports in the early 1970s;[46] later studies found a smaller share by the top-four exporters in U.S. grain/oilseed trade, ranging between 40 and 65 percent, depending on the year and the product group.[47]

Data supplied to the Commission by the USDA on the storage capacity and ownership of U.S. export grain elevators in 1986 indicated that the eight largest owners of such elevators controlled 64 percent of the 400 million bushels of grain and oilseed storage capacity then in existence. Farm cooperatives held an additional 10 percent, and others, including the U.S. Government, held the remaining 26 percent.[48]

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[46] Farmer Cooperative Service, USDA, *Improving the Export Capability of Grain Cooperatives*, June 1976.

[47] Bruce Wright and Kenneth Krause, "Foreign Investment in the U.S. Grain Trade," in *Foreign Direct Investment in the United States*, U.S. Department of Commerce, Washington, DC, 1976. Richard Caves and Thomas Pugel, "New Evidence on Competition in the Grain Trade," *Food Research Institute Studies*, vol. 18, No. 3, 1982. For an analysis of the roles played in U.S. grain and oilseed exports by Japanese-owned trading firms and by farm cooperatives, see U.S. General Accounting Office, *Market Structure and Pricing Efficiency of the U.S. Grain Export System*, 1982; and Neilson Conklin and Reynold Dahl, "Organization and Pricing Efficiency of the U.S. Grain Export System," *Minnesota Agricultural Economist*, No. 635, May 1982, p. 3.

[48] USITC, *U.S. Global Competitiveness Oilseeds and Products*, USITC publication 2045, pp. 3-21.

U.S. Trade Balance

During 1986-90, the U.S. trade surplus in oilseeds declined by nearly $1 billion, from about $4.4 billion to $3.5 billion (table A-15). The U.S. share of world oilseed markets declined during this period while the world market shares of the EC, Brazil, Argentina, and Malaysia (a producer of palm oil) increased. However, the world market for oilseeds was buffeted by adverse economic conditions in many key developing-country markets and by reduced EC imports, and the total world market actually declined during this period as world imports declined by 12 percent.

The nearly $0.5 billion decline in the U.S. trade surplus with the EC was responsible for about one-half of the worsening U.S. trade surplus in the oilseed sector

APPENDIX A
STATISTICAL TABLES

Table A-1
Oilseeds: Harmonized Tariff Schedule subheading; description; U.S. col. 1 rate of duty as of Jan. 1, 1991; U.S. exports, 1990; and U.S. imports, 1990

HTS subheading	*Brief description*	*Col. 1 rate of duty as of Jan. 1, 1991*		*U.S. exports 1990*	*U.S. imports 1990*
		General	*Special*[1]		
				Thousand dollars	
1201.00.00	Soybeans, whether or not broken	Free	([2])	3,595,225	15,360
1203.00.00	Copra	Free	([2])	49	153
1204.00.00	Flaxseed (linseed), whether or not broken	0.86¢/kg	Free (E,IL) 0.6¢/kg (CA)	2,701	63,886
1205.00.00	Rape or colza seeds, whether or not broken	0.9¢/kg	Free (E, IL) 0.6¢/kg (CA)	3,689	23,727
1206.00.00	Sunflower seeds, whether or not broken	Free	([2])	68,608	7,904
1207.10.00	Palm nuts and kernels, whether or not broken	Free	([2])	310	67
1207.20.00	Cotton seeds, whether or not broken	0.73¢/kg	Free (CA, E, IL)	12,796	213
1207.30.00	Castor beans, whether or not broken	Free	([2])	20	12
1207.40.00	Sesame seeds, whether or not broken	Free	([2])	2,524	58,869
1207.60.00	Safflower seeds, whether or not broken	Free	([2])	16,074	157
1207.91.00G	Poppy seeds, whether or not broken	0.13¢/kg	Free (A, CA, E, IL)	101	2,953
1207.92.00	Shea nuts (karite nuts), whether or not broken	Free	([2])	0	0
1207.99.00	Oil seeds and oleaginous fruits nesi, whether or not broken	Free	([2])	2,135	7,364
1212.30.00	Apricot, peach, or plum stones and kernels	3.3¢/kg	Free (E, IL) 2.3¢/kg (CA)	379	540

[1] Programs under which special tariff treatment may be provided, and the corresponding symbols for such programs as they are indicated in the "Special" subcolumn, are as follows: Generalized System of Preferences (A); Automotive Products Trade Act (B); Agreement of Trade in Civil Aircraft (C); United States-Canada Free-Trade Agreement (CA); Caribbean Basin Economic Recovery Act (E); and United States-Israel Free Trade Area Implementation Act (IL).
[2] Not applicable since the column 1 rate of duty is free.

Source: U.S. exports and imports compiled from data of the U.S. Department of Commerce.

Table A-2
Oilseeds: U.S. production, exports of domestic merchandise, imports for consumption, and apparent U.S. consumption, 1986-90

Year	U.S. production[1]	U.S. exports	U.S. imports	Apparent U.S. consumption	Ratio of exports to production
	Million dollars				Percent
1986	9,817	4,458	50	5,409	45
1987	12,114	4,443	45	7,716	37
1988	12,437	4,928	84	7,593	40
1989	11,654	4,088	162	7,728	35
1990	11,936	3,705	179	8,410	31

[1] Crop year production, beginning in the year shown.
Source: Production compiled form official statistics of the U.S. Department fo Agriculture; imports and exports compiled from official statistics of the U.S. Department of Commerce.

Table A-3
Soybeans: U.S. production, imports, exports, beginning stocks, and apparent consumption, crop years 1986/87 to 1990/91

Year beginning Sept. 1—	Production	Imports	Exports	Beginning stocks	Apparent consumption	Ratio of exports to production	Season average price received by farmers
	Quantity (million bushels)					Percent	Per bushel
1986/87	1,943	(1)	757	536	1,285	39	$4.78
1987/88	1,938	(1)	802	436	1,271	41	5.88
1988/89	1,549	(1)	527	302	1,146	34	7.42
1989/90	1,924	(1)	623	182	1,247	32	5.70
1990/91[2]	1,922	(1)	540	239	1,263	28	5.70

[1] Less than 500,000 bushels.
[2] Forecast, Apr. 1991.
Source: Compiled from official statistics of the U.S. Department of Agriculture.

Table A-4
Sunflower seed: U.S. beginning stocks, production, exports of domestic merchandise, imports for consumption, apparent consumption, and season average price, 1986/87 to 1990/91

Year beginning Sept. 1—	Beginning stocks	Production	Exports	Imports	Apparent consumption	Ratio of exports to production	Season average price received by farmers
	1,000 short tons					Percent	Per ton
1986/87	212	1,214	304	8	877	29	$152
1987/88	253	1,183	270	10	979	23	184
1988/89	197	813	87	25	869	11	267
1989/90	79	798	96	20	776	12	234
1990/91[1]	25	1,032	100	28	920	10	238

[1] Forecast, Apr. 1991.
Note.—Apparent consumption is calculated as the sum of production, imports, and beginning stocks for the period, less the sum of exports and beginning stocks of the following period.
Source: Compiled from official statistics of the U.S. Department of Agriculture.

Table A-5
Flaxseed: U.S. beginning stocks, production, exports of domestic merchandise, imports for consumption, apparent consumption and season average U.S. price, received by farmers, crop years 1986/87 to 1990/91

Year beginning Sept. 1—	Beginning stocks	Production	Exports	Imports	Apparent consumption	Ratio of imports to consumption	Season average price received by farmers
	1,000 short tons					Percent	Per bushel
1986/87	1,629	11,538	1,448	2,229	10,647	21	$3.47
1987/88	3,301	7,444	156	2,913	11,177	26	3.39
1988/89	2,325	1,615	750	6,732	8,615	78	7.56
1989/90	1,307	1,355	950	6,726	8,194	82	7.24
1990/91[1]	244	3,300	750	6,408	8,202	78	7.10

[1] Forecast, July 1990.
Note.—Apparent consumption is calculated as the sum of production, imports, and beginning stocks for the period, less the sum of exports and beginning stocks of the following period.
Source: Compiled from official statistics of the U.S. Department of Agriculture.

Table A-6
Cottonseed: U.S. beginning stocks, production, exports of domestic merchandise, imports for consumption, apparent consumption, and season average price received by U.S. farmers, crop years 1986/87 to 1990/91

Year beginning Aug. 1—	Beginning stocks	Production	Exports	Imports	Apparent consumption	Season average price received by U.S. farmers
	1,000 short tons					Per short ton
1986/87	347	3,801	17	(1)	3,944	$80.00
1987/88	189	5,769	50	(1)	5,551	82.50
1988/89	359	6,022	39	(1)	5,721	118.00
1989/90	665	4,677	46	(1)	4,930	105.00
1990/91[2]	366	6,084	60	(1)	5,792	117.00

[1] Less than 500 tons.
[2] Forecast, Apr. 1991.
Note.—Apparent consumption is calculated as the sum of production, imports, and beginning stocks for the period, less the sum of exports and beginning stocks of the following period.
Source: Compiled from official statistics of the U.S. Department of Agriculture.

Table A–7
Soybean production: Comparison of costs in selected countries, 1986

Costs	United States		Brazil		Argentina
	Overall	Corn Belt[1]	Double-crop with wheat	Soybeans alone	
Production costs:					
Variable costs (dollars per metric ton):					
Seed	12.87	11.30	14.57	14.57	16.31
Fertilizer and lime	13.04	8.33	50.90	55.04	(2)
Chemicals	24.53	20.04	14.82	14.82	9.43
Custom operations	5.08	3.56	(2)	(2)	27.67
Fuel and lube	16.26	12.98	20.76	20.85	13.26
Repairs	10.22	8.22	6.55	6.58	10.44
Hired labor	1.93	1.62	(2)	(2)	(2)
Miscellaneous	.37	.29	5.89	6.09	(2)
Interest on variable expenses	4.06	3.01	3.86	4.01	2.69
Total variable costs	88.36	69.35	117.35	121.96	79.80
Fixed costs (dollars per metric ton):					
General farm overhead	14.61	14.93	2.59	2.59	(2)
Taxes and insurance	15.96	18.08	3.27	4.67	13.82
Capital replacement	33.07	30.15	13.43	13.49	10.96
Labor	16.68	13.79	6.45	6.48	13.87
Interest on nonland capital	11.51	10.59	6.46	6.48	8.10
Land charge	[3]62.95	[3]67.06	35.25	42.74	22.35
Total fixed costs	154.78	154.60	67.45	76.45	69.10
Total production costs	243.14	223.95	184.80	198.41	148.90
Marketing costs	24.60	24.60	43.50	43.50	36.14
Grand total costs	267.74	248.55	228.30	241.91	185.04
Yield per acre (number of bushels)	28.95	33.70	26.78	26.78	31.24
Production cost (dollars per bushel)	6.62	6.10	5.03	5.40	4.05
Marketing cost (dollars per bushel)	.67	.67	1.18	1.18	.99
Total cost (dollars per bushel)	7.29	6.77	6.21	6.58	5.04

[1] Includes Great Lakes States.
[2] Not available.
[3] Data are for 1985.

Table A-8
Oilseeds: U.S. production of the leading products, by type, 1986-90

Crop year beginning	Soybeans	Cottonseed	Sunflowerse	Flaxseed	Total
			Quantity		
	Million bushels	*1,000 short tons*	*1,000 metric tons*	*1,000 bushels*	*1,000 metric tons*
1986	1,943	3,801	1,214	11,538	57,700
1987	1,938	5,769	1,183	7,444	59,190
1988	1,549	6,062	813	1,615	48,512
1989	1,924	4,677	798	1,355	57,420
1990[1]	1,922	6,084	1,032	3,300	58,850
			Value (million dollars)		
1986	9,288	304	185	40	9,817
1987	11,395	476	218	25	12,114
1988	11,493	715	217	12	12,437
1989	10,966	491	187	10	11,654
1990[1]	10,955	712	246	23	11,936
			Price received by farmers		
	Per bushel	*Per short ton*	*Per metric ton*	*Per bushel*	
1986	$4.78	$80.00	$152	$3.47	- - -
1987	5.88	82.50	184	3.39	- - -
1988	7.42	118.00	267	7.56	- - -
1989	5.70	105.00	234	7.24	- - -
1990[1]	5.70	117.00	238	7.10	- - -

[1] Forecast, Apr. 1991.
Note.—Crop harvested beginning in September of the year shown.
Source: Compiled from official statistics of the U.S. Department of Agriculture.

Table A-9
Oilseeds: Harvested acreage, and yield of leading U.S. crops, crop years 1986-90

Type	1986	1987	1988	1989	1990
			Harvested acreage (1,000 acres)		
Soybeans	58,312	57,172	57,373	59,538	56,502
Cotton seed	8,468	10,030	11,948	9,538	11,708
Sunflower seed	1,955	1,775	1,921	1,786	1,851
Flaxseed	683	463	226	163	253
Total	69,418	69,440	71,468	71,025	70,314
			Yield (per acre)		
Soybeans (bushels)	33.3	33.9	27.0	32.3	34.0
Cotton seed (pounds)	552	706	619	614	[1]640
Sunflower seed (pounds)	1,369	1,469	933	985	1,229
Flaxseed (bushels)	16.9	16.1	7.1	7.5	15.1

[1] Indicated on Jan. 1991.
Note.—Because of rounding, figures may not add to the totals shown.
Source: U.S. Department of Agriculture, *Crop Production 1990 Summary*, Jan. 1991.

Table A-10
Soybeans: U.S. production cash costs and returns, harvest price, and yield, 1987-89

Item	1987	1988	1989
		Dollars per planted acre	
Gross value of production	171.66	201.49	180.88
Cash expenses:			
Seed	11.16	12.01	14.86
Fertilizer	5.00	6.31	6.59
Lime and gypsum	.29	.30	.31
Chemicals	12.04	12.24	12.85
Custom operations	4.00	4.00	4.27
Fuel, lube, and electricity	8.97	9.12	9.83
Repairs	6.63	7.30	7.80
Hired labor	2.62	2.80	2.87
Technical services	.05	.05	.05
Subtotal, variable cash expenses	50.76	54.13	59.43
General farm overhead	10.81	12.44	14.64
Taxes and insurance	13.94	14.39	14.39
Interest on operating loans	6.48	5.94	6.97
Interest on real estate	12.54	13.26	13.07
Subtotal, fixed cash expenses	43.77	46.03	49.07
Grand total, cash expenses	94.53	100.16	108.50
Gross value of production less cash expenses	77.13	101.33	72.38
		Dollars per bushel	
Harvest-period price	5.07	7.53	5.55
		Bushels per planted acre	
Yield	33.83	26.76	32.61

Source: USDA, *Costs of Production—Major Field Crops, 1989,* Apr. 1991, p. 61.

Table A-11
Soybeans: U.S. production total economic costs and returns, harvest price, and yield, 1987-89

Item	1987	1988	1989
		Dollars per planted acre	
Gross value of production	171.66	201.49	180.88
Economic (full-ownership) costs:			
Variable cash expenses	50.76	54.13	59.43
General farm overhead	10.81	12.44	14.64
Taxes and insurance	13.94	14.39	14.39
Capital replacement	31.84	34.13	38.52
Operating capital	1.24	1.51	1.92
Other nonland capita	5.05	6.36	7.67
Land	45.56	52.22	50.30
Unpaid labor	9.86	10.54	10.81
Total, economic (full-ownership) costs	169.06	185.72	197.68
Residual returns to management and risk	2.60	15.77	(16.80)
		Dollars per bushel	
Harvest-period price	5.07	7.53	5.55
		Bushels per planted acre	
Yield	33.83	26.76	32.61

Note.—Parentheses indicate a negative (loss) net return.
Source: USDA, *Costs of Production—Major Field Crops, 1989,* Apr. 1991, p. 61.

Table A-12
Oilseeds: U.S. imports for consumption, by principal sources, 1986-90

Source	*1986*	*1987*	*1988*	*1989*	*1990*
			1,000 dollars		
Canada	(1)	(1)	(1)	104,824	97,998
Mexico	(1)	(1)	(1)	26,750	34,858
India	(1)	(1)	(1)	4,048	11,461
Poland	(1)	(1)	(1)	0	11,263
Guatemala	(1)	(1)	(1)	4,470	8,680
All other	(1)	(1)	(1)	21,473	14,944
Total	50,008	45,071	83,928	161,565	179,204

[1] Data for individual countries are not available prior to 1989.
Source: Compiled from official statistics of the U.S. Department of Commerce.

Table A-13
Oilseeds: U.S. exports of domestic merchandise, by principal markets, 1986-90

Market	*1986*	*1987*	*1988*	*1989*	*1990*
			1,000 dollars		
Japan	(1)	(1)	(1)	881	837
The Netherlands	(1)	(1)	(1)	650	523
Taiwan	(1)	(1)	(1)	448	413
Spain	(1)	(1)	(1)	359	309
Mexico	(1)	(1)	(1)	322	222
Germany	(1)	(1)	(1)	197	216
South Korea	(1)	(1)	(1)	220	194
Belgium	(1)	(1)	(1)	157	104
United Kingdom	(1)	(1)	(1)	74	94
Israel	(1)	(1)	(1)	76	84
All other	(1)	(1)	(1)	703	708
Total	4,458	4,443	4,928	4,088	3,705

[1] Data for individual countries are not available prior to 1989.
Note.—Because of rounding, figures may not add to the totals shown.
Source: Compiled from official statistics of the U.S. Department of Commerce.

Table A-14
Soybeans, except seed for sowing: U.S. exports of domestic merchandise, by principal markets, 1986-90

Market	*1986*	*1987*	*1988*	*1989*	*1990*
			Quantity (1,000 metric tons)		
European Community (EC-12)	(1)	(1)	(1)	6,384	6,373
Japan	(1)	(1)	(1)	3,285	3,460
Taiwan	(1)	(1)	(1)	1,683	1,716
Mexico	(1)	(1)	(1)	974	830
South Korea	(1)	(1)	(1)	828	826
Israel	(1)	(1)	(1)	284	366
All other	3,456	3,062	2,450	1,623	1,776
Total	21,346	21,256	17,851	15,061	15,347
			Value (million dollars)		
European Community (EC-12)	(1)	(1)	(1)	1,627	1,433
Japan	(1)	(1)	(1)	866	818
Taiwan	(1)	(1)	(1)	447	411
Mexico	(1)	(1)	(1)	271	200
South Korea	(1)	(1)	(1)	220	194
Israel	(1)	(1)	(1)	76	84
All other	(1)	(1)	(1)	437	408
Total	4,316	4,307	4,790	3,944	3,548

[1] Data for individual countries are not available prior to 1989.
Note.—Data for the EC-12 do not include trade data for East Germany.
Source: Compiled from official statistics of the U.S. Department of Commerce.

Table A-15
Oilseeds: U.S. exports of domestic merchandise, imports for consumption, and merchandise trade balance, by selected countries and country groups, 1986-90[1]

Item	1986	1987	1988	1989	1990
			(Million dollars)		
U.S. exports of domestic merchandise:					
Japan	(2)	(2)	(2)	881	837
The Netherlands	(2)	(2)	(2)	650	523
Taiwan	(2)	(2)	(2)	448	413
Spain	(2)	(2)	(2)	359	309
Mexico	(2)	(2)	(2)	322	222
Germany	(2)	(2)	(2)	197	216
South Korea	(2)	(2)	(2)	220	194
Canada	(2)	(2)	(2)	52	84
Belgium	(2)	(2)	(2)	157	104
United Kingdom	(2)	(2)	(2)	74	94
All other	(2)	(2)	(2)	728	708
Total	4,458	4,443	4,928	4,088	3,705
EC-12	(2)	(2)	(2)	1,679	1,518
U.S. imports for consumption:					
Japan	(2)	(2)	(2)	0	0
The Netherlands	(2)	(2)	(2)	2	2
Taiwan	(2)	(2)	(2)	0	0
Spain	(2)	(2)	(2)	1	0
Mexico	(2)	(2)	(2)	27	35
Germany	(2)	(2)	(2)	0	0
South Korea	(2)	(2)	(2)	0	0
Canada	(2)	(2)	(2)	105	98
Belgium	(2)	(2)	(2)	0	0
United Kingdom	(2)	(2)	(2)	0	0
All other	(2)	(2)	(2)	27	44
Total	50	45	84	162	179
EC-12	(2)	(2)	(2)	3	2
U.S. merchandise trade balance:					
Japan	(2)	(2)	(2)	881	837
The Netherlands	(2)	(2)	(2)	648	521
Taiwan	(2)	(2)	(2)	448	413
Spain	(2)	(2)	(2)	358	309
Mexico	(2)	(2)	(2)	295	187
Germany	(2)	(2)	(2)	197	216
South Korea	(2)	(2)	(2)	220	194
Canada	(2)	(2)	(2)	-53	-14
Belgium	(2)	(2)	(2)	157	104
United Kingdom	(2)	(2)	(2)	74	94
All other	(2)	(2)	(2)	701	664
Total	4,408	4,398	4,844	3,926	3,526
EC-12	(2)	(2)	(2)	1,676	1,516

[1] Import values are based on customs value; export values are based on f.a.s. value, U.S. port of export.
[2] Data for individual countries are not available prior to 1989.
Source: Compiled from official statistics of the U.S. Department of Commerce.

APPENDIX B
EXPLANATION OF TARIFF AND TRADE AGREEMENT TERMS

TARIFF AND TRADE AGREEMENT TERMS

The ***Harmonized Tariff Schedule of the United States*** (HTS) replaced the *Tariff Schedules of the United States* (TSUS) effective January 1, 1989. Chapters 1 through 97 are based on the internationally adopted Harmonized Commodity Description and Coding System through the 6-digit level of product description, with additional U.S. product subdivisions at the 8-digit level. Chapters 98 and 99 contain special U.S. classification provisions and temporary rate provisions, respectively.

Rates of duty in the ***general*** subcolumn of HTS column 1 are most-favored-nation (MFN) rates; for the most part, they represent the final concession rate from the Tokyo Round of Multilateral Trade Negotiations. Column 1-general duty rates are applicable to imported goods from all countries except those enumerated in general note 3(b) to the HTS, whose products are dutied at the rates set forth in ***column 2***. Goods from the People's Republic of China, Czechoslovakia, Hungary, Poland, and Yugoslavia are among those eligible for MFN treatment. Among articles dutiable at column 1-general rates, particular products of enumerated countries may be eligible for reduced rates of duty or for duty-free entry under one or more preferential tariff programs. Such tariff treatment is set forth in the ***special*** subcolumn of HTS column 1.

The ***Generalized System of Preferences*** (GSP) affords nonreciprocal tariff preferences to developing countries to aid their economic development and to diversify and expand their production and exports. The U.S. GSP, enacted in title V of the Trade Act of 1974 and renewed in the Trade and Tariff Act of 1984, applies to merchandise imported on or after January 1, 1976, and before July 4, 1993. Indicated by the symbol "A" or "A*" in the special subcolumn of column 1, the GSP provides duty-free entry to eligible articles the product of and imported directly from designated beneficiary developing countries, as set forth in general note 3(c)(ii) to the HTS.

The ***Caribbean Basin Economic Recovery Act*** (CBERA) affords nonreciprocal tariff preferences to developing countries in the Caribbean Basin area to aid their economic development and to diversify and expand their production and exports. The CBERA, enacted in title II of Public Law 98-67, implemented by Presidential Proclamation 5133 of November 30, 1983, and amended by the Customs and Trade Act of 1990, applies to merchandise entered, or withdrawn from warehouse for consumption, on or after January 1, 1984; this tariff preference program has no expiration date. Indicated by the symbol "E" or "E*" in the special subcolumn of column 1, the CBERA provides duty-free entry to eligible articles the product of and imported directly from designated countries, as set forth in general note 3(c)(v) to the HTS.

Preferential rates of duty in the special subcolumn of column 1 followed by the symbol "IL" are applicable to products of Israel under the ***United States-Israel Free-Trade Area Implementation Act*** of 1985, as provided in general note 3(c)(vi) of the HTS. When no rate of duty is provided for products of Israel in the special subcolumn for a particular provision, the rate of duty in the general subcolumn of column 1 applies.

Preferential rates of duty in the special duty rates subcolumn of column 1 followed by the symbol "CA" are applicable to eligible goods originating in the territory of Canada under the ***United States-Canada Free-Trade Agreement***, as provided in general note 3(c)(vii) to the HTS.

Other special tariff treatment applies to particular ***products of insular possessions*** (general note 3(a)(iv)), goods covered by the ***Automotive Products Trade Act*** (general note 3(c)(iii)) and the ***Agreement on Trade in Civil Aircraft*** (general note 3(c)(iv)), and ***articles imported from freely associated states*** (general note 3(c)(viii)).

The ***General Agreement on Tariffs and Trade*** (GATT) (61 Stat. (pt. 5) A58; 8 UST (pt. 2) 1786) is the multilateral agreement setting forth basic principles governing international trade among its more than 90 signatories. The GATT's main obligations relate to most-favored-nation treatment, the maintenance of scheduled concession rates of duty, and national (nondiscriminatory) treatment for imported products. The GATT also provides the legal framework for customs valuation standards, "escape clause" (emergency) actions, antidumping and countervailing duties, and other

measures. Results of GATT-sponsored multilateral tariff negotiations are set forth by way of separate schedules of concessions for each participating contracting party, with the U.S. schedule designated as schedule XX.

Officially known as "The Arrangement Regarding International Trade in Textiles," the ***Multifiber Arrangement*** (MFA) provides a framework for the negotiation of bilateral agreements between importing and producing countries, or for unilateral action by importing countries in the absence of an agreement. These bilateral agreements establish quantitative limits on imports of textiles and apparel, of cotton and other vegetable fibers, wool, manmade fibers, and silk blends, in order to prevent market disruption in the importing countries—restrictions that would otherwise be a departure from GATT provisions. The United States has bilateral agreements with more than 30 supplying countries, including the four largest suppliers: China, Hong Kong, the Republic of Korea, and Taiwan.