

COMPETITIVE CONDITIONS IN THE U.S. TUNA INDUSTRY

**Report to the President on
Investigation No. 332-224
Under Section 332 of the
Tariff Act of 1930,
As amended**

USITC PUBLICATION 1912

OCTOBER 1986



UNITED STATES INTERNATIONAL TRADE COMMISSION

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PREFACE

The Commission instituted the present investigation on January 30, 1986, following the receipt of a request therefor on November 27, 1985, at the direction of the President, from Ambassador Clayton Yeutter, the United States Trade Representative (USTR). The investigation was conducted under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)) for the purpose of gathering and presenting information on the competitive and economic factors affecting the performance of the U.S. tuna industry. 1/ Specifically, the Commission was asked to provide information in the following areas:

- o The U.S. industry—profile the U.S. tuna harvesting and canning industry;
- o Foreign industries—profile the tuna harvesting and canning industries in Thailand, Taiwan, the Philippines, Japan, and Mexico
- o The U.S. market—describe the U.S. market for frozen and canned tuna and discuss levels and trends in U.S. consumption, trade, and prices for domestic and foreign tuna;
- o Market trade barriers—discuss barriers to U.S. tuna exports to Thailand, Taiwan, the Philippines, Japan, Mexico, and other relevant countries;
- o Conditions of competition in the U.S. market—analyze the major competitive factors affecting domestic and foreign tuna suppliers in the U.S. market, including price, quality, resource availability, marketing, transportation, Government involvement, exchange rates, and the probable impact of terminating the embargo on U.S. imports of Mexican tuna products.

As requested by the USTR, a primary purpose of this investigation is to update data the Commission gathered in its 1984 section 201 investigation, a report on which (USITC publication No. 1558) was released in August 1984. Therefore, this investigation largely follows the coverage of the 1984 investigation, and this report provides not only the newly gathered data but, in many cases, the corresponding data published in the 1984 report.

Public notice of the investigation was given by posting copies of the notice at the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the Federal Register of February 3, 1986 (51 F.R. 5267). 2/

The information presented in this report was obtained from fieldwork, questionnaires, private individuals and organizations, international agencies, Federal Government sources in the United States and foreign countries, and other sources.

1/ The request from the USTR is reproduced in appendix A.

2/ A copy of the notice of the Commission's investigation is reproduced in appendix B.

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EXECUTIVE SUMMARY

The tuna industry in the United States is continuing to change in response to the unprecedented surge in world production and trade in frozen and canned tuna products that was evident in 1984 at the time of the Commission's section 201 investigation of industry complaints of injury from increasing imports. The tuna industry—harvesters and processors alike—is oriented toward the domestic market, the largest market for canned tuna and the second largest for all tuna products. Prices for frozen as well as canned tuna products in the U.S. market have continued the decline begun in the early 1980's as the domestic industry has become increasingly involved in a market characterized by generally rising levels of world tuna harvests and an increasing sophistication in foreign tuna processing and marketing. The increasing world supplies and trade have clearly had some detrimental and some beneficial affects on the U.S. tuna industry.

The principal effects on the industry of the growing world production and trade in frozen tuna include (1) reduced world prices for frozen tuna, thereby reducing the prices received by U.S. harvesters and the prices paid by U.S. processors for raw material; and (2) increased foreign production (and export to the U.S. market) of canned tuna, reducing world (and U.S.) prices for canned tuna as well as frozen tuna. On the supply side, the increasing size of foreign fleets of harvesting vessels has adversely affected U.S. harvesters since such fleets compete with U.S. harvesters for the world's tuna resources.

In recent years, rising world supplies of, and falling prices for, frozen tuna have been associated with increased world production and trade in canned tuna. This has affected the U.S. tuna industry in opposing ways. Domestic processors and distributors have experienced reduced wholesale and retail prices for canned tuna in the major market segments supplied by domestic firms and have not been able to benefit fully from the reduced operating costs resulting from falling prices for frozen tuna. On the other hand, some of the major processors are also significant importers of canned tuna, marketing imports as well as their domestic product. Such imports occur for a number of reasons: they supplement occasionally insufficient domestic production, and they are in product forms that for cost reasons are not economical to produce domestically.

Of particular concern in this investigation is the possible impact on the U.S. industry of the recent termination of an embargo on U.S. imports of tuna products from Mexico. This embargo was instituted in 1980 in response to a seizure by Mexico of a U.S. tuna harvesting vessel, and was lifted on August 13, 1986. The possible effects of entry by Mexico into the U.S. tuna market is of concern to U.S. industry members as well as other foreign producers currently exporting to the U.S. market. An analysis of this action and its possible effects is provided in this report and is summarized in the following pages.

A large part of the U.S. tuna industry, defined by the Commission in the 1984 section 201 investigation as including both harvesting and processing operations, is vertically integrated from the harvest of wild tuna populations through the wholesale distribution of a variety of canned tuna products. There are also nonintegrated firms engaged in either harvesting or processing. In addition, the industry is highly concentrated in processing, and domestic processors account for a significant portion of U.S. imports of canned tuna as well as U.S. demand for frozen tuna.

Frozen tuna includes any of several species of tuna harvested and frozen for delivery to processors for production of canned tuna. Canned tuna is a popular food product consumed throughout the United States and other markets. The principal findings of the investigation are outlined below. Table A presents an industry and market profile for 1979-85.

1. Profile of the U.S. Tuna Industry.

- o The U.S. tuna industry consists principally of 6 large tuna-processing companies and about 100 harvesting vessels; firms operating in both sectors are large-scale and use modern technology.

The U.S. tuna industry as herein defined includes principally those vessels and processing facilities engaged in operations relating to the canned tuna market (including frozen tuna used as raw material for the canned product). Other tuna operations, such as those involved in production and marketing of fresh tuna in coastal communities, are not covered by this investigation.

The processing sector of the U.S. tuna industry is horizontally concentrated and consists of six firms. The three largest processing firms accounted for 81 percent of domestic shipments of canned tuna in 1985. Together, these six firms operate eight large, modern processing plants. Of these eight plants, seven are located off the mainland United States in locations such as Puerto Rico (five plants) and American Samoa (two plants); the eighth is located in California. U.S. tuna processing is capital intensive, with direct labor costs accounting for only 5 percent of total operating costs. The plants are supplied with frozen tuna, their raw material, by a combination of company-owned vessels, independent domestic vessels, and imports.

The harvesting sector of the U.S. tuna industry is composed of 90 large tuna purse seiners and about 9 smaller baitboats, all concentrating their harvesting effort in the Pacific Ocean. Their product, tuna that is frozen on board before delivery to port, is harvested from wild tuna resources located throughout the tropical Pacific Ocean, with concentrations along the Pacific coasts of Central and South America and the island nations of the western tropical Pacific. Virtually the entire harvest has historically been marketed to U.S. tuna processors, although in 1984-85 significant quantities of frozen tuna were exported to processors in Asia (pp. 1-56).

Table A.—Profile of the U.S. tuna industry and market, 1979-85

Item	1979	1980	1981	1982	1983	1984	1985	Absolute change, 1985 from 1979	Percentage change, 1985 from 1979
Frozen tuna:									
Apparent consumption:									
Quantity.....million pounds..	1,189.7	1,218.8	1,195.5	1,001.0	1,064.3	1,048.1	936.5	-253.2	-21.3
Value.....million dollars..	1/	1/	1/	1/	1/	1/	1/	1/	-
Landings:									
Quantity.....million pounds..	508.2	500.0	489.9	439.4	586.0	582.9	516.1	7.9	1.6
Value.....million dollars..	215.2	289.3	285.6	237.0	278.6	270.5	211.7	-3.5	-1.6
Imports:									
Quantity.....million pounds..	637.5	596.0	605.8	487.0	439.9	404.2	405.5	-232.0	-36.4
Value.....million dollars..	272.1	346.7	393.1	305.9	205.7	215.9	216.1	-56.0	-20.6
Imports to consumption ratio (quantity) percent..	53.6	48.9	50.7	48.7	41.3	38.6	43.3	-10.3	-19.2
Exports:									
Quantity.....million pounds..	11.8	4.5	2.8	8.6	1.2	65.0	71.0	59.2	501.7
Value.....million dollars..	1/	1/	1/	1/	1/	1/	1/	1/	-
Exports to landings ratio (quantity) percent..	2.3	0.9	0.6	1.9	0.2	11.2	13.8	11.5	500.0
Capacity utilization.....do....	67	63	65	52	67	66	66	-1.0	-1.5
Net sales 2/.....million dollars..	215.2	289.3	285.6	237.0	278.6	270.5	211.7	-3.5	-1.6
As a percent of net sales:									
Net income before taxes.....percent..	(14.0)	(1.9)	(15.5)	(33.7)	(21.9)	(4.0)	(25.7)	-11.7	-83.6
Canned tuna:									
Apparent consumption:									
Quantity.....million pounds..	704.0	685.2	683.2	702.8	766.9	775.4	794.1	90.1	12.8
Value.....million dollars..	1,079.6	1,234.9	1,310.6	1,257.7	1,200.9	1,086.9	1,061.9	-17.7	-1.6
Domestic production:									
Quantity.....million pounds..	617.5	639.9	649.0	568.7	625.6	628.4	569.0	48.5	7.9
Value.....million dollars..	963.2	1,171.0	1,272.1	1,057.7	1,032.2	942.6	836.4	-126.8	-13.2
Imports:									
Quantity.....million pounds..	53.7	63.6	70.9	87.6	122.3	162.3	213.9	160.2	298.3
Value.....million dollars..	65.1	97.3	110.4	113.3	137.3	167.3	209.1	144.0	221.2
Imports to consumption ratio (value) percent..	6.0	7.9	8.4	9.0	11.4	15.4	19.7	13.7	220.3
Exports.....do.....	1/	1/	1/	1/	1/	1/	1/	1/	-
Capacity utilization.....do....	70	66	66	58	72	82	84	14	20.0
Employment.....do....	14,668	14,906	14,581	13,436	13,397	13,499	12,887	-1,781	-12.1
As a share of net sales:									
Gross profit.....percent..	13.3	16.7	14.7	10.4	12.2	16.2	16.9	3.6	27.1
Net income before taxes.....percent..	2.5	5.2	1.5	(5.5)	(4.7)	(0.4)	5.6	3.1	124.0

1/ Not available.

2/ Includes domestic sales only.

Source: Compiled from official statistics of the U.S. Department of Commerce and from responses to questionnaires of the U.S. International Trade Commission.

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- o The principal products produced by U.S. tuna processors are (in declining order of importance) canned lightmeat tuna packed in water and in oil, and canned whitemeat tuna packed in water and in oil.

The greater abundance of tropical tuna (used for canned lightmeat tuna) relative to albacore (whitemeat) tuna to U.S. and foreign harvesters has caused canned lightmeat tuna to account for an average of 79 percent by quantity of all U.S. shipments of canned tuna during 1979-85. U.S. shipments of lightmeat in oil, which supplied substantially all U.S. consumption of such product, accounted for 38 percent of total lightmeat shipments in 1985, while lightmeat in water accounted for 62 percent. Canned albacore in water accounted for 78 percent of U.S. shipments of canned albacore in 1985 (pp. 31-35).

- o Productive capacity in both harvesting and processing in the U.S. tuna industry has been decreasing in recent years.

The number of U.S.-flag purse seiners declined from 124 at the end of 1979 to 90 at the end of 1985, and the fleet-wide hold capacity declined from 114,000 short tons to 97,000 short tons during the same period. Between 1979 and 1985, the number of baitboats declined from 28 vessels to 9 vessels, while the hold capacity of the baitboat fleet declined from 143 short tons to 67 short tons. The number of trollers that spend at least part of their effort in the tuna fishery declined from approximately 660 vessels in 1980 to 108 in 1985. The number of U.S. tuna-processing plants decreased from 22 in 1979 to 8 in 1985, while industry-wide capacity to process frozen tuna declined from 889 million pounds in 1979 to 676 million pounds in 1985 (pp. 20-21, 33-34).

- o U.S. tuna harvestors have suffered significant losses in the face of declining prices for frozen tuna and rising operating costs for the fleet.

In no year during the 1979-85 period under investigation did the average U.S. tuna purse seiner earn a positive return on net sales of frozen tuna. The best year during this period was 1980, a year of high prices for frozen tuna, in which the average vessel suffered a 2-percent loss (before taxes) on net sales. The worst year was 1982, in which a 34-percent loss on net sales was incurred. In 1985, the average return was -26 percent of net sales (pp. 25-28).

- o U.S. tuna processors have fared better in recent years, recovering from the low profitability of the 1982-83 period.

Following a decline in sales of canned tuna during a period of rapidly rising wholesale and retail prices and a rise in the cost of frozen tuna, the net income before income taxes of U.S. tuna processors fell to a low of -5.5 percent of net sales in 1982 and -4.7 percent in 1983, the worst performance of the firms during the 1979-85 period. The firms have since

recovered, helped by declines in the cost of frozen tuna and the disposal of inefficient fixed assets, which helped boost net income before income taxes to 5.6 percent of net sales in 1985, the peak year during 1979-85 (pp. 48-56).

- o Employment in U.S. tuna processing declined by 12 percent while total wages paid declined by 8 percent during 1979-85.

The reduction in tuna processing capacity in the U.S. tuna industry during 1979-85 forced a reduction in employment of production workers from 14,668 workers in 1979 to 12,887 workers in 1985. The decline in tuna-processing employment, particularly in mainland U.S. locations, caused the total wages paid to production workers in U.S. tuna processing to decline from \$111 million in 1979 to \$102 million in 1985 (pp. 39-41).

- o The availability of domestically produced frozen tuna to U.S. processors is heavily influenced by international maritime boundaries and bilateral treaties regarding access by U.S. vessels to other nations' territorial waters.

A substantial portion, if not most, of the tuna resources targeted by U.S. tuna harvesters are located much of each year within 200 miles of other nations' coasts, thereby falling within such nations' claimed fisheries jurisdictions. The United States does not officially recognize such claims over tuna because of the highly migratory nature of tuna populations. As a result, the eastern Pacific Latin American coastal nations and western Pacific island nations have restricted the access of U.S. vessels to traditional tuna fishing grounds by increasing the enforcement of their claimed territorial waters. In many cases, substantial license fees must be paid by U.S. harvesters to gain access to tuna grounds that were open to all as recently as a decade ago. Such added costs place U.S. harvesters at a competitive disadvantage vis-a-vis the fishing fleets of the respective licensing nations (pp. 56-67).

- o World harvests of tuna have increased in recent years, resulting in increased world production (and export to the United States) of canned tuna.

Discoveries in recent years of substantial tuna resources in the western Pacific, the Indian Ocean, and other areas has caused many nations to initiate or expand their tuna-harvesting activities. The resulting downward trend in world prices for frozen tuna has induced an increase in canned tuna production worldwide, much if not most of which is destined for the U.S. market, the world's largest canned-tuna market. Such trends have a number of implications for the U.S. tuna industry. U.S. harvesters are facing increased competition for tuna resources in areas such as the eastern Pacific and, to a lesser extent, in the western Pacific. In addition to the competition for tuna resources, the added foreign supply of frozen tuna on world markets has put downward pressure on prices. The increased supply of imported canned tuna in

the U.S. market has put downward pressure on prices for canned tuna, preventing U.S. processors from realizing the full benefit of lower prices for frozen tuna (pp. 115-131).

2. Foreign Tuna Industries

- o The principal foreign producers of frozen tuna include several nations in western Europe and the Pacific rim.

The most important non-U.S. producers of frozen tuna include Japan, Spain, Indonesia, the Philippines, France, Taiwan, and Korea. Together, these nations accounted for 67 percent of the world tuna harvest in 1984. The United States, second only to Japan as a major world producer, accounted for 13 percent of the 1984 total. In addition, Mexico—not historically a significant part of the world's producers, but growing quickly—accounted for 4 percent of the world total in 1984, and between 5 and 10 percent in 1985.

With the exception of Mexico, the tuna fleets of the world's larger tuna producers are scattered worldwide, since tuna regularly migrate across oceans and must be pursued on the high seas. The Mexican fleet is concentrated in Mexican waters in the eastern tropical Pacific. All of the world's larger tuna fleets are important competitors with the U.S. fleet, both in searching for tuna resources and in competing for the business of the principal tuna processing nations (pp. 115-119).

- o The most important non-U.S. tuna-processing nations include Japan, Thailand, Italy, and France.

These nations accounted for 36 percent of world production of canned tuna in 1984, or approximately the same as the share held by the United States, by far the world's single largest producer of canned tuna. Because the United States is also the single largest market for canned tuna, much of foreign canned tuna production is destined for the U.S. market: in 1984, the United States accounted for approximately 40 percent of world imports of canned tuna. Most of these imports were supplied by Thailand and Japan. The output of the other large producing nations, such as Italy and France, was primarily for their domestic markets (pp. 115-119).

- o Global trade in canned tuna is increasing as new producers in nonconsuming areas are exporting their production to traditional markets such as the United States.

The growth in recent years of world tuna harvests has reduced prices for frozen tuna worldwide, making additional canned tuna production economical in nontraditional producing areas, which must export such production to major world markets. By far the most important of these new producers is Thailand. The Thai tuna-processing industry has grown from an insignificant part of world production and trade as recently as 1981 to currently the world's

largest exporter of canned tuna, and the single largest source of imported canned tuna in the U.S. market (57 percent of U.S. imports in 1985). In addition, the growth of the Thai industry, which relies almost entirely on imported frozen tuna, has created new competition not only for domestic producers in the U.S. market, but for other foreign producers, such as Japan, in other markets, such as western Europe. As a consequence, the global structure of tuna production and trade is changing, shifting the traditional patterns of trade in major world markets and forcing adjustments in the U.S. markets for frozen and canned tuna (pp. 118-119).

3. The U.S. Tuna Market

- o The United States is the world's largest market for canned tuna and is second only to Japan as a market for fresh and frozen tuna.

With a large and relatively affluent population, the United States is the largest market for canned tuna. U.S. apparent consumption of canned tuna totaled 794 million pounds, valued at \$1.1 billion, in 1985. It is estimated that this represents 57 percent of the total world canned tuna supply. The great bulk of U.S. consumption of canned tuna occurs in the mainland United States.

U.S. apparent consumption of frozen tuna totaled about 937 million pounds in 1985, representing an estimated one-third of total world frozen tuna supplies. Virtually all U.S. consumption of frozen tuna is accounted for by U.S. processors of canned tuna. A relatively minor amount of fresh tuna is consumed in the U.S. market, compared with Japan, the major world market for fresh and frozen tuna (pp. 67-69).

- o U.S. apparent consumption of frozen tuna declined irregularly during 1979-85, and generally followed the trend in U.S. production of canned tuna during the period.

Apparent U.S. consumption of frozen tuna declined irregularly from 1,190 million pounds in 1979 to 937 million pounds in 1985, or by 21 percent. Virtually all of such consumption is accounted for by U.S. processors of canned tuna, and, thus, the production of canned tuna is the principal determinant of the consumption of frozen tuna. The largest annual declines in the apparent consumption of frozen tuna occurred between 1981 and 1982 (19 percent) and 1984 and 1985 (11 percent). The decline between 1981 and 1982 primarily resulted from processing plant closures in Southern California. The decline between 1984 and 1985 was caused mainly by the restructuring of the canned-tuna sector to reflect lower production levels and by U.S. processing firms procuring a portion of their canned tuna supplies in foreign countries (pp. 74-77).

- o U.S. imports of frozen tuna declined irregularly during 1979-85 and supplied a generally declining share of the U.S. market.

U.S. imports of frozen tuna declined 27 percent during 1979-85, from 699 million pounds in 1979 to 510 million pounds in 1985. The downturn in imports occurred after 1980, when imports peaked at 734 million pounds. The decrease in imports resulted from declining consumption during the period coupled with U.S. processors maintaining their traditional practice of utilizing the total supply from U.S. harvesters.

The share of U.S. apparent consumption of frozen tuna supplied by imports was at its lowest level in 1983 at 46 percent. The share decreased from 59 percent in 1979 to 54 percent in 1985. The share increased in 1984 and 1985 as the available supply from domestic sources declined, due mainly to decreased harvesting capacity and increased exports (pp. 74-77).

- o U.S. exports of frozen tuna traditionally have been minor, but they increased substantially in 1984 and 1985 as U.S. processing firms procured a portion of their canned tuna in Thailand.

U.S. exports of frozen tuna traditionally have been minor (about 1 percent of production) due to several factors, such as the ability of the U.S. processing sector to utilize the entire domestic supply, and the increasing costs of exporting. However, such exports increased substantially in 1984 and 1985, particularly by processor-owned vessels transshipping their catch to Thailand. This resulted from the combined effects of two events: (1) a temporary decline in processing capacity in the U.S. industry as U.S. firms expanded their productive capacity in Puerto Rico and American Samoa, requiring plant closures during renovation and expansion; this decline in capacity temporarily reduced the firms' demand for frozen tuna; and (2) an increase in the production of canned tuna in Thailand, largely in response to orders placed by U.S. processors seeking to supplement their domestic output (which fell during the plant shutdowns) with imported canned tuna; the increased Thai demand for frozen tuna as raw material was supplied largely by U.S. vessels that normally would have supplied the U.S. plants in American Samoa. Export levels ranged between 1.2 million and 11.8 million pounds annually during 1979-83 before increasing to record levels of 65 million pounds in 1984 and 71 million pounds in 1985 (pp. 123-126).

- o U.S. apparent consumption of canned tuna increased irregularly during 1979-85.

U.S. apparent consumption of canned tuna rose 13 percent during 1979-85, from 704 million pounds in the former year to 794 million pounds in the latter year. This increase was irregular, as consumption declined 3 percent between 1979 and 1981, mainly the result of rising canned tuna prices and economic conditions. However, consumption increased 16 percent between 1981 and 1985, as canned tuna prices generally declined and as economic conditions improved (pp. 77-79).

- o U.S. imports of canned tuna increased markedly during 1979-85 and captured an increasing share of the U.S. market.

U.S. imports of canned tuna rose 298 percent in quantity and 221 percent in value during 1979-85, from 54 million pounds, valued at \$65 million, the former year to 214 million pounds, valued at \$209 million, the latter year. The share of the U.S. market held by imports, in terms of quantity, rose from 8 percent in 1979 to 27 percent in 1985. Virtually all U.S. imports of canned tuna are packed in water as a result of tariff considerations. The increases occurred as U.S. canned tuna production declined while the U.S. market expanded. U.S. market entry by imports was facilitated by their price competitiveness and by increasing demand for canned tuna packed in water (pp. 77-79).

- o Thailand grew substantially as a foreign supplier of canned tuna to the U.S. market during 1979-85 and became the leading supplier in 1983.

U.S. imports of canned tuna from Thailand rose from 5 million pounds, valued at \$5 million, in 1979, to 123 million pounds, valued at \$112 million, in 1985. This represented an increase of 2,432 percent. The share of the U.S. import market supplied by Thailand, in terms of quantity, rose from 9 percent in 1979 to 57 percent in 1985. Thailand became the leading foreign supplier of canned tuna to the U.S. market in 1983, when it surpassed the historical leader, Japan. The increase in supplies of canned tuna from Thailand resulted from the same factors that led to the overall rise in U.S. imports of canned tuna. In addition, U.S. tuna processing firms began importing canned tuna produced in Thailand in 1984, further increasing Thai participation in the market (pp. 129-131).

- o U.S. exports of canned tuna are negligible mainly due to the size of the U.S. market and, to a lesser degree, to barriers in foreign markets, mainly Western Europe.

U.S. exports of canned tuna are negligible. The U.S. market is large enough to absorb the entire U.S. production of canned tuna and must rely on imports to supply a significant and increasing portion of demand (27 percent in 1985). Also, the development of U.S. canned tuna exports may be hindered by high tariffs in Western Europe, which is the largest market for canned tuna after the United States. Tariffs on imported canned tuna in Western Europe average about 24 percent ad valorem, a rate that would effectively prohibit U.S. exports from being competitive in that market against the domestic product and competing, low-cost producers, mainly in Asia (pp 126).

- o Canned tuna packed in water captured a commanding share of the U.S. canned tuna market during 1979-85, mainly due to a shift in consumer preferences and to the tariff structure for imports of canned tuna.

During 1979-85, U.S. apparent consumption of canned tuna packed in water increased 82 percent, and consumption of canned tuna packed in oil declined

43 percent. Furthermore, the share of total canned tuna consumption accounted for by canned tuna packed in water increased from 45 percent in 1979 to 72 percent in 1985. A change in consumer preferences contributed to the increase in consumption of canned tuna packed in water, as consumers increasingly preferred lower calorie tuna packed in water. The U.S. tariff structure for imports of canned tuna contributed to the increase in market share for canned tuna packed in water, as duties for this type of product range between 6 and 12.5 percent ad valorem compared to 35 percent ad valorem for canned tuna packed in oil. Thus, virtually all U.S. canned tuna imports are packed in water. Imports accounted for the bulk of the overall increase in U.S. canned tuna consumption during 1979-85 (pp. 77-79).

- o The bulk of the U.S. market for canned tuna is accounted for by canned tuna packed in retail-sized containers.

During 1979-85, the bulk of U.S. canned tuna consumption was accounted for by canned tuna in retail-sized containers. This market sector maintained its share of the total canned tuna market, ranging from 88 to 90 percent of annual canned tuna shipments during 1979-85. Shipments of canned tuna packed in institutional-sized containers accounted for the remaining 10 to 12 percent of the U.S. market. In general, canned tuna packed in retail-sized containers is distributed through retail outlets, where it is purchased by the end consumer. Canned tuna packed in institutional-sized containers is marketed through institutions, restaurants, and hotels, where it is prepared for the end consumer (p. 70).

- o Lightmeat canned tuna dominates the U.S. market as opposed to whitemeat canned tuna.

In 1985, lightmeat canned tuna accounted for 82 percent of the U.S. canned tuna market compared with 18 percent for whitemeat tuna. The primary reason for the small whitemeat market share is the relative scarcity of frozen albacore tuna supplies from which whitemeat canned tuna is produced (pp. 70-71).

- o U.S. imports of canned tuna are concentrated in the institutional and private-label retail-market segments.

Competition in the U.S. market from imported canned tuna is greatest in the institutional-market segment, where imports increased from 43 percent in 1979 to 62 percent in 1985. Competition has also increased considerably in the private-label retail segment, where imports increased from 2 percent in 1979 to 20 percent in 1985. Price is a major demand factor in these market segments, and the price competitiveness of imports led to the increases in their shares of these segments. Also, market entry is less difficult in this segment, because brand recognition is not a factor (p. 71).

- o Domestic canned tuna production is concentrated in the advertised-brand retail-market segment.

Although the share of the U.S. canned tuna market held by U.S. production eroded during 1979-85, U.S.-produced canned tuna remained strong in the advertised-brand retail market sector during the period. The share of this market sector accounted for by U.S. processors ranged between 94 and 98 percent during 1979-85 (although a portion of this share is accounted for by canned tuna obtained by U.S. processors from foreign sources). U.S. processors have maintained their position in this market segment because of brand recognition that has been developed over a long period of time. For this reason, direct entry into this market segment is difficult for imports (p. 71).

4. Market Trade Barriers

- o The large and growing U.S. market for canned tuna has traditionally provided an ample demand for U.S. production of canned tuna, reducing the need for U.S. exports of this product.

The U.S. market is the world's largest for canned tuna and consumes virtually the entire U.S. production in addition to 40 percent of world exports. Consequently, U.S. producers of canned tuna have never exported more than a nominal share of their total output. Many of the principal foreign competitors, including Thailand, Taiwan, and the Philippines, have a very limited domestic market and no demand for U.S. exports of canned tuna. This lack of demand is the only effective barrier to U.S. exports of canned tuna to these markets.

Other significant foreign markets for canned tuna, such as Western Europe, are supplied largely by domestic production, in part because of significant tariff and nontariff barriers. For the reasons outlined above, such barriers have little direct effect on U.S. canned tuna producers (p. 126).

- o The principal effect of foreign-market trade barriers on U.S. tuna producers and consumers has been indirect: barriers in other markets influence third-party suppliers to export to the less protected U.S. market.

The significant impediments to exports of canned tuna to markets such as Western Europe has indirectly affected the U.S. market by redirecting foreign production from such protected markets to the relatively less protected U.S. market. As a result, U.S. imports of tuna products are higher than they might be if there were less effective barriers to exports to the Western European market. Industry sources in the United States, Thailand, and Western Europe note that major exporting nations such as Thailand shift between markets depending on relative net prices; these net prices are affected by tariffs and

other costs of trade. To the extent that barriers to trade in non-U.S. markets divert world trade to the U.S. market thereby reducing U.S. prices, the impact of such barriers on U.S. producers and consumers of tuna products is marginally different than if the barriers had a direct impact on U.S. exports.

5. Leading Competitive Factors

- o U.S. tuna harvesters are losing the competitive advantage in access to tuna resources that a modern, efficient fleet of vessels had given them in past years.

The migratory nature of tuna populations required U.S. harvesters to develop efficient, large scale tuna vessels, which gave them a competitive advantage over smaller, less modern foreign fleets. The worldwide adoption of the purse seine technology has decreased that advantage, and foreign nations' extension of national jurisdiction over local fishery resources (including tuna) has limited U.S. tuna harvesters' access to traditionally important fishing grounds. As a result, competition with foreign fleets has increased, both for access to the world's tuna resources and for access to U.S. and foreign markets for frozen tuna (pp. 215-221).

- o U.S. tuna processors are technologically as efficient as their foreign competitors, but they face a labor-cost disadvantage against new rivals in low-cost areas such as Southeast Asia.

There is disagreement among U.S. tuna processors as to the role that labor cost advantage plays in international competition in tuna processing. Labor costs account for 5 to 15 percent of total production costs of canned tuna, and hourly wage rates for cannery labor in California, the traditional home of the U.S. industry, are as much as 25 times greater than those in important competing regions such as Thailand. Offsetting this, is the relatively low labor productivity alleged by some industry sources to occur in Thai canneries. Nevertheless, most U.S. tuna processors are now located offshore primarily in Puerto Rico and American Samoa, where the labor-cost disadvantage is much less than in California (pp. 210-215).

- o There is no clear general competitive advantage held by domestic producers over foreign suppliers, or vice versa, with respect to quality factors in the U.S. tuna market.

With respect to frozen tuna, there are no general differences in quality among the various major supplying countries, because these countries basically harvest tuna from the same general stocks on the high seas, using similar methods and technology. Any quality differences usually result from individual instances of deviations from accepted fishing and handling practices or from general qualitative differences inherent in a particular fishing area or harvesting method. However, these differences generally affect all frozen tuna suppliers equally.

Quality differences between the products of major canned-tuna suppliers to the U.S. market are also minimal. Canned tuna generally is produced using similar methods and technology throughout the world. In addition, the raw material used by various canned-tuna-producing countries is from the same stocks and varies little in quality, as discussed above (pp. 229-232).

o The competitive position of U.S. suppliers vis-a-vis foreign suppliers of tuna in the U.S. market varies by market segment.

The U.S. market for frozen tuna is composed of the albacore (marketed as whitemeat) and tropical species (mainly yellowfin and skipjack, marketed as light-meat) segments. U.S. producers in the albacore sector are currently at a competitive disadvantage compared with foreign albacore fleets. The U.S. albacore fleet consists of relatively small vessels with a limited range that traditionally delivered its catch to southern California tuna-processing plants. When these plants closed, beginning in the early 1980's, the competitive position of the U.S. albacore fleet eroded to such a point that most of the fleet exited the fishery.

U.S. producers of frozen tropical tuna, namely the purse seine fleet, also experienced a decline in their competitive position as a result of the plant closures. However, since this fleet is comprised of much larger and longer ranging vessels, the effects of the closure were not as extreme as those on the albacore fleet. But, generally declining world frozen tuna prices worsened the competitive position of the U.S. purse seine fleet, particularly since 1982, as increased costs associated with longer distances between tuna-fishing grounds and U.S. processing facilities caused by resource conditions and processing-facility closures were not countered by higher prices. The effect of falling prices, per se, did not affect the albacore fleet to the same degree, inasmuch as albacore is relatively scarce and is higher in price than tropical tuna.

The ability of U.S. canned tuna processors to compete in the U.S. market generally varies by market segments in terms of type of pack. As competition from imports during 1979-85 was most intense in the institutional and private-label retail-market segments, the market share of U.S. processors declined the most in these segments. U.S. processors are strongest in the market segment for canned tuna packed in oil, in which there is a 35-percent ad valorem duty on imports, and in the advertised-brand retail segment, in which long-term brand support has provided an advantage (pp. 232-236).

o U.S. tuna producers generally hold a competitive advantage over foreign suppliers in terms of transporting tuna to the U.S. market, but this advantage eroded during 1979-85.

U.S. tuna harvesters historically have held an advantage over foreign suppliers with respect to transporting frozen tuna to U.S. processing plants. This was due mainly to the fact that the bulk of U.S. processing capacity was

located in U.S. ports, where foreign fishing vessels are not permitted, by law, to unload. In addition, a large part of the U.S. processing capacity in the past was located in southern California, relatively near major tuna-fishing grounds in the eastern tropical Pacific, where U.S. vessels traditionally harvested the bulk of their tuna. Foreign tuna vessels were forced to transship most of their supplies to U.S. markets via refrigerated cargo vessels, which involves considerable costs (in some instances, more than one-quarter the price of frozen tuna) that usually are borne by the seller. This situation has changed with the closure of the bulk of U.S. processing capacity in southern California. Currently, this capacity is proportionally higher in American Samoa, where foreign tuna vessels can deliver their frozen tuna directly to U.S. processing plants. Also, regarding the major U.S. tuna-processing area of Puerto Rico, although U.S. tuna vessels still maintain an advantage over foreign competitors in terms of transportation because direct delivery by foreign vessels is prohibited in Puerto Rico, U.S. vessels now face generally increased distances to deliver their catch, thus incurring an increase in costs (mainly fuel) as well as in lost fishing time.

U.S. canned tuna producers also hold a competitive advantage vis-a-vis foreign competitors in the U.S. market because of the relative proximity of the market. However, transportation is a smaller share of price for canned tuna than for frozen tuna (about 1 to 3 percent for domestic suppliers, and 5 to 8 percent for foreign suppliers). This advantage varies somewhat geographically and is greatest for the east coast region, which is supplied by domestic producers—mainly production facilities in Puerto Rico. The closure of production facilities in southern California diminished the overall transportation advantage enjoyed by U.S. processors in the U.S. market (pp. 236-239).

6. U.S.-Mexico Tuna Trade

- o The Mexican tuna industry expanded substantially during 1979-85, particularly in harvesting.

During 1979-85, the capacity of the Mexican tuna fleet increased 248 percent, and Mexican production of frozen tuna rose an estimated 184 percent, from 73 million pounds in 1979 to an estimated 207 million pounds in 1985. Mexican canned tuna production capacity rose 42 percent between 1980 and 1984, and canned tuna production rose 52 percent, from 32 million pounds in 1979 to 49 million pounds in 1985. The expansion of the tuna industry resulted in large part from the Mexican Government's commitment to develop its fishery resources and to develop export-oriented industries (pp. 172-205).

- o The expansion of the Mexican tuna industry occurred during a period in which detrimental conditions developed for exports.

Major developments occurred during 1979-85 that were detrimental to Mexican tuna product exports. First and foremost of these developments was

the embargo by the United States on imports of Mexican tuna products. The embargo was imposed when the Mexican industry had begun a significant expansion that had been planned primarily to increase exports to the United States. Second, world supplies of tuna increased substantially, thus depressing prices in alternative export markets. Third, production costs increased substantially in Mexico caused mainly by a combination of high inflation and interest rates, currency devaluations, and Government decontrol of prices of inputs such as petroleum. Finally, competition increased from relatively low-cost producers in countries such as Thailand. The combination of these developments significantly decreased the competitiveness of Mexico in the world tuna market (pp. 172-205).

o Mexican exports of tuna products consist almost entirely of frozen tuna.

Virtually all of Mexican tuna exports consist of frozen tuna. During 1983-85, such exports increased 140 percent from approximately 33 million pounds in 1983 to 79 million pounds in 1985. This increase reflected both the expansion of the Mexican tuna fleet and the resulting increased tuna catch, as well as the inability of Mexico to export canned tuna. Canned tuna exports totaled about 433,000 pounds in 1983, with no exports in 1984 or 1985. The primary reasons for the lack of Mexican canned tuna exports have been market barriers (U.S. embargo, high European tariffs) and reportedly inferior quality (pp. 172-205).

o Involvement in the tuna industry by the Mexican Government is extensive.

The Mexican Government is heavily involved in the tuna industry. The Government has an ownership position in both the harvesting and processing sectors through Productos Pesqueros Mexicanos (PPM), a Government-controlled corporation. In 1984, PPM accounted for 18 percent of the production of frozen tuna and 65 percent of the production of canned tuna in Mexico. The Government also provides financial assistance to private tuna operations, mainly in the form of low interest operating and capital loans, loan guarantees, and sale of diesel fuel at below-market prices (pp. 198-204).

o Mexico has the capacity to significantly increase its production of both frozen and canned tuna.

Although the Mexican tuna industry expanded substantially during 1979-85, it has a significant amount of idle capacity, both in the harvesting and processing sectors. According to estimates of the National Marine Fisheries Service, as of December 1985, 25 tuna vessels, with a carrying capacity of 19,210 short tons were inactive. The active capacity of Mexican vessels operating in the eastern tropical Pacific in 1985 totaled 52,253 short tons. Thus, theoretically, Mexico could increase its current frozen tuna production by more than one quarter of the current level by activating this idle capacity.

For canned tuna production, the capacity utilization rate was estimated to be about 36 percent in 1984 (the latest year for which data are available), with total capacity estimated to be 157,625 short tons of raw material throughput. This rate is quite low, particularly compared with the U.S. rate of about 89 percent in 1985. If the Mexican rate increased to the U.S. level, canned tuna production could increase approximately 145 percent (pp. 172-205).

THE U.S. TUNA INDUSTRY

Description of Tuna Species

Tuna are marine fishes that are found in waters throughout the world, principally in tropical and temperate waters. Tuna are members of the Scombridae family of fishes and are related to mackerels, bonitos, and billfish, among others. According to regulations promulgated by the U.S. Food and Drug Administration (FDA), only certain species may be used for the production of the product known as canned tuna (21 CFR 161.190). The following tabulation shows the FDA list of approved species (both common and scientific names) and the current names generally used for each species:

FDA reference		Current reference 1/	
Common name	Scientific name	Common name	Scientific name
Bluefin	<u>Thunnus thynnus</u>	Northern bluefin	<u>Thunnus thynnus</u>
Southern bluefin	<u>Thunnus maccoyii</u>	Southern bluefin	<u>Thunnus maccoyii</u>
Oriental	<u>Thunnus orientalis</u>	Northern bluefin	<u>Thunnus thynnus</u>
Albacore	<u>Thunnus germon</u>	Albacore	<u>Thunnus alalunga</u>
Blackfin	<u>Thunnus atlanticus</u>	Blackfin	<u>Thunnus atlanticus</u>
Big-eyed	<u>Parathunnus mebachii</u>	Bigeye	<u>Thunnus obesus</u>
Yellowfin	<u>Neothunnus macropterus</u>	Yellowfin	<u>Thunnus albacares</u>
Northern bluefin	<u>Neothunnus rarus</u>	Longtail	<u>Thunnus tonggol</u>
Skipjack	<u>Katsuwonus pelamis</u>	Skipjack	<u>Katsuwonus pelamis</u>
Little tunny	<u>Euthynnus alletteratus</u>	Little tunny	<u>Euthynnus alletteratus</u>
Little tunny	<u>Euthynnus lineatus</u>	Black skipjack	<u>Euthynnus lineatus</u>
Kawakawa	<u>Euthynnus yaito</u>	Kawakawa	<u>Euthynnus affinis</u>

1/ FAO Species Catalogue, Vol. 2, Scombrids of the World.

As is apparent from the above tabulation, there is some divergence among taxonomists as to the convention of naming the various species of tuna. There are some fish that some scientists consider as tuna that are not listed in the FDA regulations (principally bullet (Auxis rochei) and frigate (Auxis thazard) tunas). Also, some differences exist concerning naming a particular tuna. For example, the name given by the American Fisheries Society, a recognized authority on fisheries taxonomy, for skipjack is Euthynnus pelamis, which differs from the name in the preceding tabulation. There is even more variation in the common names used to identify tuna species, inasmuch as these names differ according to the geographic location of the tuna harvest and the nationality of the fishermen. However, for the bulk of tuna harvested by U.S. vessels, the species are generally limited to skipjack, yellowfin, and albacore. Consequently, in common practice few problems exist in identifying the fish that can be labeled in the United States as tuna.

The most commercially important tuna species to the U.S. tuna industry and market are skipjack, yellowfin, albacore, and, to a lesser extent, bluefin and

bigeye. Skipjack is the leading species of tuna in terms of the quantity of both U.S. and world landings. Skipjack surpassed yellowfin as the leading commercially harvested species, both in the United States and the world, in 1972 and has since held that position. Skipjack is one of the smaller species of tuna, commonly ranging between 18 and 32 inches in length and between 6 and 13 pounds in weight. Skipjack are found throughout the world in waters that range in temperature between about 15° and 25° Celsius (C), or approximately between 40° north and 40° south in latitude. Skipjack generally is considered to be a lower quality tuna than yellowfin and albacore owing to a darker flesh color and a lower meat/whole fish yield to processors.

Yellowfin is the second leading tuna species in terms of both the U.S. and world tuna industries. These fish generally range in length between 27 and 60 inches and in weight between 15 and 55 pounds. Yellowfin generally inhabit waters that range in temperature between 18° and 31° C, which corresponds in latitude between approximately 40° north and 30° south. Yellowfin is the preferred species for the production of lightmeat canned tuna because of its light flesh color and its generally higher yield relative to skipjack and most other species used for lightmeat canned tuna.

Albacore is the third most important tuna species. Albacore generally range between 15 and 36 inches in length and weigh between 8 and 33 pounds. Albacore are most commonly distributed in waters that range in surface temperature between 15° and 19° C and in deeper waters ranging between 13° and 25° C. Geographically, albacore are most commonly found in waters that range in latitude between 45° north and 40° south. FDA regulations have specified albacore as the only tuna species that can be used to produce canned whitemeat tuna in the United States. Albacore is usually regarded as the highest quality tuna for canning purposes, mainly because of its very light-colored flesh.

Bigeye tuna follows albacore in importance in the United States, although its level of world landings are about equal to those of albacore. Bigeye generally range in length between 35 and 72 inches and in weight between 9 and 36 pounds. Bigeye are found primarily in waters ranging in temperature between 13° and 29° C, which corresponds to a latitudinal range between about 40° north and 40° south. U.S. tuna canners use relatively small quantities of bigeye tuna; most bigeye is consumed in the Japanese fresh-fish market.

Bluefin tuna is of relatively minor importance in the United States, but a significant world fishery exists. Bluefin tuna (of which the two species are Northern and Southern) are among the largest of the tuna species. Southern bluefin commonly range in length between about 60 and 80 inches and in weight between 85 and 285 pounds. Northern bluefin are substantially larger, with specimens recorded up to nearly 1,500 pounds. Northern and Southern bluefin range in waters further north and south, respectively, than other tuna species. Bluefin that are commercially landed generally are destined for the Japanese fresh fish market, as the flesh is considered too dark-colored for canning purposes.

The other species of tuna are of relatively minor importance, both in the U.S. and world tuna fisheries. In addition, tuna-like fishes (mainly bonito and mackerel) support commercially important fisheries and canning industries throughout the world; however, these fisheries and industries generally are distinct and separate from those producing tuna.

Tuna are highly migratory. The exact migration patterns of tuna are not well known. However, research that has been conducted on tuna migration has provided certain observations regarding migration tendencies. Tagging studies have shown that albacore migrate across the Pacific Ocean between California and Japan at a rate of 16 miles per day. Northern bluefin have been observed to travel across the Atlantic Ocean at a rate of 40 miles per day. Other species generally travel lesser, but substantial, distances. The migratory nature of tuna has been instrumental in determining the structure and location of the U.S. and world tuna harvesting and processing industries, as tuna are pursued mainly on the high seas.

U.S. Tuna Harvesting

Methods of production

The U.S. tuna industry began in Southern California in the early 1900's. Since that time, in response to both market and resource influences, the technology of the harvesting sector has gone through several changes. These changes, which are discussed later, include adaptation to, and specialization in, the harvest of particular species of tuna. This specialization has had impacts on the international competitiveness of U.S. tuna harvesters, since specialization has not only made the harvest of tuna more efficient, but it has also restricted the easy adaptability of the tuna fleet to long-term changes in market and resource conditions.

Three types of harvesting vessels are used by U.S. tuna fishermen: purse seiners, currently the most important segment of the U.S. tuna fleet; trollers; and baitboats. Each utilizes a distinct gear type.

Purse seiners.—Purse seiners are large, well-equipped oceangoing ships that sail the fishing grounds of the high seas in search of tuna. The so-called "superseiners", which are quite common, can cost as much as \$10 million to \$12 million to construct. ^{1/} Largely because of their size (about 200 feet in length and 75 feet in width), purse seiners generally are not suitable for fishing for species other than tuna. ^{2/} These vessels are equipped with a vast array of electronic equipment, such as radar, position finders, depth recorders, automatic monitoring systems, satellite navigational and sonar systems, and radios, as well as one or two helicopters. The vessels

^{1/} These vessels are usually of 1,000 to 1,200-ton gross capacity, but can sometimes be as large as 1,700 tons. Capacity in tuna harvesting in this report is measured in round fish weight, or the weight before any processing of whole fish taken from the water.

^{2/} See the discussion below of the interrelationship of tuna fishing with other types of fishing.

normally carry a crew of 18, including the helicopter pilot(s). They stay at sea for several months at a time and usually make three or four fishing trips a year.

Tuna are usually spotted by a lookout placed in the "crow's nest" high above the main deck of the vessel, or in a helicopter launched from the vessel. The location of the tuna can be determined by porpoises swimming along the surface above them, sonar detection, the surface disturbances they make, or more recently—particularly in the newly developed fisheries of the western Pacific—by the use of fish-aggregating devices (debris placed in the water, which normally attracts the fish).

Once tuna are spotted, a skiff (a large diesel-powered workboat) is launched from the seiner and begins encircling the fish with a nylon net (the "purse seine") about 1 mile long and 300 feet deep, that is suspended from floats on the surface and has one end attached to the seiner. Motorboats, also launched from the vessel, begin herding the fish (and any porpoises which are swimming above them) toward the closing net. As the fish are herded within the confines of the net, the skiff and the seiner come together, thus closing the circle of the net. A cable along the bottom of the net is drawn and the bottom of the "purse" is closed, thus trapping the tuna and porpoises within the closed net. A "back-down" maneuvering of the seiner, combined with the use of a special apron built into one part of the seine, permits porpoises to slip over the top of the seine and escape into the sea. ^{1/} Using hydraulic equipment, the tuna are removed from the closed seine with a "brail" net and put into the vessel's storage wells. The wells are filled with a chilled brine solution and the fish freeze almost immediately upon entering the wells. When the wells are filled with fish, the vessel makes its way to the dock of the cannery or in areas such as the western Pacific, the vessel will travel to a transshipment center and unload to a refrigerated cargo carrier. The carrier will then transport the fish to the cannery.

Trollers.—Trollers are small-sized vessels, with an average hold capacity of 20 to 25 tons. Most of these vessels are equipped with mechanical refrigeration for preserving the catch. Trollers fish mainly off the California coast, usually within 300 miles from port, but a few larger trollers reportedly venture as far as 3,000 miles from port. Unlike purse seiners, trollers are easily adapted for use in other fisheries, such as salmon or crab. Many, if not most troller operators will alternate between the tuna and salmon or crab fisheries over the course of a year, depending on relative prices and availability of these species of fish and shellfish.

Trolling involves catching tuna on surface lures in which barbless hooks have been concealed. A vessel rigged to troll is distinguished by the two or four poles extended at right angles to the vessel. Five or six lines are attached to each pole. The lines are graduated in length and rigged so that each can be pulled onboard without disturbing the other lines on that side. When in search of fish, the vessels cruise in likely areas at a speed of 6 to 8 knots. When a fish is caught, the respective line is pulled in immediately while the vessel continues under way. The majority of the U.S. albacore catch is made using this gear type.

^{1/} See the discussion below on the U.S. Government regulations governing porpoise harvesting by U.S. tuna fishermen.

Baitboats.—Baitboats are small- to medium-sized craft that accounted for the majority of the U.S. tuna catch before the early 1960's. The carrying capacity of the present baitboat fleet range from 70 to 150 tons per vessel. These vessels are equipped with bait-carrying facilities, refrigeration equipment, and navigational aids. Baitboats have a raking stem and raised deck forward, extending two-thirds the length of the hull to the large bait tanks aft. Most baitboats have the hold divided into water-tight compartments in which bait can be carried on the outward voyage and frozen tuna on the return trip. The boats are equipped to freeze their catches in brine and store them in a frozen state. The catch by baitboats is primarily skipjack and yellowfin.

Once tuna are spotted, live bait (mainly anchovies) is thrown overboard to attract the tuna to the vessel. When the tuna rush in to take the bait, they are taken by fishermen using poles and lines. Live bait is continually thrown overboard to hold the school in the vicinity of the vessel and fishing continues as long as the school remains.

Quantity and value of production

The United States is the second largest producer of tuna in the world, behind Japan. Total landings of tuna by U.S. harvesters in 1985 reached 258,069 short tons 1/, with a delivered value of \$212 million. In addition, approximately 35,000 tons of tuna were harvested and exported, mostly to Asia for processing into canned tuna. Most U.S.-landed tuna is harvested in international waters, the most important area being the Pacific Ocean.

As shown in the following tabulation of data from the National Marine Fisheries Service (NMFS), commercial landings in ports in the continental United States declined irregularly during 1979-85, while at the same time landings in Puerto Rico and American Samoa increased irregularly (NMFS data, in short tons, round-weight equivalent 2/):

<u>Year</u>	<u>Atlantic, Gulf, and Pacific Coast States and Hawaii</u>	<u>Puerto Rico and American Samoa</u>	<u>Total</u>
1979.....	182,238	71,838	254,076
1980.....	199,716	50,303	250,019
1981.....	170,575	74,365	244,939
1982.....	130,705	105,840	236,544
1983.....	139,346	153,649	292,995
1984.....	105,915	185,545	291,460
1985 <u>1/</u>	41,527	216,542	258,069

1/ Preliminary data.

1/ A short ton is equivalent to 2,000 pounds. Unless otherwise indicated all tons stated in this report are short tons.

2/ The weight as taken from the water; the complete or full weight as caught.

Between 1980 and 1985, there was a steady shift in landings from ports on the mainland United States to offshore locations in Puerto Rico and American Samoa, while overall landings fluctuated between 237,000 tons in 1982 and 293,000 tons in 1983. The exceptionally high 1983 and 1984 catch rates were primarily the result of a relocation of many vessels' harvesting activity from the eastern Pacific to the western Pacific, which resulted in a substantial increase in catch rates. The reasons for the relocation are discussed below.

U.S. landings by species.—Yellowfin and skipjack were the principal species caught by U.S. tuna fishermen during 1979–85. Yellowfin and skipjack together accounted for 94 percent of the total U.S. catch in 1985. Catches of yellowfin declined significantly between 1979 and 1984 (table 1 1/). Overfishing of the yellowfin tuna resource, the exit of U.S.–flag vessels from active tuna fishing, and the effects of El Nino 2/ were important factors leading to the decline in U.S. catches of yellowfin during this period, particularly in the traditionally important eastern Pacific. Many vessels that normally fished for yellowfin turned to skipjack for their catches or moved to other tuna fisheries such as those in the western Pacific. By 1985, the stock of yellowfin in the eastern Pacific had recovered substantially from its depleted state of earlier years, and as a result, U.S. landings of yellowfin (all oceans) increased by 25 percent in volume, an increase of 55 million pounds over the 1984 catch. U.S. catches of skipjack tuna fluctuated during 1979–85, from a low of 189 million pounds in 1982 to a high of 323 million pounds in 1984. Albacore accounted for 3 to 6 percent of the total U.S. catch during 1979–85; landings ranged from a low of 15 million pounds in 1979 and 1982 to a high of 30 million pounds in 1984. The remainder of the U.S. tuna catch consisted mainly of bigeye and bluefin, relatively unimportant to U.S. fishermen; the annual U.S. catch of bigeye and bluefin averaged 11 million pounds during 1979–85.

U.S. production by type of vessel.—The purse seine vessels accounted for 95 percent or more of the total U.S. catch of tuna during 1979–85. Yellowfin was the principal component of the purse seine catch, followed by skipjack and bluefin during most of 1979–85, with the exception of 1983–84, when yellowfin harvests declined and large quantities of skipjack were harvested. Baitboats

1/ The tables in this report are located in Appendix C.

2/ El Nino ("the Little One" in Spanish) is an irregularly occurring oceanographic phenomenon directly affecting the tropical and southern Pacific region and indirectly affecting weather patterns worldwide. It is characterized by a warming of the waters of the eastern tropical Pacific, which in turn upsets normal water currents and trade-wind flows throughout the Pacific. The principal effects are increased rainfall and water temperatures in the eastern tropical Pacific and reduced rainfall and lower water temperatures in the western tropical Pacific. The Pacific thermocline, a layer of water buffering the warm surface water from the cooler, deeper water, drops in the eastern Pacific as much as several hundred feet, while in the western Pacific it rises; following this pattern are the tuna populations of the respective areas, which prefer the thermocline temperature. The 1982–84 El Nino, the worst on record (with recorded events dating from the 16th century), caused billions of dollars worth of destruction worldwide, with flooding of the Pacific coast of Latin and South America and droughts in Oceania, Australia, and southern Africa.

principally land yellowfin and skipjack. Trollers have traditionally landed albacore, accounting for virtually the entire U.S. albacore catch, with the exception of 1984, when approximately 4,100 tons were caught by purse seiners 50 to 100 miles off San Diego, California during July and August. ^{1/} Albacore are not normally caught by purse seine vessels as this species is too scattered to be economically feasible as a target fishery for these vessels. The harvest of all tuna species by baitboats and trollers accounted for approximately 5 percent of the total U.S. catch of tuna.

Domestic shipments versus exports.—Exports historically have played a very minor role in the U.S. tuna-harvesting industry. Exports of frozen tuna have been negligible mainly because of the U.S. processors' ability to utilize the entire U.S. tuna catch. Other factors, such as geographic location, contractual relationships, and traditional supplier-buyer patterns also have contributed to this situation. However, exports of frozen tuna have been increasing in recent years. This is mainly the result of increased demand for frozen tuna in Thailand, stimulated in part by U.S. producers of canned tuna, some of which have contracted for large quantities of imported canned tuna for distribution in the U.S. market. The following tabulation shows U.S. exports of frozen tuna (all species) during 1979-85 (data from the NMFS; in short tons):

1979.....	5,906
1980.....	2,257
1981.....	1,379
1982.....	4,313
1983.....	583
1984.....	32,476
1985.....	34,797

Export levels and trends for frozen tuna are discussed in further detail in the section on world trade in tuna later in the report.

Structure of the U.S. tuna-harvesting sector

Number and location of producers.—The number and location of vessels in the U.S. tuna fleet have undergone dramatic changes in the several decades of its existence. Between its inception in the early 1900's and approximately 1960, the U.S. harvesting sector was dominated by baitboats and, to a lesser extent, trollers. Initially, U.S. tuna harvesters targeted the local albacore resources off the California coast. As the demand for canned tuna grew in the 1920's and 1930's, the demand outpaced supply, and vessels were forced to go further from shore, where additional albacore resources as well as stocks of yellowfin and skipjack were located. By 1930, about four-fifths of the U.S. tuna harvest occurred off the coast of Mexico and Central and South America.

Such catches were possible because of changes in the U.S. tuna fishing fleet. Larger baitboats were built with greater fuel capacity and cruising

^{1/} Herrick, Samuel F. and Koplin, Steven J. U.S. Tuna Trade Summary, 1984, June 1985, p. 6.

ranges. In the late 1930's, the introduction of mechanical refrigeration allowed the fleet to stay at sea for longer periods without damage to the fish. U.S. tuna fishermen began to convert baitboats to purse seiners in the mid 1950's to early 1960's; however, the bulk of the U.S. catch was still made by the baitboats. Table 2 shows the number and capacity of the U.S. tuna fleet, by vessel type, for selected years during 1955-1985.

Between 1955 and 1965, a dramatic shift in the technology of the U.S. tuna fleet took place, as the relative importance of purse seiners grew from minor significance to nearly complete dominance. In 1955, the combined capacity of the purse seiners totaled 8,250 tons, about 17 percent of the U.S. tuna fleet; by 1965, after what was probably the most rapid adoption of new technology by any segment of the U.S. fishing industry in its history, ^{1/} the purse seiner capacity had grown to nearly 40,000 tons, about 90 percent of the fleet's capacity, an increase of 385 percent in 10 years. The relative share of the fleet's capacity accounted for by purse seiners has continued to grow, reaching 99 percent in 1985.

Number of producers.—During 1955-85, the number of U.S. tuna-harvesting vessels generally declined. In 1955, a total of 249 baitboats and purse seiners comprised the U.S. fleet; this number declined almost steadily to 99 in 1985, of which 90 were purse seiners. The average size of the typical purse seiner increased significantly, from 125 tons in 1955 to 1,079 tons in 1985. This increase in size allowed for distant-water fishing and the wide geographic range of operations required for year-round harvest of migrating tuna resources. However, as discussed later in this report, this tuna-specific harvesting technology has affected the economic viability of the U.S. tuna fleet.

In recent years, particularly between 1981 and 1985, the size of the U.S. tuna fleet declined substantially, in terms of both the number of vessels and fleet-wide harvesting capacity. Table 3 shows the size of the U.S. flag tuna purse seine fleet from 1979 through 1985. The fleet declined from a peak of 128 vessels, with a capacity of 121,194 tons, at yearend 1981 to 90 vessels, with a capacity of 97,131 tons, by yearend 1985. Of the 57 vessels that left the fleet during 1981-85, 34 were transferred to foreign flags; most continue to actively fish for tuna. In addition, 8 vessels transferred to other (nontuna) U.S. fisheries, and 15 vessels were lost at sea. Of the 90 vessels remaining in the U.S.-flag purse seiner fleet by yearend 1985, 21 were tied up; the combined capacity of these idled vessels was 22,422 tons, representing 23 percent of the total fleet capacity in 1985. This compares with no idle vessels in 1979, and 11 idle vessels (8,587 tons total capacity, or 9 percent of the fleet total) in 1981.

Data on the U.S. baitboat fleet is presented in table 4. These data cover only those vessels fishing for tuna in the eastern Pacific Ocean;

^{1/} The growing popularity of the purse seiner was aided by the development in the late 1950's of nylon nets (which replaced cotton nets) and the power block winch, both of which acted to substantially increase the efficiency of the purse seine method.

however, because of the limited cruising range of these vessels, it is assumed that such vessels constitute the entire U.S. fleet of tuna baitboats. During 1955-1961, the baitboat fleet declined sharply in number, as many vessels were converted to purse seiners; the fleet shrank from 183 vessels in 1955 to 55 in 1961. From 1961 to the mid-1970's, the fleet size stabilized, averaging 50-55 vessels during the period. Following 1976, another large decline in fleet size occurred: from a peak of 59 vessels in 1974 and 1976, the fleet declined to only 9 vessels in 1985. Similarly, the fleet-wide capacity has been decreasing since the mid-1970's, from a peak of 5,816 tons in 1974 to 696 tons in 1985. The size of the average baitboat has fluctuated around an average of 85 to 90 tons since the early 1960's; in 1985, the typical baitboat had a 77-ton capacity. No baitboats have been converted to purse seiners since 1972. While specific data are not available, it is reported by industry sources that many vessels formerly in the tuna baitboat fleet have been transferred to other nontuna U.S. fisheries, as well as to foreign-flag fishing operations.

The number of trollers that spend at least part of their effort in the tuna fishery, as reported by the Western Fishboat Owners' Association, declined from approximately 660 vessels in 1980 to 108 in 1985. The average holding capacity of vessels in the troller fleet is 22 tons, and has not changed significantly in recent years. It is difficult to infer much about tuna harvesting activity from data on trollers because these vessels commonly alternate between tuna and other fisheries during the year. Consequently, there is not necessarily any direct relationship between troller fleet size or capacity and tuna catches or effort spent searching for tuna. Additional information on vessel capacity and capacity utilization is found later in this report.

Location of producers.—The eastern Pacific was the principal fishing grounds for the U.S. tuna fleet (all vessel types) during most of 1979-85; however, conditions such as the decline in the yellowfin resource and the El Nino oceanographic currents that led to fewer catches in the eastern Pacific resulted in a decline in the number of vessels fishing in the eastern Pacific and an increase in the number fishing in the western Pacific.

In 1979, 125 purse seiners, with a hold capacity of 109,857 tons, actively pursued tuna fishing in the eastern Pacific; by 1985 only 49 vessels, with a capacity of 43,717 tons, fished the eastern Pacific, a decrease of 61 percent in the number of vessels and a 60 percent drop in hold capacity since 1979 (table 5). Very little commercial tuna harvesting is carried out by U.S. vessels in the Atlantic Ocean. For the most part, U.S. tuna harvests in the Atlantic are carried out by recreational fishermen or sporadically by U.S. purse seiners in transit to Puerto Rico.

Shifts in U.S. tuna fleet location.—The Pacific Ocean provides the vast majority of the tuna resources harvested by U.S. fishermen, accounting for 95 percent of the total quantity of tuna harvested by U.S. vessels in 1985. The Pacific tuna fishery basically consists of two distinct regions, the eastern Pacific, extending from California to Peru, and the western Pacific, located primarily in the waters of the Pacific rim nations and Trust

Territories. In recent years there have been significant shifts in the areas of the Pacific Ocean targeted by U.S. vessels for tuna harvesting. In particular, there was a movement away from the eastern Pacific and to the western Pacific during 1982-84; however, in 1985, some vessels returned to the eastern Pacific. These shifts in fleet location are due primarily, of course, to tuna resource availability, which has been dramatically affected by biological and environmental conditions, but the shifts have also been influenced by the relocation of much of the U.S. cannery capacity from southern California to offshore locations in Puerto Rico and American Samoa.

Resource-related factors causing shifts.—The effects of the most recent El Nino, which occurred from late 1982 through early 1984, were widespread on both eastern and western Pacific fisheries. With respect to tuna, a major effect of El Nino is on water temperatures, and the 1982-84 El Nino forced an increase in water temperature in the eastern Pacific and a decrease in temperature in western Pacific waters. ^{1/} This caused eastern Pacific tuna to seek deeper waters for the cooler thermocline they prefer, while western Pacific tuna moved closer to the surface as the western Pacific thermocline rose. As a result, apparent abundance of the tuna resources of the eastern Pacific declined, raising harvesting costs in that region, and the apparent abundance of western Pacific tuna increased, reducing harvesting costs in that region. Therefore, there was a large shift in the total harvesting effort by tuna vessels (mostly U.S. vessels) from the eastern to the western Pacific. The idling of U.S. tuna harvesting capacity also increased, due in part to the rising costs of harvesting eastern Pacific tuna.

The shift in harvesting effort across the Pacific can be seen from the relative changes in the U.S. tuna catch (delivered to U.S. canneries or exported) by ocean, shown in table 6. The total catch (all species) in the eastern Pacific fell from 467 million pounds in 1979 to 322 million pounds in 1982, when the El Nino began. The catch continued to decline, although more quickly, as the El Nino continued, reaching a low of 191 million pounds in 1984. The catch has since recovered somewhat as the El Nino dissipated, rising to 218 million pounds in 1985. U.S. tuna fleet capacity in the eastern Pacific (including purse seiners, baitboats, and trollers) followed the trend in total catch, declining from 113,506 tons in 1979 to 45,809 tons in 1985 according to IATTC reports. Meanwhile, the U.S. catch in the western Pacific increased steadily from 26 million pounds in 1979 to 376 million pounds in 1984 as the fleet shifted its operations to the western Pacific and then declined to 259 million pounds in 1985 as some members of the fleet moved back to the eastern Pacific.

Economic and other factors influencing the fleet's location.—Although the above changes in harvesting costs are economic in nature, their underlying causes are actually changes in environmental conditions, and the resource's reactions to those changes. Other factors behind the relocation of the tuna fleet are more directly economic or political in nature, and include the depletion of the yellowfin resources in the eastern Pacific, the relocation of the principal buyers of frozen tuna—the U.S. canneries, and the reduced access to the waters of other nations, particularly along the Pacific

^{1/} Annual Report of the Inter-American Tropical Tuna Commission, 1984, Inter-American Tropical Tuna Commission, La Jolla, California, 1985, p. 20.

coast of Latin America. The depletion of the eastern Pacific yellowfin resources has been a long-term phenomenon, a result of many years of increasingly heavy levels of harvesting effort by U.S. and other nations' tuna fleets in the region. The harvesting effort has at times been sufficiently great as to result in reduced harvests. This depletion became most serious in the late 1970's and early 1980's, raising harvesting costs that were afforded only by raising ex-vessel tuna prices. Even with the rising prices, the relative return from eastern Pacific tuna was depressed. This caused several U.S. vessels to concentrate more heavily on central and western Pacific tuna, which were less heavily fished and thus more abundant, and were therefore harvested at lower unit cost. With the onset of the 1982-84 El Nino, this exodus from the eastern Pacific fishery increased, further relieving harvesting pressure on the resource. Following the dissipation of the El Nino, harvesters found that the tuna in the eastern Pacific had substantially recovered, and a number of vessels returned from the western Pacific.

The shifts in location of U.S. cannery capacity that has occurred in the 1980's is described in detail in the discussion on shifts in cannery locations, but it should be noted that the closure of a Hawaii cannery and all but one California cannery significantly reduced the market for frozen tuna for vessels fishing in the eastern Pacific. These vessels were then forced to sell much more of their catch to canneries in Puerto Rico and American Samoa, where most of the reduced California/Hawaii capacity was relocated. The resulting increased transportation costs, during a time of rising harvesting costs and declining prices, contributed to the decisions of many U.S. vessel operators to either move their operations to the western Pacific or cease active participation in the U.S. tuna fishery altogether.

The extension of fisheries jurisdictions to 200 miles by most coastal nations has affected U.S. tuna harvesters more than any other U.S. fishery. The problems such jurisdictions have created for U.S. tuna vessels fishing in waters claimed by other nations have been increased by the fact that the United States does not recognize such jurisdictions over tuna resources (see the discussion below of international legislation affecting the U.S. industry). The assertion of jurisdiction over tuna by other nations has either eliminated the availability of that resource to U.S. vessels or, when U.S. vessels have chosen to seek the tuna anyway, has resulted in several instances of seizures of U.S. vessels by the offended foreign governments. The threat of such seizure is often sufficient to cause the U.S. vessel to relocate its harvesting activities to less hostile areas. Since historically the nations bordering the eastern Pacific have had a greater enforcement capability than have the nations in the western Pacific, the extension of fisheries jurisdiction has likely had a greater direct effect on U.S. vessel operations in the eastern rather than the western Pacific.

Employment.—The average number of persons employed on a purse seiner is 18. In addition to the skipper, U.S. Coast Guard regulations require three certified men to be aboard: a Master, a Mate, and a Chief Engineer. Some vessels are also required to carry an Assistant Engineer. Besides the officers, each vessel carries a crew consisting of a cook, a deckboss, four or five speedboat drivers, three or four in the general deck crew, a skiff

driver, helicopter pilot(s), and sometimes a mast man. Crew members are divided into two groups—deck crew and engine-room crew. The deck crew work under the direction of the deckboss and are responsible for the maintenance of all running rigging—nets, ropes, cables, and chains. The engine-room crew works under the direction of the Chief Engineer or his assistant and are responsible for all machinery. The crews of the U.S.-flag vessels fishing in the eastern Pacific are composed largely of U.S. citizens. Usually, only the officers and key personnel (approximately eight men) are U.S. citizens on vessels fishing in the western Pacific, with the remainder of the crew composed largely of the natives from the islands in the western Pacific. ^{1/}

Wages are distributed generally in one of two systems. ^{2/} One system is called the share system, in which the excess of receipts after each trip's expenses are met goes to those with an investment in the catch according to some predetermined distribution. The remainder, termed net divisible income, is split between the boat's share and the crew's share. The skipper normally receives two to three shares, and officers and keymen (deckboss and mast man) receive between one and one-fourth and two shares. Regular fulltime fishermen start at one-fourth share and after four or five trips have usually reached one full share. These fishermen will remain at one full share for the rest of their careers unless they progress to keymen. This system is principally used in the eastern Pacific, where the crew is composed mainly of U.S. citizens.

Under the other system of wage distribution, which is known as the tonnage system, the crewmen are paid a predetermined dollar amount for each ton of fish brought aboard while they are signed on board. ^{3/} Fishermen with U.S. citizenship are generally paid on a basis that works out to be roughly equivalent to that under the share system. Aliens are paid considerably less than their U.S. counterparts. Skippers and boat owners generally feel that aliens are not as knowledgeable nor as experienced as U.S. fishermen. Tonnage workers do not pay a share of their earnings for trip expenses or for food as the share men do. This system is generally employed in the western Pacific, in which the crew are mainly aliens.

Capacity and capacity utilization.—It should be noted that capacity utilization rates for tuna boats are arbitrary at best. They would have to be based on the number of trips a boat was likely to make in a year, and that number in turn would depend on the distance a boat would have to go to find tuna and the length of time it would take to fill the boat's hold. Table 7 shows capacity utilization rates based upon an assumed average of 3.5 trips per year per vessel. The actual number of trips per year varies depending on the distance a boat has to go to find tuna and the length of time it takes to fill the boat's hold. Since tuna migrate and, in recent years, their abundance has shifted between the eastern Pacific and the western Pacific as a result of weather patterns and water temperature, the number of trips that can be taken and the time per trip has varied from year to year.

^{1/} Telephone conversation with Mr. August Felando, American Tunaboat Association, August 29, 1986.

^{2/} Orbach Michael K. Hunters, Seamen, and Entrepreneurs, Berkeley, Los Angeles, London, University of California Press, 1977, pp. 182-187.

^{3/} Ibid.

Figure 1 1/ presents another view of idle capacity of U.S. tuna purse seiners. In this figure, the period each U.S.-flag purse seiner (listed along the left column with its gross register tonnage) was idle is shown horizontally starting with the initial idle month on the left and the final idle month (if any) on the right end of the horizontal bar corresponding to the vessel's name. Along the right column is a brief description of the fate of the idle vessel. As examples, the Mary Lucille (1,100 gross tons) was idled in December 1980, then put back in service in June 1982 as a Korean-flag vessel; the El Cid (900 gross tons) was idled in February 1981 and as of June 1986 was not yet put back in service. Along the bottom of the figure is the number of idle vessels in each month during January 1980-June 1986.

Ownership structure.—Prior to the late 1970's, the harvesting and processing sectors of the U.S. tuna industry were fairly integrated. U.S. tuna processors became partners in boat ownership in an attempt to guarantee steady supplies of tuna through establishment of long-term contracts with U.S. flag vessels. This arrangement also provided a secure market for the catches of the fishermen. During the late 1970's, however, many foreign countries expanded their tuna fleets, often with large purse seiners. As a result, the supply of foreign raw tuna available to both U.S. and foreign processors increased significantly. U.S. processors, in an effort to take advantage of this new supply of low-cost tuna and become more competitive with foreign processors, began to divest themselves from their financial and contractual agreements with the U.S. fleet. As of a result, according to industry sources the number of U.S. purse seiners having financial ties with U.S. processors has declined significantly during 1979-85. Several vessels still owned by U.S. processors are presently tied up or for sale.

Barriers to entry and exit.—The most important barrier to entry into tuna harvesting is the cost of acquiring an efficient harvesting vessel. When new purse seiners were being ordered and built in the United States in the late 1970's and early 1980's, an asking price of \$5 million to \$10 million was not at all uncommon. 2/ This sum is far beyond the reach of the average individual investor, and even at recent depressed vessel prices, the capital cost of harvesting requires most vessel owners to have a co-owner (commonly a tuna processor) with sufficient capital to finance the investment. In the baitboat and troller fleets, the alternative of converting an existing vessel from other fisheries makes the capital cost for entering the tuna fishery less of a barrier than when the vessels have been designed exclusively for harvesting tuna.

Other than the need for large sums of capital, there are no other substantial barriers to entry into tuna harvesting, such as fishery permits or other barriers existing in many nontuna fisheries.

A particularly significant barrier preventing the exit of fishermen from tuna harvesting is the specialized technology required of tuna harvesting.

1/ The figures in this report are located in Appendix D.

2/ Recently, however, the financial difficulty experienced by much of the U.S. tuna purse seiner fleet has lowered the market value of a recently built vessel to far below its original construction cost—in some cases, according to some vessel owners, to less than half of the original cost.

Because the cost of conversion of a modern purse seiner to another type of fishing is quite high, a purse seiner owner may endure substantial financial losses before exiting the tuna fishery, since the losses incurred in exiting to another fishery can exceed those of remaining in the tuna fishery. The nontuna options for a large tuna purse seiner are few. Indeed, without a growing market among foreign tuna fishermen for modern vessels, many vessels formerly in the U.S. tuna fleet would probably have continued to fish as a U.S.-flag vessel, even at continued losses. Adding to this exit barrier from active fishing is the high fixed cost of owning a purse seiner, which can make it more profitable (more accurately, less costly) to harvest tuna even at a loss, since an owner of a tied-up vessel must still pay outstanding bank notes, insurance, and other fixed costs, and harvesting can bring in at least some revenue to cover such costs.

Interrelationship of tuna fishing with other types of fishing.—During 1979-85, there was a significant decline in the U.S. tuna fleet, as discussed earlier in the report. When a craft departs the tuna fishery, there are several situations that it may enter into. The craft may enter another fishery (such as groundfish or salmon), transfer flags (country of registration), be used for nonfishing purposes (such as cargo transport), or be scrapped. Also, a craft may temporarily exit the fishery by tying up, or may be sold to another operator who will remain in the fishery. The options for a craft leaving the tuna fishery are somewhat limited and vary mainly depending on the size of the craft. Opportunities for transferring to other fisheries are limited. Many craft in the albacore fleet, which are mainly smaller craft, are currently involved in other fisheries. For example, many albacore craft are active in the shark and swordfish driftnet fishery off southern California and in the salmon fishery off northern California. However, these fisheries are subject to limited entry with a fixed number of licenses, and the ability to transfer from the tuna fishery is extremely difficult if a permit for another fishery has not been previously obtained. These fisheries are also seasonal and may not support albacore craft fulltime. Other U.S. fisheries within the range of the albacore fleet are limited and also subject to limited entry, such as the Pacific rockfish fishery. Also, conversion to other gear types, such as gill nets and drag nets, would be prohibitively expensive for most albacore craft, as new gear, such as hydraulics, nets, net doors, and so forth, and craft modification would be necessary.

Many albacore craft in recent years were sold to operators that remained in the fishery. These craft were originally financed through the California Production Credit Association, which repossessed the craft after the original owners defaulted and auctioned them at much lower prices than were originally paid. Many of the craft then reentered the fishery, with an improved debt structure. Many other albacore craft that exited the fishery have been tied up indefinitely or have been scrapped. Others were sold to foreign interests, mainly in Venezuela, Mexico, and the Cayman Islands. Data are not available on the number of craft involved in each of these situations.

Large tuna craft, particularly the super seiners, are highly specialized for tuna harvesting. The large size fulfills high-seas fishing requirements

but is an economic handicap that limits the craft's fishery options if the craft cannot fish for tuna. The capital investment in a super seiner is large, which, in most cases, must be supported by a relatively high-value fishery such as tuna. Also, the gear employed by the large craft generally is inconvertible, and a relatively large minimum crew size is required to operate the craft.

The majority of purse seiners that exit the U.S. tuna fleet change flags and fish for tuna for another country. During 1979-85, the number of U.S. tuna seiners that transferred to foreign fleets totaled 44 (table 3). Occasional foreign flag transfers have long been a normal occurrence in the tuna industry. However, the frequency of such transfers has been exceptionally high in recent years, peaking at 11 in 1984. Another recent development has been the transfer of U.S. tuna seiners to other U.S. fisheries. During 1979-83, there was only one such transfer, in 1980; this was a relatively small seiner, with a 300-ton capacity. In 1984, two seiners transferred to other fisheries; these were larger craft, with an average capacity of 1,100 tons. Then, in 1985, six seiners, with an average capacity of just over 800 tons, transferred to other fisheries. According to industry sources, the eight craft that transferred during 1984-85 moved to Alaskan fisheries. Five of the craft were converted for use as tenders in the salmon fishery and three of the craft were converted into groundfish trawlers/processors. The conversions for groundfish trawling were much more costly than those for salmon tenders. In most of the conversions, the tuna seiners were sold for conversion at prices substantially below original cost. These craft would not be used for their new purpose at normal craft prices, as low market prices for the craft was a major contributing factor in making the conversions economically feasible.

According to industry sources, alternative uses of tuna craft other than for fishing or related activities are not feasible. For example, using tuna craft as cargo vessels would not be economical owing primarily to factors relating to specialized craft design (i.e., volume and shape of hold, hull design, engine type, and so forth).

Financial experience of the U.S. purse seine fleet

This section provides financial information obtained through questionnaires from owners of U.S.-flag tuna purse seiners, covering the period 1979-85. Because responses were received for different numbers of vessels in different years, and in no years is the entire fleet covered, simple trends in the aggregated items in the responses are meaningless and only information pertaining to average vessel performance will be presented.

Table 8 presents profit-and-loss information for the average U.S. purse seiner responding to the Commission questionnaires during 1979-85. 1/ Net

1/ The data presented for the 1979-85 period were obtained from two sets of questionnaires; the first set collected data covering 1979-83, which are those presented in the Commission's report on the 1984 section 201 investigation (Certain Canned Tuna Fish, USITC Publication No. 1558); the second set collected data covering 1984-85, which are presented together with the 1979-83 data in this report.

sales for the average vessel during the period fluctuated around an annual average of \$2.2 million, with an unusually low year in 1979 (\$1.4 million) and an unusually high year in 1984 (\$2.8 million). Total expenses generally increased during 1979-84, from \$1.5 million in 1979 to a peak of \$2.6 million in 1984, and remained approximately the same during 1984-85. The single largest cost item, the crew cost, generally followed the trend in net sales—not surprisingly since crew compensation is typically based on a share of the revenue received by the vessel. After nearly doubling during 1979-81, fuel cost fluctuated around \$465-547 thousand during 1981-85. There were significant relative increases in several other cost items during 1979-85, including license and transshipment fees, insurance, and helicopter-related expenses.

Net income before taxes earned by the average purse seiner was consistently negative during 1979-85, ranging from the largest annual loss of \$691,000 in 1982 to the smallest loss of \$43,000 in 1980. As a share of net sales, pre-tax net losses suffered by the average purse seiner ranged from 1.9 percent to 33.7 percent during 1979-85.

Cost structure of the U.S. purse seine fleet.—An analysis of the cost structure of the U.S. purse seine fleet is provided in table 9. Crew cost as a share of the nondepreciation cost structure generally declined between 1980 and 1985, from 33 percent in 1980 to 24 percent in 1985. Several vessel owners reported that because of the continual decline in fish prices, the vessels had been forced to reduce crew costs by carrying fewer U.S. crew and more aliens; in addition, for the vessels whose crews are compensated by a share of the proceeds from fish sales, declining ex-vessel tuna prices in recent years have reduced crew costs as a share of total costs. License and transshipment fees as a share of total cost increased substantially during 1979-85, from less than 1 percent in 1979-81 to 3 to 4 percent during 1982-85, reflecting the shift in the location of the fishery targeted by many vessels as well as the emergence of access fees for many nations' territorial waters. Repairs declined between 1979 and 1984, from 15 percent to 9 percent, before rising slightly to 10 percent in 1985. Vessel owners reported an inability to finance many less important repairs as the financial condition of their operations worsened. Insurance costs increased fairly steadily during 1980-85, from just under 5 percent in 1980 to over 10 percent in 1985, reflecting the rise in insurance premiums that has affected marine industries nationwide. All other expense items, excepting helicopter costs, remained approximately the same during the 1984-85 period.

The following tabulation, covering vessels reporting for the 1984-85 period, shows the vessels' original acquisition cost, capital expenditures made during 1984-85, average age of vessels employed by reporting organizations as well as average length of time owned.

<u>Aggregate vessels' original cost</u>	<u>Average cost per vessel</u>	<u>Aggregate capital expenditures 1984-1985</u>	<u>Average capital expenditures per vessel</u>	<u>Average age per vessel</u>	<u>Average number of years owned per vessel</u>
\$232,755,487	\$4,563,833	\$6,476,783	\$199,578	11.9	10.2

Shown below are the reporting vessels grouped by age:

<u>Vessel age</u>	<u>Number of vessels</u>	<u>Percentage of reporting vessels</u>
0 to 5 years.....	9	17.7
6 to 10 years.....	16	31.4
11 to 15 years.....	17	33.3
16 to 20 years.....	7	13.7
More than 20.....	<u>2</u>	<u>3.9</u>
	51	100.0

The majority of boat owners responding to the Commission's most recent questionnaire (covering 1984-85) reported high outstanding mortgages as well as large operating loans. Of the 51 vessels included in the 1984-85 income-and-loss data, only a few vessel owners reported no mortgage debt whatsoever. Eight responding tuna vessel owners reported bankruptcy during 1986; several others are on the edge of bankruptcy, having been in default on their mortgage payments anywhere from a few months to a couple of years. Several reporting vessels have been tied up since 1985 as a consequence of the economic infeasibility of continuing operations, and a number were eventually sold (in many cases significantly below original cost) to other firms this year.

Analysis of U.S. processors' fleet.—Condensed profit-and-loss data covering 1984-85 for 29 tuna purse seiners owned by U.S. processors are shown in table 10.

Net sales of raw tuna by the reporting vessels owned by U.S. processors declined from \$85.4 million in 1984 to \$75.2 million during 1985, or by 11.9 percent. Operating income before depreciation of the fleet significantly fell from \$1.9 million in 1984 to a loss of \$9.8 million during 1985. The vessels reported operating losses (after depreciation and salaried expenses) for 1984 and 1985 in the amount of \$7.7 million and \$19.1 million, respectively. The operating profit or loss (-) margins (before depreciation) for the processors were 2.3 percent in 1984 and -13.1 percent in 1985. After depreciation, the operating loss margins worsened to -9.0 percent in 1984 and -25.4 percent during 1985. During 1984, 16 of the 29 vessels showed operating losses, and 26 vessels reported losses during 1985.

The oceanographic phenomenon known as "El Nino" continued to disturb the eastern Pacific in 1984, limiting tuna catches in the traditional grounds. This led to the movement of increasing numbers of vessels to the newly developing grounds in the western Pacific, where catch rates were extraordinarily high. El Nino has now subsided and fishing has improved greatly in the eastern Pacific, although there are fewer boats operating in the area, in part as a result of regulations that are still in effect under the Marine Mammal Protection Act that established quotas for the incidental taking of marine mammals in the eastern Pacific Ocean. Many of the larger purse seiners owned by U.S. processors now operate mostly in the western

Pacific Ocean where the regulations are not in effect and where tuna are caught using methods that are not associated with marine mammals.

U.S. Tuna Processing

Methods of production

U.S. producers of canned tuna can use as inputs either domestically landed or imported frozen (or, rarely, fresh) tuna; most use both. As the fish are delivered to the plant, they are unloaded from the vessel's refrigerated wells and either placed in freezer storage at the plant or thawed with water for immediate processing. After thawing, the fish are then eviscerated by hand, sorted by size, and loaded on trays that are stacked on movable shelf racks, and wheeled into the first cooker, which can handle several thousand pounds of fish at a time. Usually, only fish of uniform size are placed in the cookers to maximize the yield by avoiding overcooking. After the first cooking (45 minutes to 3 hours, depending largely on the size and type of fish), the fish are loaded onto conveyor belts, which carry the fish to production workers in the cleaning area.

The cleaning area consists of several lines. In the most common system, these lines are referred to as "California" lines, where the same worker performs the entire cleaning process. The workers, called tuna cleaners, remove the head and skin, and separate the loin fillets from the skeleton. They then separate the white (or light) meat used for human consumption from the red meat used for pet food. The head, skin, bones, and viscera are converted into fish meal—used mostly as a protein supplement for poultry feed. Many tuna processors blend the various species of lightmeat tuna to obtain a uniform product. This is done to minimize differences in salt content, color, odor, and flavor for each can size and pack style.

One firm uses a cleaning system referred to as the "T table," or team table, to process albacore. In this method, the tuna is cleaned in three steps. First, one worker removes the head and skin. The second worker removes the red meat and takes the loins (the light or white meat of the tuna) from the bone. The third worker inspects the finished loins and does any necessary final cleaning (called "polishing") of the loins. This method is reported to produce higher quality loins, which is important when packing solid albacore.

After leaving the cleaning area, the meat is then packed with water or oil in hermetically sealed tin cans in an automated canning process. The canning process differs depending on the pack style and can size. For solid pack, whole, solid tuna loins move on a conveyor through a guide where they are sliced into sections and automatically placed into the cans. For chunk pack, solid loins, as well as chunks and flakes that result from cleaning the fish, move on a conveyor to a guillotine device that chops the tuna and is then centrifugally packed into the cans. The canned tuna is then subjected to a second cooking in a steam retort (cooking for 2 to 4 hours), which

sterilizes the meat. After this cooking, the cans of tuna are cooled, packed, and moved into the market distribution system or warehoused. Labelling of the cans may be done immediately or later when removed from storage.

Production, capacity, shipments, and inventories

Canned tuna in the United States is processed from domestic landings of frozen tuna and from imported fresh and frozen tuna. U.S. tuna processors engage in the production of canned tuna for human consumption and the production of by-products, primarily tuna-based pet food. Tuna loins are processed for human consumption, and the red meat (which is not considered by Americans to be suitable for human consumption) is processed into pet food. The head, skin, and bones of the frozen whole tuna used as raw materials by processors provide an important source of fish meal in the U.S. market, but such production plays a minor role in the world fish-meal market.

Canned tuna products for human consumption come in a wide variety of forms and types. Tuna for human consumption is classifiable by species as either whitemeat (exclusively albacore) or lightmeat (principally skipjack, yellowfin, bluefin, and bigeye). Albacore is the only species that can be classified as whitemeat tuna in the United States; all other species are classified as lightmeat and in U.S. processing facilities are typically mixed together by processors during packing. Canned tuna is packed in the following forms: (1) solid (a segment of the loin placed in the can with the cut ends parallel to the ends of the can); (2) chunk (a mixture of pieces of tuna in which the original muscle structure is retained, but not less than 50 percent of the weight of the pressed contents of a container is retained on a 1/2-inch mesh screen); (3) flake (a mixture of pieces of tuna as set forth above for chunk pack, but in which more than 50 percent of the weight of the pressed contents of a container will pass through a 1/2-inch mesh screen); or (4) grated (a mixture of discrete, uniform-sized particles of tuna that will pass through a 1/2-inch mesh screen, but which do not constitute a paste). Any of the aforementioned forms may be smoked.

Both whitemeat and lightmeat canned tuna are packed either in water or oil. Water pack accounted for 63 percent of total U.S. production of canned tuna in 1985. Canned tuna is generally processed in solid and chunk forms. Smaller quantities of flaked, grated, and smoked tuna meat are also processed into canned tuna. In 1985, chunk lightmeat tuna accounted for the bulk of U.S. canned tuna consumption. Canned tuna is marketed in both retail- and institutional-size containers with the bulk of U.S.-processed tuna in retail-size containers. Retail-size containers are marketed in two categories, processors' own brand and private (e.g., a retailer's) label. The size of the can varies according to the product form: 6 1/2-ounce for chunk and solid, and 6-ounce for grated tuna.

Canned tuna is distributed through U.S. market channels in any and all combinations of the above product forms. Each U.S. processor produces many, if not most of the different canned tuna products.

Production.—U.S. production of canned tuna as reported by responses to the Commission's 1984 section 201 questionnaire and the questionnaire used in this investigation ranged during 1979–85 between a relatively narrow range of 568.7 million pounds and 649.0 million pounds. Industry production in 1985 totaled 569.0 million pounds, down by 9 percent from the 1984 level of 628.4 million pounds.

U.S. canners are continuing to shift their production from tuna canned in oil to tuna canned in water or brine. U.S. production of canned tuna in water grew by 54 percent during 1979–83, but production of canned tuna in oil fell by 34 percent (table 11). The increase in the production of canned tuna in water started to occur in the early 1980's as a result, according to industry sources, of a shift in consumer preference to water-packed tuna rather than oil-packed tuna. The trend toward water-packed tuna continued in 1984 and 1985 with U.S. production of water packed accounting for 63 percent of U.S. canned tuna production in 1985.

Frozen tuna utilization: domestic versus imported.—In the production of canned tuna, U.S. processors can use either domestic or imported frozen tuna as raw material with nearly perfect substitutability, according to most officials of U.S. processing companies interviewed by the Commission's staff. The U.S. pack from domestic landings has generally increased since 1979, while the pack from imported fresh and frozen tuna has decreased. In 1979, the U.S. pack from domestic landings amounted to 35 percent of the total pack, and increased to 43 percent of the pack by 1984 (table 12). In 1985, the U.S. pack from domestic landings declined to 39 percent of the total pack.

Capacity and capacity utilization.—Domestic capacity to process tuna declined from a high of 990.3 million pounds in 1981 to 675.9 million pounds in 1985 for a net decline of 32 percent (table 11). The decline in domestic capacity during 1979–85 resulted from the closure of major processing facilities, cutbacks in employment, production slowdowns in other processing facilities and inventory buildup. Capacity utilization declined from 69.5 percent in 1979 to 57.8 percent in 1982 but then rose to 88.8 percent in 1985 (table 11). As a result of underutilized plants, capacity utilization declined during 1979–82, but as a number of plants closed, capacity utilization increased during 1983–85.

Shipments 1/.—Data on shipments of canned tuna by U.S. processors are presented in table 13. The reported volume of shipments of canned tuna by U.S. processors reached a 7-year peak of 653.5 million pounds in 1985, an

1/ Includes canned tuna imported by some processors. Such imports are almost entirely imports processed abroad under license with the U.S. processors, typically for distribution under the processors' own labels. According to company officials, canned tuna imported by them are warehoused alongside domestic production, and in the process the product loses its national identity in the companies' record keeping. The form in which the companies' shipments data are kept precludes them from ascertaining precisely what portion of shipments in a given time period are from domestic production or imported supplies.

increase of 25.9 million pounds, or 4 percent, over the previous year's level, and 55.1 million pounds (9 percent) over the 1979-85 low point of 598.4 million pounds in 1982. One of the principal reasons for this increase, according to processing industry sources, is the increased importation of canned tuna by some U.S. processors during 1979-85. The reported value of processors' shipments peaked at \$1.2 billion in 1981, a period of record-high wholesale prices, and subsequently declined steadily to a 7-year low of \$962 million in 1985, following a steady decline in average unit value from a peak of \$1.96 per pound in 1981 to \$1.47 per pound in 1985, a decline of 25 percent during the 4-year period.

Distribution of shipments of U.S. processed canned tuna in retail-size containers for selected categories and total shipments of canned tuna in institutional-size containers are shown in table 14. Shipments of tuna in retail-size containers have accounted for the majority of shipments. In the retail sector, U.S. shipments of the processors' own brands decreased irregularly from 444.5 million pounds in 1979 to 427.9 million pounds in 1982, then rebounded to 461.3 million pounds in 1983. Since the Commission's 1984 section 201 investigation, shipments of the processors' own brands has risen from 488.8 million pounds in 1984 to 514.5 million pounds in 1985.

Shipments of private-label tuna during 1979-85 showed a generally decreasing trend from a peak of 145.0 million pounds in 1979 to a low of 107.0 million pounds in 1984, before recovering only slightly in 1985 to 110.2 million pounds. These trends support domestic processors claims that their sales in the private-label market have suffered in recent years, while the increase in shipments of the processors' own brands can be explained in part by increased imports of canned tuna by the processors, particularly during 1984-85. Shipments of institutional-sized containers generally declined between 1980, when such shipments totaled 43.3 million pounds, and 1985, when shipments amounted to only 28.8 million pounds, a decline of one-third during the 5-year period. U.S. processors reported increased competition from imports in the institutional trade, which might explain the declining domestic shipments in that market.

Large processors were the principal marketers of nationally advertised brands, and the smaller processors relied on private-label and institutional markets. The share of total shipments accounted for by the processors' own brands increased from 71 percent in 1979 to 79 percent in 1985. The market share of the other two categories, private-label pack and institutional pack, declined reportedly because of import competition.

Inventories.—Data on U.S. processors' inventories of canned tuna are presented in table 15. With the exception of 1981, inventories of canned tuna of all types remained quite stable throughout 1979-85, ranging between a low of 180 million pounds in 1984 and a high of 209 million pounds in 1980. In 1981, however, inventories suddenly jumped to 246 million pounds, and just as suddenly dropped back the following year to 199 million pounds. This jump in inventories was explained by industry sources as resulting from adverse consumer reaction to rising prices of canned tuna and the consequent reduction in shipments of canned tuna. As a proportion of shipments, inventories

generally ranged around 30 percent during 1979-85; again, an exception was 1981, when the inventory/shipments ratio climbed to just over 40 percent.

The proportion of annual shipments held in inventory is similar for tuna canned in water and in oil, at about 30 percent. Generally, proportionately more whitemeat tuna is held in inventory compared with its share of shipments; in 1985, whitemeat inventories were kept at 32 percent and 34 percent, respectively, of shipments of water- and oil-packed tuna, although these ratios have been as high as 58 percent and 81 percent, respectively, in 1982. This compares with lightmeat, inventories of which were kept at a significantly lower proportion of industry shipments throughout most of 1979-85.

Structure of the U.S. tuna processing sector

Number and location of producers.—Six U.S. processors of canned tuna currently account for the vast majority of U.S. production. ^{1/} The names of these processors and the locations of their processing facilities are shown in table 16. The three largest firms, together accounting for 80 percent of domestic production of canned tuna in 1985, are Star-Kist Foods, Van Camp Seafood, and Bumble Bee Seafood. The following are brief descriptions of these three companies:

Star-Kist Foods.—(Star-Kist) is the largest U.S. tuna processor, with over one-third by volume of the domestic market, ^{2/} and with substantial interests in tuna markets worldwide. Star-Kist was founded in 1917, as a processor of a variety of seafoods. Since 1963, Star-Kist has been a wholly owned subsidiary of H.J. Heinz Company (Heinz), a Pennsylvania-based processed-food conglomerate. Heinz also owns an Australian tuna processor, Heinz-Australia, which produces primarily for the Australian market and, according to sources in the Australian market, accounts for the majority of that market. Approximately 20 percent of the total worldwide sales of Heinz during 1982-85 was accounted for by tuna and tuna-related products, the single largest component of the company's sales. ^{3/} In addition to the "Star-Kist" brand of canned tuna, Star-Kist also produces the "9-Lives" brand of tuna-based and other pet foods.

Through wholly owned subsidiaries, Star-Kist operates two U.S. tuna processing plants, whose locations are shown in table 16. In addition, Star-Kist operates tuna processing plants and/or frozen tuna collection stations in Canada, Ghana, France, and other foreign locations, and nontuna (pet food) factories in locations around the United States. In 1984, "in response to continued high costs and the Government's failure to provide

^{1/} There are some small processors of canned tuna, producing insignificant amounts of canned tuna on an irregular schedule. According to the National Marine Fisheries Service, these small processors together account for less than 1 percent of total U.S. production of canned tuna.

^{2/} H.J. Heinz Company, 1985 Annual Report, p. 10.

^{3/} H.J. Heinz Company, Form 10-K filed with the Securities and Exchange Commission for fiscal years 1984 and 1985, pp. 2, 6.

relief from low-priced canned tuna imports," 1/ Star-Kist closed its Terminal Island California tuna-processing plant. Concurrently, capacity was increased by 22 percent at the company's Puerto Rico plant, reportedly making it the largest tuna processing facility in the world. At the company's American Samoa plant, Star-Kist increased capacity by about 40 percent, reportedly making that facility the second largest in the world. 2/

Van Camp Seafood.—(Van Camp) is the second largest U.S. tuna processor. Van Camp is a division of Ralston Purina Company, a Missouri-based producer of processed foods, pet food, and livestock and poultry feeds. Production of seafoods by Ralston Purina, of which Van Camp accounts for substantially all, accounts for approximately 5 percent of total sales by Ralston Purina. 3/ Van Camp produces canned tuna and salmon under the "Chicken of the Sea" label.

Van Camp operates two tuna processing plants, whose locations are shown in table 16. No other tuna processing facilities are operated by Van Camp or by Ralston Purina. In July 1984, Van Camp closed its San Diego tuna-processing plant, said to be the most modern in the world, 4/ and transferred its capacity to the company's offshore locations. At the end of fiscal year 1985, Van Camp had equity interests in 15 tuna purse seiners, 8 of which were wholly owned and 1 was leased. 5/

Bumble Bee Seafoods.—(Bumble Bee) is the third largest U.S. tuna processor, with reported annual sales "in the \$250 million realm." 6/ Bumble Bee began processing fish in 1899 and has been in operation as a tuna processor since 1937, when it started canning albacore in Oregon. It has since been best known as a producer of canned albacore (and salmon), although in the late 1970's and early 1980's, as an operating division of Castle & Cooke, Inc., the firm expanded its lightmeat tuna business. In June 1985, the management of Bumble Bee arranged a leveraged buyout of most of the firm's assets, including the trademark, from Castle & Cooke, and began operations as an independent company. Bumble Bee distributes canned tuna in the United States under the "Bumble Bee" label, from its own production as well as under contract with other U.S. canneries and foreign producers.

Bumble Bee currently operates a single tuna-processing plant in Puerto Rico (table 16). In 1982, the firm closed its San Diego tuna plant, a facility it had purchased in 1979. In 1982, Bumble Bee sold all of its 12 tuna vessels, and currently relies exclusively on short-term contracts with U.S. vessels or foreign supplies of frozen tuna to operate its cannery.

1/ 1985 Annual Report, op. cit., p. 17.

2/ Ibid.

3/ Ralston Purina Company, 1985 Annual Report to Shareholders, p. 20.

4/ Testimony of Pete Wilson, U.S. Senator for California, and Duncan Hunter, U.S. Representative for California, before the United States International Trade Commission, June 5, 1984, in investigation No. TA-201-53, Certain Canned Tuna Fish. Hearing transcript, pp. 8, 22.

5/ Ralston Purina Company, Form 10-K filed with the Securities and Exchange Commission for fiscal year 1985, p. 3.

6/ "Bumble Bee plans expansions," The San Diego Union, June 26, 1986, p. E-1.

The period 1979-85 saw a major shift of most of the tuna canning industry from the continental United States (mainly southern California) to offshore facilities in American Samoa and Puerto Rico. Table 17 shows the number of tuna canneries in the continental United States, Hawaii, Puerto Rico, and American Samoa during 1979-85.

During 1979-83, 11 tuna processing plants located in the continental United States closed down. By 1983, there were only three tuna processing plants in the continental United States, one in Hawaii, two in American Samoa, and five in Puerto Rico. As of 1985, only one processing plant remained in the continental United States, the Pan-Pacific Fisheries division of C.H.B. Foods, Inc. Although the number of plants in American Samoa and Puerto Rico remained unchanged during 1979-85, the offshore canneries produced an increasing share of U.S. canned tuna production because of decreased continental U.S. production, increased offshore plant capacity, and the development of the western Pacific fishing grounds, which contributed to a rapidly growing worldwide supply of tuna.

Employment.—Industrywide employment in the United States, hours worked, and wage data for all U.S. cannery locations for 1979-85 are presented in table 18. Average employment and total hours worked by production and related workers producing canned tuna at all reporting establishments declined irregularly between 1979 and 1983, but total wages increased. Since the section 201 investigation, average employment decreased from 13,397 workers in 1983, to 12,887 workers in 1985. Hours worked in canned tuna production declined from 24.0 million in 1983 to 21.1 million in 1985. Total wages paid to production and related workers producing canned tuna increased during 1979-83 from \$110.7 million in 1979 to \$131.8 million in 1983. Since the Commission's section 201 report, total wages paid declined to \$101.7 million in 1985. Fringe benefits provided to production and related workers increased from \$24.2 million in 1979 to \$29.1 million in 1983, but then declined to \$13.6 million in 1985.

Although employment and total hours worked in canned tuna production are proprietary in nature and so cannot be given by location, a general discussion regarding the trends of these locations can be given. Employment in the continental United States declined from 1979 to 1985 following the closing of all but one plant location. Employment in tuna-processing operations in American Samoa, however, increased throughout this period owing to the transfer of processing capacity from the U.S. mainland. Employment in tuna processing is higher in Puerto Rico than in American Samoa or California, but employment generally decreased there during 1979-82. However, employment levels in Puerto Rico increased during 1983-85 as a result of expansion of the physical capacity of the island's tuna processors. Trends in total hours worked in the continental United States, Puerto Rico, and American Samoa generally paralleled trends in average employment in those areas during 1979-85.

Average hourly wages in all U.S. locations increased steadily from 1979 through 1983, although actual wage levels and the extent of the increase varied widely for different locations. The average hourly wage rate per

worker for all U.S. locations, as indicated by the data in table 18, increased by 27 percent, from \$4.32 per hour in 1979 to \$5.50 per hour in 1983. Since the Commission's section 201 report, the average hourly wage rate per worker decreased from \$5.33 in 1984 to \$4.82 in 1985, or by 10 percent. The hourly wage in the continental United States has consistently been far higher than wages in either Puerto Rico or American Samoa.

Data presented in table 18 and 11 also indicate that productivity in tuna-canning operations, as measured by pounds of tuna processed per employee hour, increased irregularly by 9 percent between 1979 and 1983. The combined output per worker hour at all locations rose from 22.7 pounds in 1979 to 26.4 pounds in 1981 and then declined during the next 2 years to 24.8 pounds in 1983. Since the Commission's section 201 investigation, the combined output per worker hour at all locations reached 28.8 pounds in 1984, but fell to 26.9 pounds in 1985.

Research and development expenditures.—Industry sources interviewed by the Commission's staff indicate that no major changes have taken place in the production process for canning tuna for some time, but rather that small improvements are constantly being effected. A recent example was the installation of machinery to shrink wrap the final cases of tuna. Two cardboard flats, each containing 24 cans, are stacked and the sides are shrink wrapped, thus replacing the traditional cardboard box case. Also, fairly recently, a number of processors shifted to two-piece cans in which to pack the processed tuna; however, some still use three-piece cans owing to the lack of capital to invest in new can-producing machinery. Although research has been conducted on automating certain parts of the tuna packing process, it is not economically feasible to mechanize much further at this time. For example, mechanizing the movement of the fish through the plant as well as cleaning the fish would result in significant savings of labor. However, this does not make much economic sense at this time inasmuch as labor is a relatively small part of the cost of producing canned tuna (fresh or frozen tuna and cans are the major items) and current labor rates are more advantageous than the capital investment that would be required to automate under the current business environment. However, automation may become economical in the future under a different environment, particularly if labor rates rise significantly.

Horizontal/vertical integration.—The relevance of horizontal concentration and vertical integration to the competitiveness of U.S. tuna processors lies in the effects such integration can have on production, marketing, or other costs. If such costs are reduced through integration, domestic processors can compete more effectively with foreign producers.

Horizontal concentration of domestic production and shipments is quite high in U.S. tuna processing, as seen from the data in table 19. Two measures of concentration are shown, the three-firm concentration ratio (the only concentration ratio that can be used without disclosing proprietary information of the six firms in the industry), and the so-called Herfindahl index, which takes into account the shares held by all firms in the market, not just the larger ones.

Increased horizontal concentration, the merger of firms in U.S. tuna processing was not significant during 1979-85. Five of the six firms that made up the U.S. industry in 1985 comprised the industry in 1979; a sixth entered the industry in 1981. With the few exceptions noted, the number and location of domestic plants operated by these firms were the same in 1985 as in 1979. With respect to processing economies often achieved through horizontal merger of firms or by consolidation of the processing capacity of multiple plants into one facility, no information has been obtained by the Commission to indicate that such cost savings are possible in tuna processing.

The procurement cost of raw tuna inputs may also be reduced through the increased bargaining power achievable from horizontal concentration. This issue is currently the subject of private antitrust action 1/, and will not be further discussed in this report.

Vertical integration is the merger of firms at different processing/marketing stages, such as a supplier of raw material merging with its customer for the raw material. Vertical integration by U.S. tuna processors is exclusively backward into harvesting; no forward integration into retailing has been carried out. Instead, marketing of canned tuna is generally done through independent brokers or distributors at the wholesale level.

While for many years prior to the 1980's U.S. tuna processors had substantial equity investments in tuna-harvesting operations, the trend since 1979 has definitely been one of divestiture of such harvesting operations by

1/ A Complaint for Damages and Injunctive Relief, filed by Ed Gann, et al., vs. Star-Kist Foods, Inc., Ralston Purina, Inc., and Castle & Cooke, Inc., on Feb. 14, 1985 in United States District Court for the Southern District of California. The 24 original plaintiffs, representing 54 tuna purse seiners—a majority of the U.S.-flag tuna fleet, have alleged that defendants and other companies and individuals not named in the complaint engaged in a variety of acts in violation of sections 1 and 2 of the Sherman Act and section 3 of the Clayton Act. Plaintiffs are seeking treble relief for alleged damages totaling \$432 million, or almost \$1.3 billion. The alleged acts include a continuing combination and conspiracy in unreasonable restraint of interstate and foreign trade and commerce in tuna and canned tuna, conspiracy to monopolize, attempted monopolization, and monopolization of interstate trade and commerce in tuna and canned tuna. In addition, defendants are alleged to have entered into unlawful tie-in contracts, exclusive dealing contracts, and requirement contracts. On May 13, 1985, the District Court dismissed, with leave to amend, the allegations relating to entering into unlawful tie-in contracts, exclusive dealing contracts, and requirement contracts. On June 6, 1985, plaintiffs filed an amended complaint restating the above allegations except those concerning alleged violations of section 3 of the Clayton Act and violations with respect to canned tuna.

A separate complaint, filed on May 17, 1985, in the above court by 31 crew members of U.S. tuna fishing vessels alleges similar violations of sections 1 and 2 of the Sherman Act and section 3 of the Clayton Act and tortious interference with prospective economic advantage in violation of California law. Antitrust damages of \$40 million are alleged, which if proven would be trebled to \$120 million; in addition, the alleged damages from violations of California law total \$190 million.

tuna processors. As noted above, the number of vessels in which U.S. processors have financial interest decreased significantly during 1979-85.

One of the principal reasons for the exit of U.S. tuna processors from tuna harvesting during 1979-85 was the high carrying cost of the investment in such vessels, many of which were financed during the late 1970's, a period of historically high nominal interest rates. This fixed expense became more of a problem when raw tuna prices on world spot markets began declining in the early 1980's. As a result, it became more economical for vertically integrated processors to let independent tuna vessel owners bear the financial risk of operating the vessels. Thus, the processors began selling off their vessels and getting out of long-term contracts with other vessels. For raw tuna supplies, processors turned to shorter term contracts as well as the spot market, which was growing as world tuna harvests increased above the levels of the 1970's.

Extent of diversification.—Diversification into other businesses provides firms insulation from business cycles and other fluctuations in their original business, since most markets do not typically experience identical cycles of boom and bust. By not "putting all its eggs in one basket," a diversified firm is also better able to compete effectively in any single line of business, in that it can absorb extended losses in one line of business with profits from another. A single-line firm is less able to survive extended weak markets or periods of high costs. In addition, since a diversified firm is a larger corporate entity than any one of its single-line divisions, the availability of capital is greater for a diversified firm than a single-line, smaller firm.

The firms involved in U.S. tuna processing are not, by and large, diversified in the sense that they have expanded into other, unrelated lines of business. Rather, most have themselves been absorbed as an operating division into a larger conglomerate. These conglomerates are in most cases processors and merchants of consumer products, mostly foods. The following tabulation, derived from company annual reports and forms 10-K, shows the six U.S. tuna processors and their parent companies:

<u>U.S. tuna processor</u>	<u>Parent company</u>	<u>Parent's 1985 sales</u> (million dollars)
Bumble Bee Seafoods <u>1/</u>	Castle & Cooke, Inc.	\$1,601
Caribe Tuna, Inc.	Mitsubishi Foods (MC), Inc.	<u>3/</u>
Neptune Packing, Inc.	Mitsui and Company (USA), Inc.	<u>3/</u>
Pan-Pacific Fisheries	C.H.B. Foods, Inc. <u>2/</u>	290 (1984)
Star-Kist Foods, Inc.	H.J. Heinz Co.	4,048
Van Camp Seafood, Inc.	Ralston Purina Co.	5,864

1/ Divested in June 1985, and currently an independent corporation.

2/ Changed ownership and renamed to California Home Brands, Inc., in 1985.

3/ Not available.

The role a tuna processor plays in the parent corporation is similar among companies. Officials of most of the firms stated that their firms operate independently of their parents, usually as part of a "profit-center" strategy of the parent. The significance of the processor within the parent's operations appears to differ, however. In the case of H.J. Heinz Company, tuna and tuna-related products (which includes Star-Kist's U.S. and foreign operations and certain other foreign subsidiaries of Heinz) accounted for about 20 percent of Heinz's sales during 1983-85, the single largest product line of the company. 1/ As a share of Ralston Purina's combined sales during 1983-85, seafood, (most of which is Van Camp) contributed an average of 5 percent, making it one of Ralston Purina's less important product lines. 2/ As a share of C.H.B. Foods's combined sales in 1984, fish products (of which Pan-Pacific accounts for the bulk) contributed 30 percent, making it C.H.B.'s second largest product line, behind pet food. 3/ In addition, the contribution to parent company profits from canned tuna differs across firms, with some tuna processors contributing more than their share of profits in relation to the parent's sales, and other contributing substantially less.

Shifts in cannery locations

For several decades prior to the 1980's, southern California was the principal processing center for the U.S. tuna industry. The U.S. tuna harvesters located there to be accessible to the eastern tropical Pacific Ocean, a major tuna fishery, and processors naturally located there to be close to raw tuna supplies. During the 1950's, U.S. tuna companies began to shift some of their production facilities to offshore sites in Puerto Rico and American Samoa. During 1979-85, most U.S. tuna processors closed their continental U.S. operations, with only one processing plant still operating in California by 1985. Several of the U.S. tuna processors have increased their production capacity at offshore sites.

Factors causing location shifts.—Greater resource availability, lower labor costs, and tax benefits in offshore locations were the major factors contributing to the further shift of the U.S. tuna canning industry from the continental United States to the offshore facilities in Puerto Rico and American Samoa.

Resource availability—Puerto Rico became a desirable location because of its proximity to the fishing areas of the South Atlantic. The decline in tuna catches in the eastern Pacific encouraged the development of fisheries in the western Pacific thus making American Samoa an ideal canning location. The increase in canning capacity at these offshore facilities coincided with the reduction of capacity on the U.S. mainland.

1/ Form 10-K filed by H.J. Heinz Company with the Securities and Exchange Commission, fiscal year 1985, p. 2.

2/ Ralston Purina Company, 1985 Annual Report to Shareholders, p. 20.

3/ C.H.B. Annual Report, 1984, p. 12.

Labor cost—Although labor is a relatively small item in the overall cost of producing a can of tuna, 1/ certain important stages of the tuna canning process are highly labor intensive. While some mechanization has occurred, mainly in the packing process, the fish cleaning operations are still done manually. However, the advantage of lower labor cost in American Samoa and Puerto Rico is somewhat offset by the cost of delivering the canned tuna product from the offshore facilities to the mainland U.S. market.

Tax benefits and other incentives—The U.S. tuna industry enjoys various Federal and local tax benefits and other financial incentives by virtue of being located in Puerto Rico and American Samoa, which are U.S. possessions. Pursuant to section 936 of the Internal Revenue Act (26 U.S.C. s 936), a domestic corporation is allowed a tax credit equal to the taxable income from the active conduct of a trade or business within a possession of the United States. 2/ Thus, income derived from operations in Puerto Rico and American Samoa is effectively exempted from U.S. corporate income tax.

In addition, both Puerto Rico and American Samoa provide substantial exemptions from their own tax laws to tuna facilities. 3/ The Tax Exemption Board of the Government of American Samoa may provide temporary income tax exemption to activities that will further the economic development of the Territory. The two U.S. canneries located in American Samoa are among the firms with such exempt status as of November 1985. In Puerto Rico, tuna canneries and commercial fishing operations that supply them qualify for tax exemptions of up to 90 percent of "industrial development income" for 10 to 25 years, depending on industry location. 4/ The amount of the exemption decreases over time, from 90 percent during the first 5 years to 55 percent during years 16 to 20. The exemptions are also extendable for 10 years at slightly lower rates.

American Samoa also is exempt from the so-called Nicholson Act (46 U.S.C. 251) which prohibits foreign vessels from landing fish directly in U.S. ports, while Puerto Rico has no such exemption.

1/ See the discussion on cost of production in tuna processing later in the report.

2/ Sec. 936 applies to Guam, American Samoa, and Puerto Rico. Sec. 936 is derived from predecessor provisions which, in turn, are derived from sec. 21 of the China Trade Act, 1922 (42 Stat. 849). The purpose of this provision was to enable U.S. corporations doing business in China to compete with local British corporations that enjoyed a similar exemption from British taxes.

3/ Tax rates imposed by American Samoa against corporate income are the same as the U.S. Government's tax rates imposed on corporate income, or 46 percent prior to 1986. The tax rate imposed by Puerto Rico in 1985 was 20 percent of applicable corporate income.

4/ Puerto Rico's Industrial Incentive act of 1978, Sec. 255a(a)(80, (d)(2) and (e)(31).

Exports

Historically, U.S. exports of canned tuna have been nil or negligible owing mainly to the ability of the U.S. market, the largest canned tuna market in the world, to absorb the entire output of the domestic canning industry. Also, foreign nations' import barriers and transportation costs have limited the competitiveness of U.S. producers in world markets. Further discussion of export levels and trends for canned tuna is contained in the section on world tuna trade later in the report.

Financial experience of U.S. tuna processors

This section of the report provides information on the financial experience of U.S. tuna processors during January 1979-March 1986. This information was obtained principally by the use of questionnaires sent to the firms, with additional information from other public sources and Commission staff discussions with company officials. 1/ Six U.S. processors of canned tuna, accounting for substantially all U.S. production of canned tuna during 1979-86, 2/ provided separate financial data on their operations producing canned tuna for human consumption. 3/ They also provided data on the overall operations of their establishments in which canned tuna is produced.

Two points should be noted about the firms and their questionnaire responses. First, based on aggregate sales data, canned tuna for human consumption accounted for at least 90 percent of overall establishment sales during the period under investigation. Four of the six firms reported sales of tuna-based pet food to be less than 10 percent of their establishment sales. One processor reported that approximately 33 percent of its establishment sales were attributable to tuna-based pet food. Another firm was not able to provide financial data on its pet food operations, which it estimated to be less than 15 percent of overall establishment sales. Fishmeal is derived from the remaining scraps of tuna, and since it is an insignificant aspect of tuna processing (an average of less than 1 percent of establishment sales), fishmeal was excluded from the discussion in this section of the report.

1/ The data presented for the 1979-85 period was obtained from two sets of questionnaires; the first set collected data covering 1979-83, which are those presented in the Commission's report on the 1984 section 201 investigation (Certain Canned Tuna Fish, USITC Publication No. 1558); the second set collected data covering 1984-85 and interim periods ending Mar. 31, 1985, and Mar. 31, 1986, which are presented together with the 1979-83 data in this report.

2/ One firm, Mitsubishi Foods (MC), Inc., began tuna processing operations in late 1981.

3/ Questionnaires covering 1984-85 and interim periods ending Mar. 31, 1985, and Mar. 31, 1986, were actually received from 7 firms, including one each from Castle & Cooke, Inc., which owned Bumble Bee Seafoods as a subsidiary for several years prior to its divestiture in June 1985, and from Bumble Bee Seafoods, Inc., an independent corporation which began operations in June 1985.

Second, most of the firms operate on the basis of fiscal years ending in months other than December, and only two of the six firms have similar fiscal years. It was not considered feasible for the firms to provide data on the basis of a common accounting year, and it was not possible for the Commission's staff to consolidate the data obtained on the basis of uniform time periods. Data were consolidated by taking each firm's fiscal year ending within 6 months prior to or after December of, say, 1985 and aggregating all such years as the industry-wide 1985 reporting year. For each of the interim periods in 1985 and 1986, both ending in March, different companies reported different time periods depending on the start of their fiscal years: the two interim periods are comparable, however, since they both cover identical time periods.

Overall establishment operations 1/.—Aggregate financial data for the six firms are presented in table 20. Combined net sales 2/ (consisting primarily of canned tuna, pet food, and fish meal) totaled \$1.16 billion in 1985, a decrease of 2.2 percent from the 1984 level of \$1.19 billion, and an 11-percent decline from the 1979-85 peak of \$1.3 billion in 1981. The 4-year decline in net sales reversed itself in early 1986 as net sales increased to \$924 million in interim 1986 from \$902 million in interim 1985.

The cost of goods sold followed a similar trend through 1985, declining from a 1979-85 peak of \$1.11 billion in 1981 to \$962 million in 1985; cost of goods sold continued to decline from \$733 million in interim 1985 to \$730 million in interim 1986. Gross profit during 1979-85 fluctuated between a low of \$131 million in 1982 and a high of \$201 million in 1985. Gross profit totaled \$194 million in interim 1986, an increase of 14 percent over the interim 1985 level of \$169 million.

Net income before income taxes from the six firms' combined operations declined from \$62 million, or 5.5 percent of net sales, in 1980, to a net loss of \$174 million, equivalent to -14.5 percent of net sales, in 1982. The firms' net income before taxes improved in the following years, reaching \$63 million, or 5.4 percent of net sales, in 1985. The improvement continued between the interim periods of 1985 and 1986, as pretax net income increased from \$70 million in interim 1985 to \$80 million in interim 1986; and as a percent of net sales, from 7.7 percent to 8.7 percent during the same period.

In their overall operations covering establishments in which canned tuna is produced, the number of firms reporting operating losses increased from two out of five firms in 1979 to five out of six in 1982, then declined to one out of six in 1984. Two firms out of six reported such losses in 1985. Between the interim periods of 1985 and 1986, the number of firms reporting such losses declined from two to one.

1/ This section covers overall establishment operations only briefly. Because the principal business of the firms—production of canned tuna for human consumption—constitutes such a large proportion of establishment operations, a more detailed discussion is contained in the next section.

2/ Gross sales less intracompany and intercompany transfers.

Canned tuna (for human consumption) operations.—Aggregate financial data covering canned tuna operations of the six firms are presented in table 21. Annual net sales of canned tuna totaled \$1.04 billion in 1985, and the following related costs were incurred during this period: cost of goods sold, \$867 million (83.1 percent), of which the bulk consisted of frozen tuna, direct labor, and other raw material such as tin cans; general, selling, and administrative expenses, \$101 million (9.7 percent); interest expense, \$5.4 million (0.5 percent); other expenses, \$11.9 million (1.1 percent); and net income before income taxes, \$57.9 million (5.6 percent). Of the six firms, two reported operating losses in 1985.

Several interrelated trends during the 1979-85 period are apparent from the data in table 21. Net sales increased from a period low of \$961 million in 1979 to a peak of \$1.22 billion in 1981 before declining steadily to \$1.04 billion in 1985. This downward trend reversed itself between the interim periods of 1985 and 1986 as sales increased from \$803 million in interim 1985 to \$829 million in interim 1986. The cost of goods sold followed a similar trend, increasing from \$833 million in 1979 to \$1.04 billion in 1981 before declining to \$867 million in 1985. Cost of goods sold began increasing in early 1986, rising from \$656 million to \$657 million between interim 1985 and interim 1986.

Net sales declined from 1981 to 1985, although cost of goods sold declined faster, from 85 percent of net sales in 1981 and almost 90 percent in 1982 down to 83 percent in 1985. As a result, gross profit increased as a share of net sales, from 15 percent in 1981 to 17 percent in 1985. Between interim 1985 and interim 1986, as noted, net sales increased by \$26 million, while cost of goods sold increased only slightly; as a result, gross profit increased from 18 percent of net sales in interim 1985 to 21 percent in interim 1986.

Other expenses, including interest and various costs incurred in shutdowns of processing plants in California by several firms, increased significantly during 1981-84. Largely as a result, net income in the industry plummeted from \$54 million in 1980 to a loss of \$62 million in 1982 and a loss of \$50 million in 1983. In 1982, four of the six firms reported operating losses, and two firms reported operating losses in 1983. Net losses were kept low in 1984, amounting to only \$4.6 million, largely as a result of a decline in the cost of goods sold. Net income improved significantly in 1985, rising to \$58 million and still further in interim 1986, to \$75 million compared with \$64 million in interim 1985. The improved net income picture was due in part to continued declines in the share of net sales attributable to cost of goods sold, as well as to reduced "other" expenses, such as the costs incurred in plant closures and fishing vessel divestitures, which were quite high in previous years.

Tuna-based pet food operations.—Financial data concerning tuna-based pet food operations were requested of the six U.S. tuna processors for the 1984 and 1985 fiscal years and interim 1985 and 1986. Aggregate financial data for five ^{1/} U.S. processors are presented in table 22. Combined net sales in 1984

^{1/} One firm was not able to provide income-and-loss data relating to its pet food operations.

fell from \$119.5 million to \$112.1 million during 1985, or by 6.2 percent. During the interim periods, however, aggregate sales rose from \$91.9 million in interim 1985 to \$92.8 million during interim 1986, an increase of one percent. Operating income for the five firms declined from \$9.4 million in 1984 to \$7.5 million in 1985, or by 20.2 percent. However, for the interim periods operating income rose to \$8.1 million during the interim period ending March 31, 1986, an increase of 8.3 percent over the \$7.5 million operating income reported during the interim period ending March 31, 1985.

Depreciation and amortization expense reported during 1985 declined to \$532,000, down 28.3 percent over \$742,000 reported during 1984. Similarly, depreciation and amortization expense fell from \$424,000 during interim 1985 to \$358,000 during interim 1986, or by 15.6 percent. This decline is the result of processors shutting down some of their canneries and selling off many of their tuna-vessel interests to other firms (mostly South American).

The operating profit margins for the five firms were 7.8 percent and 6.7 percent, respectively, for the 1984-85 period, and were 8.1 percent and 8.7 percent, respectively, during interim 1985 and interim 1986. None of the processors incurred an operating loss during 1984; one processor incurred an operating loss during 1985 as well as during the interim period ending March 31, 1985, and three firms reported operating losses in the interim period ending March 31, 1986.

In comparing pet-food operations with the canned tuna fish (for human consumption) operations, it should be noted that the pet-food operations appear more profitable, at least on the gross profit level than does canned tuna fish for human consumption. This holds true not only for the aggregate percentages, but for a majority of the individual firms also.

Summary.—The financial health of the U.S. tuna-processing industry has improved substantially from its depressed state in 1982-83. Although not all of the six firms have shared equally in the improvement, industry-wide net income from sales of canned tuna for human consumption has increased to levels that set new records for the period covered by this investigation, recovering significantly from the almost universal losses suffered in 1982 and 1983. Although net sales from operations producing canned tuna for human consumption fell during 1981-85, reaching \$1.04 billion or almost 15 percent below the 1981 level, costs—particularly of frozen tuna—declined as well, raising net income before income taxes from its dismally low level of -\$62 million in 1982 to \$58 million in 1985. The 1985 net income represents a 5.6-percent return on net sales. The improvement continued in early 1986 as net income before income taxes increased by 18 percent between the interim periods of 1985 and 1986, to \$75 million, or 9 percent of net sales during the period.

Compared with the overall performance of the U.S. food-products industry, U.S. tuna processors, as a whole, outperformed the larger industry in 1985. According to industry data aggregated by Fortune Magazine for its annual Fortune 500 issue, the median return on sales (net income after taxes as a percent of sales) for the food industry, of which the U.S. tuna processors are a component, was reported as 2.9 percent in 1984 and 3.0 percent during 1985.

In comparison, U.S. tuna processors reported in questionnaire responses their after-tax return on sales on their aggregate overall establishment operations to be -1.2 percent during 1984 and 3.9 percent for 1985. The parent companies of both Starkist and VanCamp—H.J. Heinz and Ralston Purina, respectively—were included in Fortune's largest U.S. industrial corporations survey. H.J. Heinz ranked 97 out of 500 in order of dollar sales for 1985, and Ralston Purina ranked 61 out of 500 in order of dollar sales for 1985. ^{1/}

Revenues.—The principal cause of the decline in net sales (tuna for human consumption only) by the firms during 1981–85 was a decline in prices for canned tuna, illustrated by the data on average unit values in table 13. According to those data, which apply to domestic shipments by U.S. processors (including shipments by some processors of imported canned tuna), the average unit value of canned tuna declined by 25 percent during the 4-year period from 1981 to 1985. The volume of domestic production during that period, shown in table 11, fluctuated between a high of 649 million pounds in 1981 and a low of 569 million pounds in both 1982 and 1985. According to sources in the industry, the major factors working to reduce prices and net sales were increased world production of both frozen and canned tuna, which acted to depress prices for the primary output of the processors, canned tuna, as well as the principal cost of production, the unit cost of frozen tuna. It is not obvious which price, that for canned or frozen tuna, caused the other to fall, but certainly in a reasonably competitive market it would have been difficult for one to fall while the other held constant.

Costs.—Without the decline in the price of frozen tuna, the processors could not have survived the 1981–85 decline in prices for canned tuna as successfully as they did. The cost of goods sold on their operations producing canned tuna for human consumption, of which frozen tuna is the dominant component, declined by \$174 million during 1981–85, compared with a decline in net sales of \$177 million (table 21). Frozen tuna as a share of cost of goods sold declined during 1981–85, as shown in table 23, from 71 percent in 1981 to 56 percent in 1985. Clearly, the decline in the cost of frozen tuna to the processors played a major role in explaining their return to financial health despite significant declines in prices of canned tuna.

Such variable costs as raw material are not the whole explanation of the improvement in net income for the industry. The expenses incurred by some of the processors in closing inefficient plants and divesting fishing vessels were extremely high in recent years, peaking in 1984, when a number of California canneries were closed. In that year, the cost incurred by the industry for nonoperating expenses on their operations producing canned tuna for human consumption (net of nontuna sources of income) totaled \$66 million, compared with a 1979–85 annual average of \$22.5 million; the principal cause of this increased expense was the writeoff of several million dollars worth of fixed assets and other expenses (such as severance pay) related to plant closures and vessel divestments. While this restructuring of the industry's

^{1/} Fortune, Apr. 28, 1986, p. 184.

assets was costly in the short run (and forced the industry to sustain a net loss in 1984), the disposal of inefficient assets may significantly improve the future performance of the industry. ^{1/}

Nature and Extent of Government Involvement in the Industry

U.S. and international legislation concerning the tuna industry

Because the tuna resources sought by U.S. tuna fleets are highly migratory and are, for the most part, located far beyond U.S. fisheries jurisdiction, U.S. tuna fishermen are affected more by multilateral government agreements and foreign laws and regulations, and less by U.S. fisheries legislation than any other major segment of the U.S. fishing industry. Assertion of exclusive jurisdiction over its tuna fisheries resources by another coastal nation (such jurisdiction would not be recognized by the United States, as described below) can effectively restrict access by U.S. fishermen to much of the world's tuna resources. Such possible exclusion could drastically restrict potential catches by U.S. tuna fishermen, and is a primary concern of U.S. tuna industry representatives and U.S. Government agencies involved with the tuna industry.

Federal legislation.—U.S. law excludes tuna resources from U.S. jurisdiction or Government management. However, several Federal regulations and activities other than fisheries management also impact on the tuna industry, particularly tuna harvesters.

The Magnuson Fishery Conservation and Management Act of 1976 (MFCMA) (16 U.S.C. 1801, et. seq.), which became effective on March 1, 1977, established the U.S. Fishery Conservation Zone (FCZ) (the so-called 200-mile limit) to provide for the conservation and exclusive management by the United States of most fishery resources within the FCZ. Section 103 of the act specifically excludes from national jurisdiction "highly migratory species" such as tuna (16 U.S.C. 1813). Additionally, the MFCMA makes clear that the United States does not recognize any other country's claims of jurisdiction over tuna resources (beyond 12 nautical miles off the coast). This position was reinforced by a Presidential proclamation establishing a 200-mile U.S. Exclusive Economic Zone (EEZ) in March 1983, an act that brought under U.S. control, in addition to the fisheries resources covered by the MFCMA, most of the natural resources located in the seabed, subsoil, and waters within 200 miles of the U.S. coast—the only exception was highly migratory species of fish, for the same reasons supporting the position in the MFCMA. The rationale behind the exclusion of tuna from such jurisdiction can be summarized as follows: "Tuna are not a resident resource of the EEZ. They are only found within any EEZ temporarily and may migrate far out into the ocean waters beyond. Therefore the coastal State does not have the ability to

^{1/} In the words of an observer of the current structural change in American industry, "(m)ost writeoffs are now viewed as constructive. They represent an undoing of failed...efforts of years gone by." Robert Salomon, a managing director of Salomon Brothers (Fortune, Apr. 28, 1986, p. 176.)

manage and conserve tuna, nor does it have a paramount interest in their development." 1/

The body of law governing international fisheries issues, excluding trade, is the United Nations Conference on the Law of the Sea (LOS). The United States, for reasons not related to fisheries, is one of the few coastal nations not a signatory to the LOS. However, the fisheries provisions of the LOS are similar to those contained in the MFCMA, and the position of the United States is that article 64 of the LOS, requiring cooperation between coastal states and distant water fishing nations to manage tuna, is consistent with the U.S. view that tuna are not subject to unilateral national jurisdiction. 2/

The Administrator of the National Oceanic and Atmospheric Administration (NOAA) of the Department of Commerce is empowered under the authority of the Marine Mammal Protection Act (MMPA) (16 U.S.C. 1361 et seq.) to close the eastern Pacific tropical tuna fishery associated with porpoises when such tuna harvesting activity results in a by-catch of porpoises exceeding a previously set annual quota on such by-catches. Porpoise harvests by U.S. purse seiners, a common occurrence because of the tendency of porpoises to feed near the surface above tuna populations, increased significantly in the 1960's with the growth in the purse seiner fleet. The MMPA was enacted by Congress in 1972 in response to public concern that certain marine mammal populations, including porpoises, were being harvested in such numbers that they risked becoming endangered species. Beginning in 1977, the Administrator of NOAA authorized an annual quota for the harvest of porpoises by U.S. tuna vessels, which for several years has been 20,500 animals. Only rarely has the industry approached this quota and thereby risked closure of this important tuna fishery.

In 1986, a dispute arose between the U.S. tuna industry and the Administrator, resulting from the Administrator's decision to temporarily reduce the number of Government observers placed on U.S. purse seiners during several weeks in the spring of 1986. These observers, who are placed on selected vessels of the U.S. purse seine fleet, collect data on harvesting activity by the vessels; these data are used to estimate the total porpoise harvest by the U.S. tuna fleet. The U.S. industry has argued that the reduced observer coverage resulted in biased reporting in 1986, causing an overestimate of the porpoise kill and, consequently, the threat of an unduly early closure of the eastern Pacific tuna fishery. On October 14, 1986, for the first time since the quotas were first implemented, the Administrator

1/ Testimony of Theodore G. Kronmiller, Deputy Assistant Secretary of State for Oceans and Fisheries Affairs, before the U.S. Senate Committee on Foreign Relations, June 7, 1983.

2/ Ibid. Article 64 of the LOS provides that "(t)he coastal State and other States whose national fish in the region for the highly migratory species...shall co-operate directly or indirectly through appropriate international organizations...In regions for which no appropriate international organizations exist, the coastal State and other States whose nationals harvest these species in the region shall co-operate to establish such an organization and participate in its work."

ordered the closure of the fishery beginning October 21, 1986 and continuing through the remainder of the calendar year. On October 14, 1986, it was projected that by October 21 the estimated porpoise kill would have exceeded the quota of 20,500 animals.

Other legislation relevant to the tuna industry includes the so-called Nicholson Act (46 U.S.C. 251), which bans foreign-flag vessels from landing in ports of the United States their catch of fish or any fish delivered to them at sea from a vessel that catches or processes fish products. "Ports of the United States" include those in Puerto Rico but exclude those in American Samoa or other insular possessions. Moreover, this Act does not cover Canadian albacore vessels, whose access to certain U.S. ports is protected by a 1982 treaty between the United States and Canada (see later discussion).

Federal Government assistance.—The Fishermen's Guarantee Fund established under the Fishermen's Protective Act, as amended (22 U.S.C. 1971, et seq.) compensates owners of U.S.-flag fishing vessels for claims and administrative expenses related to seizures of vessels by foreign governments, usually as a result of fishing in disputed or non-U.S.-recognized foreign territorial waters. Another program established by the Fishermen's Protective Act is the Fishing Vessel and Gear Damage Compensation Fund, which compensates fishermen for gear damage resulting from manmade acts, such as damage from other vessels. The financing of this program is provided by revenues received from fees assessed to owners of seized foreign fishing vessels.

One of the most important sources of financial assistance for tuna vessel acquisitions is the Production Credit Association (PCA) system of the Farm Credit Administration, a Federal agency. PCA's are cooperative lending institutions that were initially set up to assist farmers. In 1972, their coverage was expanded to include fishermen. In many areas, such as the west coast, outstanding loans to fishermen exceed those to farmers, and the PCA's ability to lend large sums of money has in the past made it an attractive source of financing for purse seine vessels acquisitions. Typically, a PCA will require a 25-percent downpayment for a loan, with a 15-year maturity. In addition, the borrower must have an equity interest in the PCA, usually obtained by placing 10 percent of the loan in a reserve of PCA shares. The nominal rate of interest on the loan is tied to Federal Intermediate Credit Bank bond rates.

International.—International agreements, such as those achieved through bilateral negotiation between the United States and other coastal nations are extremely important factors in the international competitiveness of the U.S. tuna fleet. These international agreements can be negotiated by either the U.S. Government or the American Tunaboat Association, and both have at one time or another contracted with foreign governments for access to another nation's tuna resources.

Historically, the most important international agreement affecting U.S. tuna fishermen has been the 1950 Inter-American Tropical Tuna Convention, originally entered into by the Governments of the United States and Costa Rica (16 U.S.C. 951). Later, other nations adjacent to, or with interests in, the

tuna resources of the eastern Pacific adhered to the convention, including Panama (1953), Ecuador (1961), Mexico (1964), Canada (1968), Japan (1970), France (1973), and Nicaragua (1973). Subsequently, some members withdrew from the convention: Ecuador, in 1968; Mexico, in 1978; Costa Rica, in 1979; and Canada, in 1984.

The convention established the Inter-American Tropical Tuna Commission (IATTC), currently headquartered in La Jolla, California, and charged it with the duties of (a) the study of the biology of the tuna resources of the eastern Pacific region, including assessment of population levels and the effects thereon of fishing effort; and (b) determination and recommendation of appropriate conservation measures, if any, to protect the long-term viability of the region's tuna resources.

During the 1960's, the IATTC grew concerned that yellowfin tuna resources (which constituted about 50 percent of the total tuna catch in the region) were being fished too heavily to sustain maximum annual yields. In 1967, the first conservation measure, a region-wide annual quota of 84,500 tons of yellowfin was established by the IATTC. In each following year through 1979, a revised quota was recommended by the IATTC and implemented by its member nations. These annual quotas applied to an area of the eastern tropical Pacific designated as the Commission's Yellowfin Regulatory Area (CYRA).

However, with the above-noted withdrawal from the IATTC of some members in the late 1960's and 1970's, the overall effectiveness of such quotas was reduced, eventually to the point where, in 1980, the quota regulation of the fishery ceased altogether. The IATTC has continued, nevertheless, to recommend to its members an annual yellowfin quota, which has in recent years served primarily as a benchmark against which to measure the actual catch. Table 24 presents information on the quotas recommended by the IATTC and the actual yellowfin catch in the region (all countries) during 1966-85.

In the southern and western Pacific, the region bounded approximately by Australia, New Zealand, Hawaii, and the Philippines, the extension by various coastal nations of fisheries jurisdictions to 200 nautical miles has greatly affected U.S. fishermen's access to tuna resources, particularly in the 1980's as the U.S. presence in western Pacific fisheries has intensified. Among the more important actions were the fishery conservation zone (FCZ) claims (including jurisdiction over tuna) of the South Pacific Forum Fisheries Agency (SPFFA), a consortium of nations in the South Pacific (including Australia, New Zealand, and 14 other nations in the region, and members of the Pacific Trust Territory such as Kiribati, Palau, and Micronesia). The combined FCZ of these nations totals more than 6 million square nautical miles, or almost three times as much as the entire FCZ of the United States of 2.3 million square nautical miles. These claims, and the resulting political difficulties and disruption of U.S. tuna harvesting activities have necessitated the negotiation by representatives of the U.S. tuna fleet with these Governments for access to their territorial waters.

Several agreements have resulted from such negotiations, some fairly short lived but all similar with regard to providing licensing agreements for U.S. tuna fishermen. In 1980 an agreement concerning regional tuna vessel

licensing was reached between representatives of the Palau Maritime Authority, the Micronesia Maritime Authority, and the American Tunaboat Association, providing for U.S. tuna vessel access to the territorial waters of Palau and Micronesia during July 1, 1980-December 31, 1982. In 1981, this agreement was also signed by a representative of the Marshall Islands and thus extended to the Marshall Islands Territorial waters. A similar agreement was entered into in March 1982 by the American Tunaboat Association and the Governments of Kiribati, Micronesia, and Palau, covering the period January 1, 1983-December 31, 1984, providing for access by U.S. tuna vessels to the territorial waters of these nations. The terms of these agreements were similar, and basically required U.S. tuna vessels to pay a fee based on the vessel's net registered tonnage to an "administering authority" (one of the signatory Governments) for a Certificate of Access authorized by the administering authority. The fee would be distributed among the signatory Governments in proportion to the amount of fish taken within their respective territorial waters. (The fee was paid regardless of the total quantity of fish actually caught.)

From the end of 1984 until October 1986, there were no agreements between the U.S. Government or industry regarding access to South Pacific waters. Some U.S. vessels continued to purchase licenses from Palau, in a de facto extension of the earlier agreement, but this did not represent an official treaty. Beginning in September 1984, the United States Government has been negotiating with the SPFFA for an agreement providing for access by U.S. vessels to these nations' tuna fishing grounds. Continuing differences in view between the United States and the nations of the region slowed progress in such negotiations. ^{1/} For several months, the negotiations were unsuccessful largely because of the unwillingness of the two sides to compromise on an access fee. For instance, as late as September 1986, the asking price for the annual access fee was \$20 million, while the United States was willing to pay only \$7.5 million (including \$1.5 million

^{1/} The basic problem creating the political difficulties has been the differing views on national jurisdiction over tuna resources. As described above, the view of the United States is that the highly migratory nature of tuna prevents its rational management and control by a single coastal nation, and that management, if any, should be directed through a regionwide international body, as has been the case in the eastern Pacific. This position, as noted, is viewed by the United States as being supported by article 64 of the LOS, to which the members of the SPFFA are signatories. The view of the SPFFA is that coastal nations do in fact have exclusive jurisdiction over all fishery resources, including tuna, but that proper management of tuna resources requires international cooperation: "The Parties to this Convention recognise that the coastal state has sovereign rights... (over) the living marine resources, including highly migratory species, within its exclusive economic zone or fishing zone... (T)he Parties recognise that effective co-operation for the conservation and optimum utilisation of the highly migratory species of the region will require the establishment of additional international machinery to provide for co-operation between all coastal states in the region and all states involved in the harvesting of such resources." (Article III, sections 1 and 2, of the South Pacific Forum Fisheries Agency Convention.)

from the members of the American Tunaboat Association and a \$6-million payment-in-kind from the Federal Government). Finally, in October, 1986, agreement in principle was reached between the United States and the SPFFA. ^{1/} Under the reported terms of the agreement, the U.S. Government will pay \$50 million in 5 annual installments, largely in payment-in-kind grants (development aid), and the U.S. tuna industry will pay an additional \$1.75 million in license fees for U.S. purse seiners and \$250,000 in technical assistance. This agreement ensures U.S. harvesters' access to important tuna grounds in the Western Pacific until at least 1991, at the end of which time the current agreement will expire.

An international agreement that affects primarily U.S. tuna processors, particularly those in American Samoa, is the Compact of Free Association between the United States and the Federated States of Micronesia, the Republic of the Marshall Islands, and the Republic of Palau. Under the terms of the agreement, the United States has certain rights regarding military installations and missile ranges. In exchange, the three Pacific nations have duty-free access to the U.S. market for most goods, provided that the goods be substantially transformed locally and contain at least 35 percent local content. An exception was made for canned tuna because of the potential competition with American Samoa processors. Canned tuna packed in water shipped from the three nations would have duty-free status for an amount up to an annual quota of 10 percent of the previous year's U.S. consumption of canned tuna; above this quota, water-packed tuna would be subject to existing tariff rates on such tuna. Oil-packed tuna is exempt from this provision, and is dutiable at its normal rate of 35 percent. Currently, no tuna processing takes place in any of the three nations.

Another Pacific treaty affecting the U.S. tuna industry is between the United States and Canada, the Treaty on Pacific Coast Albacore Tuna Vessels and Port Privileges (T.I.A.S. No. 10057), instituted on May 26, 1982. This agreement settled a dispute over jurisdiction over albacore resources that peaked in 1982, when Canada seized a U.S. albacore vessel for fishing within Canada's 200-mile limit. The treaty provides for bilateral access to fishing grounds, and is unique in that it also provides for bilateral access to certain ports by albacore fishing vessels seeking to land their catch. Normally, under the provisions of the Nicholson Act (see earlier discussion),

^{1/} "Pacific Nations Sign Tuna Deal," The New York Times, October 22, 1986, p. 5; "U.S. Settles Rift on Tuna With \$60 Million Accord," The Wall Street Journal, October 23, 1986, p. 14. The U.S. Senate must ratify the agreement before it actually goes into effect. In a related story ("Soviets Lose Rights To Fish in Kiribati," Journal of Commerce, October 17, 1986), it was reported that Kiribati had failed to renew an access agreement with the Soviet Union that had allowed Soviet tuna harvesters access to Kiribati waters for one year, expiring in October 1986. This agreement, the first such one involving the Soviet Union in the Pacific, required the payment of \$1.7 million to Kiribati. The agreement reportedly caused concern in the United States and Australia, possibly providing a fresh impetus to the parties to the negotiations between the United States and the SPFFA to conclude an agreement.

no fish may be landed in a U.S. port (other than insular possessions such as American Samoa) by a foreign fishing vessel; the U.S.-Canada albacore treaty provides the only exception to that law.

Although the tuna resources of the Atlantic Ocean support a very small part of the U.S. tuna industry (only 1 percent of the U.S. tuna catch is harvested in Atlantic waters), management of these resources, like those of the Pacific, is carried out by an international organization of which the United States is an important member, the International Commission for the Conservation of Atlantic Tunas (ICCAT). ICCAT has a total membership of 22 nations, the most important of which (in terms of active management responsibilities) are the United States, Japan, and Canada. The tuna species the ICCAT is principally concerned with is northern bluefin, the only species for which sufficient evidence exists to indicate a need for management, although all major tuna species located in the Atlantic are monitored to some extent by ICCAT.

Starting in 1975, ICCAT began limiting by quotas the harvest of bluefin in the Atlantic. The quota on the total annual harvest was allocated among fishing nations on the basis of their past respective shares of the total harvest; these same proportions continue to be the basis for recent allocations as well.

As described above, the Atlantic tuna fishery is of minor importance to the U.S. tuna industry as a whole, except as a source of imported frozen tuna for Puerto Rican canneries. In addition, a significant sportfishery for tuna exists along the U.S. Atlantic coast. Particularly in the western Atlantic, the combined U.S. commercial and sport fisheries for tuna constitute a significant part of total Atlantic tuna-harvesting activity. However, the apparent abundance of all species except bluefin, is high enough relative to international fishing efforts to warrant only stock-monitoring activities by Governments and the ICCAT, and with the exception of the establishment of the bluefin quota, this is the only significant U.S. Government activity in the Atlantic tuna fishery.

THE U.S. TUNA MARKET

Overview

The U.S. market for tuna can be divided into two distinct segments—one for frozen tuna and one for canned tuna. The customers of the frozen tuna segment, however, consist almost totally of producers of canned tuna. Therefore, these two segments are closely interrelated in the U.S. market. Inasmuch as virtually all the U.S. supply of frozen tuna is processed into canned tuna, most of the following section is concentrated on the canned tuna market sector.

The United States is the world's largest market for canned tuna and is second only to Japan as a market for frozen tuna. ^{1/} The United States

^{1/} Japan consumes a large amount of fresh and frozen tuna, with a smaller proportion of their frozen tuna supply being utilized for canned tuna compared with that of the United States.

consumes about 35 percent of the total world supply of tuna (frozen weight basis) and about 57 percent of the total world supply of canned tuna (standard case basis). ^{1/}

U.S. consumption of all fish products totaled approximately 3.4 billion pounds in 1985, or about 14.5 pounds per capita. ^{2/} These were record high levels and were up from approximately 2.9 billion pounds, or 13.0 pounds per capita, in 1979. The rise in U.S. consumption of fish products during 1979-85 resulted from an increasing population, which was the primary factor in the rise in absolute levels, coupled with rising demand, which was evidenced by the rise in per capita consumption.

Contributing to the rise in overall fish consumption during the period under review was canned tuna, the most commonly consumed fish product in the United States. The following tabulation shows U.S. per capita consumption of major fish items, including canned tuna, during 1979-85 (data from the U.S. Department of Commerce, National Marine Fisheries Service, in pounds):

Year	<u>Canned products</u>			<u>Total</u>	<u>Filletts</u>	<u>Sticks</u>	<u>Shrimp,</u>	<u>Total,</u>
	<u>Tuna</u>	<u>Salmon</u>	<u>Other</u>		<u>and</u> <u>steaks</u>	<u>and</u> <u>portions</u>	<u>all prep-</u> <u>arations</u>	<u>all fish</u> <u>products</u>
1979....	3.2	0.5	1.1	4.8	2.7	2.2	1.3	13.0
1980....	2.9	.5	1.1	4.5	2.6	1.9	1.4	12.8
1981....	3.1	.5	1.2	4.8	2.7	1.8	1.5	12.9
1982....	2.7	.5	1.1	4.3	2.7	1.7	1.5	12.3
1983....	3.1	.5	1.2	4.8	2.9	1.8	1.7	13.1
1984....	3.2	.6	1.1	4.9	3.0	1.8	1.9	13.7
1985....	3.3	.6	1.3	5.2	3.2	1.8	2.0	14.5

Note.—Figures may not add to the totals shown owing to differences in weight bases. For example, the data for sticks and portions include breading, whereas the data for all fish products do not.

Although the data indicate that the per capita consumption of filletts and steaks nearly equaled that of canned tuna during the period under review, the filletts and steaks category comprises all species of fish and different product forms (fresh and frozen), whereas, the canned tuna category consists of a single product.

^{1/} King, Dennis M. and Harry A. Bateman, The Economic Impact of Recent Changes in the U.S. Tuna Industry, California Sea Grant Program Working Paper No. P-T-47, p. 14. Data are for 1983, but are not believed to have changed significantly since then.

^{2/} Includes fish and shellfish entering commercial channels for human consumption. Data are from the National Marine Fisheries Service and are based on raw, edible meat, excluding bones, viscera, shells, and so forth.

Market Profile

Canned tuna is consumed in most households throughout the United States. According to a recent report by the Food and Agriculture Organization of the United Nations, 1/ canned tuna is consumed in about 85 percent of all U.S. households. According to another study, seafood marketing data indicate that canned tuna alone accounts for more than half of total retail seafood purchases in the United States market. 2/ Most canned tuna is purchased at retail outlets (mainly supermarkets) and consumed in the home. According to a seafood-consumption survey funded by the NMFS, about 94 percent of total U.S. canned tuna supplies are consumed in the home. 3/ Tuna, by far, led all seafood products in the share of at-home serving occasions reported by households in this survey, accounting for 40 percent of total at-home serving occasions reported by survey respondents (compared with 7 percent for shrimp, the next most popular seafood item). 4/ In contrast, tuna only accounted for slightly more than 7 percent of away-from-home serving occasions (compared with 19 percent for shrimp, the leading item).

Canned tuna consumption is somewhat concentrated regionally. In absolute terms, consumption is concentrated in metropolitan areas in coastal areas, particularly in the Northeast, southern California, and Pacific Northwest regions. In terms of frequency of consumption, however, canned tuna is more prominent as a seafood item in the Central and Mid-Atlantic areas of the United States. According to the NMFS consumption survey, of the surveyed households reporting serving canned tuna (in water), 23 percent of these households were in the Great Lakes Area, and 21 percent of the households were in the Mid-Atlantic area compared with 8 percent in the New England area and 12 percent in the California area. 5/ Thus, while the bulk of the quantity of canned tuna consumption occurs in the major metropolitan areas along the east and west coasts, canned tuna is a more important seafood item, in relative terms, in areas that traditionally do not consume large amounts of seafood.

1/ Kitson, Graham and D.L. Hustis, The Tuna Market, ADB/FAO Infish Market Study, Vol. 2, Kuala Lumpur, March 1983, p. 4.

2/ King and Bateman, op. cit., p. 15. Data are based on retail sales reported by Selling Areas Marketing, Inc. (SAMI), a private research firm that provides sales and marketing information based on warehouse movements and retail outlet sales.

3/ Data obtained during the survey were retabulated and reported in Analysis of Seafood Consumption in the U.S.: 1970, 1974, 1978, 1981, by Teh-wei Hu, funded by the NMFS under the Saltonstall-Kennedy Program (Grant No. NA82AA-H-00053), Sept. 30, 1985, p. 31.

4/ Data obtained during the survey were retabulated and reported in A Usage Segmentation Analysis of the 1981 U.S. Seafood Consumption Study (Final Report), prepared by the Longwoods Research Group Limited for the Fisheries Council of Canada, October 1984. The data are based on households that served or consumed canned tuna during a 4-month period.

5/ Ibid.

The NMFS consumption survey also gathered data on canned tuna consumption by various demographic factors. The results indicated that canned tuna is served more frequently in households in the lower income ranges. Also, canned tuna is consumed by a larger proportion of consumers in the 25 to 34 age group and in households comprising two people and adults only.

There are general market patterns in terms of types of canned tuna pack, source of product (domestic vs. foreign), and tuna brands. The U.S. canned tuna market is composed of several sectors according to the type of pack. There are two overall sectors, the retail sector and the institutional sector. Table 25 shows distribution of shipments, by market segments. During 1979-85, the share of shipments accounted for by the retail sector ranged between 88 and 90 percent, and the share held by the institutional sector ranged between 10 and 12 percent. Within these sectors, there are distinct subsectors based on the packing medium (water vs. oil) and the type of meat (white vs. light), and the label type (advertised brand vs. private label). The lightmeat sector is, by far the predominant market segment, as world supplies of albacore (used to produce whitemeat tuna) are relatively scarce. Table 26 shows that in 1984 and 1985, the lightmeat sector accounted for approximately 80-82 percent of the U.S. canned tuna market, with the remainder accounted for by the whitemeat sector. Also, there has been a market shift in the U.S. market toward canned tuna in water, with this sector increasing its market share relative to tuna in oil from 45 percent in 1979 to 72 percent in 1985 (table 27). This shift is discussed in further detail in the section of the report on consumption. Geographically, the east coast market (particularly in the Northeast) has traditionally preferred whitemeat tuna, and lightmeat tuna has been preferred in the west coast market. There are general market segment concentrations by source of products. U.S.-produced canned tuna dominates the advertised-brand retail market, whereas, imported tuna dominates the institutional market and is growing in the private-label retail market. During 1979-85, the share of the advertised-brand retail market sector held by U.S. canned tuna ranged between 94 and 98 percent (table 28), with the balance held by imports. ^{1/} The share of the institutional-market sector held by imports during the period increased from 43 percent in 1979 to 62 percent in 1985, and the imports' share of the private-label retail market segment rose from 2 percent in 1979 to 20 percent in 1985, with corresponding declines in shares of these market sectors held by U.S. supplies (table 28).

Supply and Demand Factors

Myriad factors affect the supply of and the demand for frozen and canned tuna in the U.S. market. The following discussion will focus on the major factors involved in determining this supply and demand. The supply of frozen tuna available to the U.S. market is determined by the U.S. tuna catch and by available supplies produced by other sources. Factors that directly

^{1/} A portion of this share during 1984-85 was accounted for by imports that are distributed by U.S. processors under their advertised brand labels.

affect both the U.S. and world tuna catches include the condition of world tuna stocks and fishing effort. The condition of world tuna stocks is subject to biological and environmental factors that are largely outside the realm of market forces. Fishing effort is affected, to a degree, by market forces, the primary effect being price. Also, the availability of imported frozen tuna to the U.S. market is affected by conditions in competing world frozen tuna markets.

The demand for frozen tuna in the U.S. market is determined mainly by the raw material requirements of U.S. canned tuna producers. Raw material requirements are directly affected by conditions in the U.S. market for canned tuna. The nature of the demand for frozen tuna by U.S. canned tuna producers varies somewhat by source. U.S. producers of canned tuna generally rely on a relatively steady supply of frozen tuna from U.S. tuna vessels and will purchase virtually all of their output. Imported frozen tuna generally is used to supplement U.S.-produced frozen tuna supplies, although the share of total frozen tuna utilization by U.S. canned tuna producers accounted for by imports frequently exceeds the share held by U.S.-produced frozen tuna.

The supply of canned tuna in the U.S. market is determined by U.S. production and import levels. The major factors influencing the supply of U.S.-produced canned tuna are canned tuna market prices, raw material availability, and production costs. The same factors influence the supply of imported canned tuna, with the addition of conditions in alternative markets as a factor.

The demand for canned tuna in the U.S. market is principally determined by the number of consumers, disposable income levels, prices of canned tuna and of competing food items, and consumer preferences. The number of potential U.S. consumers of canned tuna can be approximated by the population level. The U.S. population was approximately 227 million persons in 1980, up about 12 percent from 203 million persons in 1970. ^{1/} The population is projected to increase to 249 million persons by 1990. Most of the population is concentrated in major metropolitan areas. The 10 most populated metropolitan areas in the United States, as of 1980, were New York, Los Angeles, Chicago, Philadelphia, San Francisco, Detroit, Washington, DC, Houston, and Dallas. ^{2/} Tuna industry members have indicated that these are among the major market areas for canned tuna.

The level of consumers' disposable income influences the demand for canned tuna, inasmuch as disposable income combined with the population determines the size of the market in monetary terms. The following tabulation shows the aggregate level of disposable personal income, as well as per-capita disposable personal income, in both real and nominal terms, during 1979-85 (compiled from official statistics of the U.S. Department of Commerce):

^{1/} Statistical Abstract of the United States, 1984, U.S. Department of Commerce.

^{2/} Ibid. Based on Metropolitan Statistical Areas.

Year	Aggregate		Per capita 2/	
	Nominal	Real 1/	Nominal	Real 1/
	(billions dollars)			
1979.....	\$1,650	\$1,650	\$9,912	\$9,912
1980.....	1,829	1,611	10,800	9,513
1981.....	2,042	1,630	11,888	9,489
1982.....	2,181	1,640	12,539	9,429
1983.....	2,340	1,705	13,304	9,694
1984.....	2,577	1,801	14,471	10,113
1985.....	2,801	1,890	15,569	10,505

1/ 1979 dollars. Deflated using the Consumer Price Index.

2/ In terms of noninstitutional population, persons 16 years of age and over.

The demand for canned tuna is also influenced by prices for canned tuna and for competing food items. Inasmuch as the bulk of canned tuna supplies is marketed through retail outlets, price competition with other food items is strong. Industry sources have indicated that the food items that compete most strongly with canned tuna are hamburger (ground beef) and chicken. Figure 1, appendix D shows the retail price index movements during 1980-85 for chunk light canned tuna (the primary type), fish portions, ground beef, and whole chicken. In general, canned tuna maintained its relative price position vis-a-vis ground beef during the period and became more competitive relative to whole chicken around the beginning of 1984. Generally declining frozen tuna prices and increasing competition from canned tuna imports, among other factors, led to a lowering of canned tuna retail prices beginning in 1981.

Apparent Consumption

Frozen tuna

Table 29 shows U.S. apparent consumption of frozen tuna. 1/ Such consumption declined from 1,190 million pounds in 1979 to 937 million pounds in 1985, or by 21 percent. This decline resulted directly from a general

1/ The discussion presented here on frozen tuna consumption is based on data contained in various issues of the U.S. Tuna Trade Summary, published by the NMFS. These data represent receipts of frozen tuna at U.S. processing plants from different sources (domestic and foreign), and may differ from NMFS and Census data contained in other statistical publications. There are a number of reasons for this discrepancy. Differences in landings data may occur because the data presented here reflect actual deliveries to the processing plants and do not include any tuna that may have been marketed fresh. Differences in import data may occur because the data presented here represent final weights received at the processing plants, whereas, data reported by Census are usually based on estimated weights on the import declarations. Census data also are subject to well-known statistical reporting errors, such as misclassification and import carryover. It is believed by the Commission's staff that the data presented here represent the most accurate information as to the actual consumption of frozen tuna by U.S. tuna processors.

downward trend in U.S. canned tuna production during the period under review. Consumption of frozen tuna showed significant annual declines in both 1982 and 1985. The decline in 1982 frozen tuna consumption (16 percent lower than in 1981) occurred as several tuna plants ceased canned tuna production (most temporarily). Frozen tuna consumption increased slightly in 1983, as some plants resumed production, but at lower levels than in previous years. Then, consumption of frozen tuna declined both in 1984 (by 2 percent) and in 1985 (by 11 percent), as processing plants in southern California were closed permanently and the industry restructured to operate at lower output levels than in the past.

Imports accounted for a generally declining share of consumption of frozen tuna during 1979-85, dropping from about 60 percent during 1979-82 to 54 percent in 1985 (table 29, fig. 3). This share was at its lowest point (46 percent) in 1983. This occurred toward the end of the El Nino phenomenon, when catches were reduced in the eastern Pacific, and the low catch levels exacerbated the financial difficulties that were being experienced by the U.S. tuna fleet. This situation, coupled with generally declining frozen tuna consumption and canned tuna production levels by U.S. processors, led to a greater proportional use by U.S. processors of frozen tuna caught by the U.S. tuna fleet. This happened mainly because of financial, contractual, or other ties between the two sectors. Since 1983, imports of frozen tuna have somewhat increased their share of U.S. frozen tuna consumption, mainly as the result of the contraction of the U.S. tuna fleet and the resulting declines in U.S. landings. Also, exports of frozen tuna by the U.S. tuna fleet during 1984-85 decreased the supply of U.S.-caught tuna available to U.S. processing plants.

Consumption patterns of frozen tuna differ considerably according to the species of tuna. In general, U.S. processors use a much greater proportion of imports for their requirements of frozen albacore than of tropical (mainly yellowfin and skipjack) tuna. This is owing to the relatively small capacity and limited range of the U.S. albacore fleet and the contrasting large capacity and far-reaching range of the U.S. purse seine fleet. However, U.S. consumption of frozen albacore tuna is much less than that of frozen tropical tuna, as shown in the following tabulation (from the U.S. Department of Commerce):

Species	Share (percent) of total U.S. apparent consumption						
	1979	1980	1981	1982	1983	1984	1985
Tropical.....	84	85	83	80	84	80	78
Albacore.....	16	15	17	20	16	20	22
Total.....	100	100	100	100	100	100	100

Table 30 shows U.S. apparent consumption of tropical tuna. Such consumption followed the same pattern as that for overall consumption, as the bulk of total U.S. frozen tuna consumption is accounted for by tropical tuna. Also, the share of consumption of frozen tropical tuna accounted for by

imports is somewhat lower than that for overall consumption, from 5-10 percentage points during 1979-85. This is due to the fact that the bulk of domestic frozen tuna supplies available to U.S. processors is provided by purse seiners, which concentrate on catching tropical tuna.

Table 31 shows U.S. apparent consumption of frozen albacore tuna. The consumption pattern for albacore is different from that of tropical tuna. This is mainly due to the relative scarcity of albacore and the greater reliance of U.S. processors on the world market to obtain supplies. Imports supply the great bulk of U.S. consumption of frozen albacore tuna; the share of such consumption provided by imports ranged between 85 and 94 percent during 1979-85.

The preceding discussion pertained to the consumption of frozen tuna by U.S. processors. However, there is a small, but growing, market in the United States for fresh tuna. This consumption is supplied by smaller fishing vessels, such as the trollers and baitboats of the west coast albacore fleet and charter boats in the gulf and New England areas. In contrast, virtually all of the catch of the tuna purse seine fleet is destined for U.S. tuna-processing plants. Precise data are not available on the U.S. fresh tuna market. However, it is believed to be concentrated along populated coastal areas, with consumption occurring mainly in restaurants. The increasing popularity of sushi restaurants and of mesquite-grilled fish (of which tuna is a popular item) have increased the demand for fresh tuna.

Canned tuna

Table 32 shows U.S. apparent consumption of canned tuna. Such consumption rose significantly in quantity during 1979-85, from 704 million pounds in the former year to 794 million pounds in the latter year, representing an increase of 13 percent. This rise was supplied principally by imports, which increased their share of the quantity consumed from 8 percent in 1979 to 27 percent in 1985. The estimated value of such consumption rose from \$1,080 million in 1979 to \$1,311 million in 1981, but then fell to \$1,062 million in 1985. The decline in value since 1981 resulted from declining canned tuna prices, which followed generally falling world frozen tuna prices during the period. The decline in the value of tuna consumption since 1981 also resulted from the increasing share of the U.S. canned tuna market accounted for by imports, which were significantly lower in price (reflected by the unit value) than domestically produced canned tuna during the entire period under review. The increase in U.S. canned tuna consumption, particularly since 1981, is believed to have resulted from a combination of dietary considerations and generally falling canned tuna prices and was accounted for by tuna packed in water.

Table 27 shows U.S. apparent consumption of canned tuna, by type of pack. During 1979-85, consumption of canned tuna in water increased from 314 million pounds in the former year to 571 million pounds in the latter year, or by 82 percent. Consumption of tuna packed in oil declined during the period, from 390 million pounds in 1979 to 223 million pounds in 1985, or by

43 percent. The share of total consumption accounted for by canned tuna packed in water increased from 45 percent in 1979 to 72 percent in 1985, while canned tuna packed in oil declined conversely from 55 percent in 1979 to 28 percent in 1985. This dramatic shift in consumption patterns was the result of a combination of changes in consumer preferences brought about by dietary considerations, and of an increasing share of consumption supplied by imports, virtually all of which enter packed in water because of tariff considerations. As canned tuna is a relatively low-profit-margin product, the 35-percent duty on imports of canned tuna in oil is a major contributing factor on the supply side of the shift to the market dominance held by canned tuna in water. This is evidenced by the marked increase in market share held by imports during the period under review.

U.S. imports of canned tuna have been increasing both in absolute terms and as a share of total consumption. In 1979, imports provided 8 percent of the quantity of U.S. consumption of canned tuna; by 1985, this share soared to 27 percent (table 32, fig. 4). Virtually all imports are packed in water. Table 33 and figure 5 show the major foreign suppliers of canned tuna to the U.S. market, in terms of import-quantity market share. Thailand, the leading foreign supplier since 1983, increased its import market share tremendously, from 9 percent in 1979 to 57 percent in 1985. The share held by the Philippines, the second leading foreign supplier in 1985, rose from 13 percent in 1979 to 32 percent in 1982 (which led all foreign suppliers that year) before falling to 14 percent in 1985. Japan, which historically had been, by far, the leading foreign supplier of canned tuna to the U.S. market, declined in share from 53 percent in 1979 to 11 percent in 1985. The share of the remaining leading foreign supplier, Taiwan, also declined, from 28 percent in 1979 to 11 percent in 1985. Imports are discussed in greater detail later in the report.

Customs Treatment

Tariff rates

The current U.S. rates of duty applicable to imports of frozen and canned tuna are shown in appendix E. A substantial amount of canned tuna is produced in American Samoa, where two U.S. firms operate large tuna-processing plants. Technically, shipments from American Samoa are imports and are dutiable unless certain conditions are satisfied. ^{1/} However, for canned tuna, shipments from American Samoa may enter duty free because frozen tuna, the major cost component in its manufacture, is duty free.

On March 11, 1983, the Tuna Research Foundation filed a petition with the International Trade Administration (ITA) of the U.S. Department of Commerce alleging that certain benefits that constitute bounties or grants within the meaning of section 303 of the Tariff Act of 1930, as amended, were being provided, directly, or indirectly, to firms in the Philippines engaged in the

^{1/} See headnote 3(a) of the Tariff Schedules of the United States, Annotated, 1986, app. E.

manufacture, production, or export of canned tuna. As a result, the ITA, on March 31 1983, instituted a countervailing duty investigation (48 FR 15505). ^{1/} Subsequently, the ITA determined that benefits were being provided to manufacturers, producers, or exporters of canned tuna in the Philippines, and determined that the net bounty or grant amounted to 0.72 percent ad valorem. Thus, a countervailing duty of this amount, in addition to the established duty, was applied to U.S. imports of canned tuna from the Philippines, effective October 31, 1983. A copy of the Federal Register notice announcing the final ITA determination is in appendix F. The countervailing duty is still in effect after 2 reviews have been conducted by the ITA.

Tuna caught by U.S. flag vessels and landed in the United States by those vessels are considered to be domestic production, whether the tuna was caught in U.S. waters, on the high seas, or in foreign waters where such vessels have the right to fish. Foreign fishing vessels are not permitted to land their catch of tuna in the United States (46 U.S.C. 251). Tuna caught by U.S.-flag vessels in international waters, whether landed directly in the United States or landed in a foreign port for transshipment to the United States, is eligible for free entry under TSUS item 180.00 (see app. E). The term "American fishery" is defined in headnote 1 of part 15A of schedule 1 of the TSUS as a "fishing enterprise conducted under the American flag by vessels of the United States on the high seas or in foreign waters in which such vessels have the right, by treaty or otherwise, to take fish or other marine products and may include a shore station operated in conjunction with such vessels by the owner or master thereof."

Tuna are highly migratory and are caught mainly on the high seas outside of U.S. waters. However, the great bulk of the tuna caught by U.S. vessels in international waters is landed directly at U.S. processing facilities and is considered as U.S. production and not entered under TSUS item 180.00. A portion of the catch is transshipped from locations outside the United States to U.S. processing facilities and, as such, is classified under TSUS item 180.00. However, inasmuch as U.S. imports of fresh and frozen tuna currently are duty free under TSUSA items 110.1012-110.1050, the duty-free treatment of imports of tuna under TSUS item 180.00 is not of particular concern. However, should duties or quotas be imposed at some future time on imports of tuna under TSUSA items 110.1012-110.1050, the question of the requirements for free entry of tuna under TSUS item 180.00 would become important. Whether or not tuna could be entered under TSUS item 180.00 as "products of American fisheries" would depend on a number of factors, including the registry of the catching vessels, the ownership of the shore stations in foreign ports, and whether or not the tuna were "changed in condition" at the shore stations abroad.

^{1/} Inasmuch as the Philippines were not a signatory under the General Agreement on Tariffs and Trade, the U.S. International Trade Commission did not conduct an injury investigation.

Quotas

There are no quotas on U.S. imports of frozen tuna. However, a tariff-rate quota exists for imports of canned tuna not packed in oil. This quota is calculated based on 20 percent of the U.S. pack of all canned tuna during the previous year. 1/ Imports not in excess of this amount are dutiable at 6-percent ad valorem, while imports in excess of this amount are dutiable at 12.5-percent ad valorem. Canned tuna produced by U.S. firms in American Samoa are not considered to be domestic production for the purposes of calculating the quota, since American Samoa is not within the customs territory of the United States. 2/ Thus, the quota is calculated on the basis of production in U.S. plants in California and Puerto Rico (which is a U.S. customs territory). Also, shipments of canned tuna produced by U.S. firms in American Samoa are not charged against the quota as imports. This situation was effected in 1982, when the headnote to TSUS item 112.30 was amended to exclude products of insular possessions as imports for the purposes of calculating the quota for that item (P.L. 97-446). 3/ Prior to that amendment, Customs was charging shipments of canned tuna from American Samoa against the quota, thus causing the quota to be filled more quickly.

The following tabulation shows the quota level for U.S. imports of canned tuna in water, imports that entered under quota and imports that entered over quota, during 1979-85 (data from the U.S. Customs Service, in thousands of pounds):

<u>Year</u>	<u>Quota</u>	<u>Imports under quota</u>	<u>Imports over quota</u>
1979.....	125,813	82,202	0
1980.....	109,074	109,074	5,064
1981.....	104,355	76,683	0
1982.....	109,742	92,759	0
1983.....	91,904	91,904	28,304
1984.....	89,699	89,699	74,216
1985.....	97,460	97,460	116,884

Note.—Data in this tabulation will not agree with tuna import data released by the U.S. Department of Commerce, Bureau of the Census, owing to statistical differences in accounting systems for such imports between these agencies.

1/ Presidential Proclamation 3128, Mar. 16, 1956.

2/ For the purposes of this investigation, however, the United States Trade Representative directed that production facilities in American Samoa be included as part of the domestic industry. Also, the Caribbean Basin Economic Recovery Act, 1983 (Public Law 98-67) amended the Tariff Act of 1930 to include production facilities in American Samoa as part of the domestic industries for the purposes of section 201 investigations.

3/ There has been considerable confusion in the past as to the status of American Samoa. See the report by the General Accounting Office included as appendix G.

As the quota began to decline owing to decreasing domestic production, particularly starting in 1983, imports consistently exceeded the quota until, in 1985, over-quota imports were greater than under-quota imports for the first time.

Embargoes

The United States periodically has imposed embargoes on imports of tuna products. These embargoes are imposed under the authority of two Acts, the Fisheries Conservation and Management Act of 1976 (FCMA)(16 U.S.C. 1801) and the Marine Mammal Protection Act (MMPA)(Public Law 92-522). Embargoes on imports of tuna products generally are imposed under the FCMA as the result of the seizure of U.S. fishing vessels by foreign governments in waters not recognized by the U.S. Government as belonging to those governments for the purpose of harvesting highly migratory species of fish (namely, tuna). Embargoes of tuna products generally are imposed under the MMPA when a foreign country does not effect a porpoise mortality protection plan that is similar to the one effected by the United States. The following tabulation presents information on U.S. embargoes of tuna products from 1978 to the present (data from the U.S. Department of State):

<u>Country</u>	<u>Effective date of embargo</u>	<u>Date embargo rescinded</u>	<u>Statute</u>
Peru	Jan. 1, 1978	July 1, 1983	MMPA
Costa Rica	Feb. 16, 1979	Aug. 13, 1979	FCMA
Peru	May 1, 1979	Oct. 17, 1979	FCMA
Canada	Sept. 12, 1979	Sept. 4, 1980	FCMA
Costa Rica	Feb. 1, 1980	Feb. 26, 1982	FCMA
Peru	Feb. 22, 1980	Apr. 19, 1983	FCMA
Mexico	July 14, 1980	Aug. 13, 1986	FCMA
Ecuador	Nov. 3, 1980	Apr. 19, 1983	FCMA
Mexico	Feb. 1, 1981	May 21, 1986	MMPA
Papua New Guinea	<u>1/</u>	<u>1/</u>	FCMA
Solomon Islands	Aug. 23, 1984	Apr. 17, 1985	FCMA
Costa Rica	Apr. 24, 1986	<u>2/</u>	FCMA

1/ A U.S. tuna vessel was seized by Papua New Guinea on February 10, 1982, but an embargo was not imposed owing to ongoing negotiations for a fishing licensing agreement between the American Tunaboat Association and the Government of Papua New Guinea, which was concluded on April 8, 1982.

2/ Embargo still in effect as of Oct. 1, 1986.

Health and sanitary regulations and labeling requirements

U.S. imports of canned tuna are subject to the same health and sanitary regulations that apply to domestically produced canned tuna. The regulations,

which are contained in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.), are promulgated and enforced by the Food and Drug Administration (FDA) of the U.S. Department of Health and Human Services to insure the wholesomeness and safety of the product. Imports of canned tuna must also conform to the FDA standards of identity for canned tuna (21 CFR 161.190). And, in accordance with regulations administered by the U.S. Customs Service (19 CFR 1304), containers of canned tuna imported into the United States must be clearly marked so as to indicate to the ultimate U.S. purchaser the name of the country of origin of the product.

Imported canned tuna is subject to inspection by the FDA upon entry to determine if the products are in compliance with these regulations. FDA inspectors generally conduct a random sample of imported canned tuna to examine the product for such conditions as decomposition, filth, adulteration, defective cans; for compliance with FDA standards of identity, such as the whitemeat vs. lightmeat designations; and for compliance with labeling requirements. According to an official of the FDA, the share of canned tuna imports that is sampled ranges between 1-5 percent. ^{1/} Table 34 shows detentions of canned tuna for inspection by the FDA during fiscal years 1982-85, by country of origin. These data represent imported canned tuna that was sampled for compliance with the above regulations. ^{2/} However, there are no available data concerning the actual amount, if any, of imported canned tuna that may have been refused entry for failure to conform to the regulations and returned to the country of origin.

In response to allegations concerning the quality of imports of canned tuna by the NMFS, three domestic tuna-canning firms and the Tuna Research Foundation, the FDA reported in February 1984, that it had reviewed its data on inspections of imported canned tuna for the previous 2 fiscal years and that the data did not indicate any major quality problems concerning the products.

Distribution

Frozen tuna

The distribution of frozen tuna involves the flow of tuna from the fishing vessels, where it is "produced," to the tuna-processing plants, where it is "consumed." This includes both the marketing and the physical movement of the frozen tuna. Distribution patterns for frozen tuna generally vary according to its source (domestic or foreign), destination (American Samoa, Puerto Rico, and Terminal Island), and species (white or light). Distribution

^{1/} H.R. Throm, "Quality Aspects of Canned Tuna Imported to the United States," Proceedings of Infotish Tuna Trade Conference, Bangkok, Thailand, Feb. 25-27, 1986.

^{2/} The table also presents data on detentions of canned tuna produced in U.S. plants (including plants in American Samoa).

patterns may also be affected by fishing conditions and by conditions affecting the refrigerated cargo industry, which transports a large proportion of domestically and internationally traded frozen tuna.

Frozen tuna generally is marketed either through contracts with individual vessels or tuna-fishing companies or through brokers. Most of the frozen tuna that U.S. processors buy from the U.S. tuna fleet is procured through contracts with individual tuna vessels. These contracts, which may include long-term supply provisions, usually contain flexible price provisions, with the price of the catch negotiated shortly before or upon arrival of the vessels. Most frozen tuna that is purchased on the international market, usually a "spot market," is procured through brokers. Most U.S. tuna-canning firms mix their tuna purchases in terms of the proportion procured on the spot market versus that procured through contracts. This allows flexibility in terms of variations in canned tuna production and the associated raw material requirements. In other words, the processors do not want to contract for too much frozen tuna in the event that their raw material needs decrease. In general, the proportion of frozen tuna supplies procured through contracts is higher for albacore than for yellowfin and skipjack, owing to the relative scarcity of albacore.

The terms of payment for frozen tuna typically involve withholding a share of the total payment until the final processing of the fish. For example, typical terms may specify that 95 percent of the payment will be made upon receiving shipping documentation for the frozen tuna, with 5 percent due upon processing the tuna, or a mutually acceptable time period. This is done in order to account for the possibility of fish being rejected for poor quality and for differences between estimated and actual weights of shipments. These terms may vary somewhat, depending on the relationships between buyers and sellers. For example, the terms of payment for transshipped frozen tuna may call for withholding a larger share of the final payment because of increased risk as to the certainty of the quality and weight accuracy of the shipment.

Frozen tuna is delivered to tuna-processing plants by two methods, either directly by the harvesting vessels or indirectly by refrigerated cargo vessels. In general, tuna harvested by the U.S. tuna fleet is delivered directly to U.S. processing plants by the vessels. This method of delivery is preferred by U.S. tuna vessel operators for several reasons. First, traditional fishing grounds in the eastern Pacific were not far from the original cannery locations in southern California. As the tuna fleet fished farther from the processing plants, they continued delivery to the plants, since support facilities were located nearby. Since trips may last several months, the tuna vessels would lay over for several weeks in between trips in their home ports, thus affording the crew time at home. Also, contractual and financial ties between tuna vessels and processors tended to reinforce this delivery method for domestically caught frozen tuna, as processors commonly would provide assistance for vessel support. As the processing plants developed and eventually were concentrated away from the continental United States, tuna vessels continued direct delivery because of tradition and uncertainties and disadvantages in transshipping. The uncertainties were

based on a general lack of experience by U.S. tuna harvesters in using this method of delivery. Disadvantages of transshipping include increased costs, as transshipping charges are usually borne by the shipper, and added risk, since another link that may affect the quality (and price) of the delivered product is introduced in the distribution chain. Also, confidence in the terms and the prospect of payment was lower for transshipping. Furthermore, frozen tuna generally must be transshipped from points along established shipping routes, and these points are not always advantageous for direct delivery to the processing plants.

However, in recent years, U.S. tuna harvesters have increased transshipping activity. This was caused principally by the increase in exports of tuna to Thailand by U.S. harvesters. These exports were generated by increased demand for frozen tuna in Thailand caused by contracts initiated by U.S. canning firms for canned tuna to be produced in Thailand and distributed in the U.S. market. The frozen tuna exports to Thailand were transshipped via Guam and Tinian.

Frozen tuna that is imported by U.S. processors historically had to be transshipped because foreign-flag fishing vessels are prohibited by law from landing their catch in U.S. ports. However, with the development and growth of American Samoa as a U.S. tuna-canning center, foreign tuna vessels began to deliver frozen tuna directly to plants at this location. ^{1/} Imported tuna utilized in processing plants in southern California and Puerto Rico must still be transshipped.

The delivery of frozen albacore tuna usually is by transshipment. This is due to the fact that almost all of the albacore used by U.S. processors is imported. Major albacore transshipping stations, or areas where the frozen tuna is landed and/or loaded onto refrigerated cargo vessels, include St. Martin in the Caribbean; Las Palmas in the Canary Islands; Montivedeo, Uruguay; Cape Town, South Africa; Port Lewis, Mauritius; Reunion Island; and Singapore. Other types of tuna (lightmeat), mostly yellowfin and skipjack, are more often delivered directly to the processing plants, because a much greater proportion of frozen tuna in this category is supplied by the U.S. tuna fleet.

Transshipping charges vary according to the supply of, and demand for, refrigerated transport vessels. These conditions may vary considerably seasonally or from year to year. Current transshipping charges for frozen tuna between major sources and destinations are presented in table 35. Competition for the services of refrigerated cargo vessels is strong at times. For example, industry sources have stated that increased frozen fish production in Alaska has been increasing such competition recently.

^{1/} Foreign-flag fishing vessels are permitted to land tuna in American Samoa since it is not included in the Customs Territory of the United States.

Canned tuna

The distribution of canned tuna involves the flow of canned tuna from the processing plant to the final outlet. General distribution patterns for canned tuna are relatively uniform throughout the industry in terms of marketing practices and physical distribution methods. Most domestically produced canned tuna is marketed through a network of brokers. This system is advantageous to the tuna processors because it generally decreases marketing costs, since it eliminates the need for field sales offices, and because it provides an excellent source of current information on competition in each market area. According to industry members, there currently are in excess of 200 brokers that sell U.S. canned tuna. These brokers generally handle a full line of food products, including the pet food produced by the tuna processors. The brokers and processors generally have long-term relationships without a large turnover, although most processors periodically appraise the performance of their brokers. The broker system is divided on a geographic basis. In some cases, an individual tuna-canning firm may utilize different brokers depending on the type of pack (i.e., advertised brand vs. private label). Each broker generally handles only one brand of canned tuna, as this is usually a requirement of the tuna processor. Brokers are compensated on a fee basis, which is calculated either at a specific rate per case or on a percentage of case sales. Current brokers fees are in the 2- to 3-percent range. Some domestically produced canned tuna is distributed directly to retail outlets (usually larger customers), but this method is less common than that using the broker network.

Although brokers handle the marketing of the canned tuna, the producers directly bill the final buyers for the product. Terms of sale usually include a cash discount for payment within a specified time (typically 2-percent discount for payment within 10 days of the invoice date, net payment due in 11 days). Also, the buyer usually is responsible for freight charges.

Domestically produced canned tuna is generally transported from the processing plants by cargo vessel (since the plants are located on islands) and is delivered to regional warehouses throughout the country. These warehouses are generally owned by nontuna interests, and space is leased for canned tuna. The canned tuna is shipped from the warehouses to the final buyers by truck, usually at the expense of the buyer, as canned tuna is usually sold on a f.o.b. warehouse basis. The warehouse turnover rate for canned tuna in general is about four to six times per year, which means a case of canned tuna usually remains in the warehouse (and is subject to storage charges) for about 2 to 3 months. Storage costs currently range between about 50 and 60 cents per hundredweight (including handling charges), which is less than 1 percent of current average wholesale case prices for canned tuna. Total transportation costs for domestic processors are also relatively low, averaging about 1 to 3 percent of the wholesale case price.

Imported canned tuna generally is marketed by the importing firm, which may also act as a broker for some domestically produced canned tuna in the private label sector. Imported canned tuna is also distributed by institutional food brokers, since imports are concentrated in this sector.

Imported canned tuna is transported by cargo vessel from the exporting country. The costs associated with this (the import charges) can be approximated by the difference between the c.i.f. value and the customs value published by Census for imports. ^{1/} The following tabulation shows the customs values and the import charges for U.S. imports of canned tuna from the top four foreign suppliers (which accounted for 81 percent of the total value of such imports) in 1985 (data from the U.S. Department of Commerce):

<u>Supplier</u>	<u>Quantity</u> <u>(1,000</u> <u>pounds)</u>	<u>Customs</u> <u>value</u> <u>(1,000</u> <u>dollars)</u>	<u>Import charges</u> <u>(1,000 (per</u> <u>dollars) pound)</u>		<u>Import</u> <u>charges'</u> <u>share of</u> <u>value</u> <u>(percent)</u>
Thailand.....	122,666	111,852	6,497	\$0.05	5.8
Taiwan.....	23,472	29,801	1,388	.06	4.7
Japan.....	23,703	28,142	1,835	.08	6.5
Philippines..	30,797	25,930	2,143	.07	8.3

Once the imported canned tuna is entered into warehouses, it is subject to the same storage and transportation methods and charges as is domestically produced canned tuna. Also, the terms of sale generally are similar to those for domestically produced canned tuna.

Marketing Practices and Prices

Marketing practices ^{2/}

Canned tuna is marketed in the United States through retail outlets and through restaurants and other institutions, either under advertised labels (the processors' own, such as Star-Kist) or private labels, such as those belonging to a retail chain (for example, Safeway's Sea Trader label). Most advertised brands have nationwide distribution, although market shares held by each brand in particular regions of the country may differ. Various types of advertising media are used for the advertised brands; such advertising is generally accompanied by other methods of promotion such as discounts off list prices.

^{1/} The difference between the c.i.f. value and customs value is generally referred to as import charges. Import charges represent the aggregate cost of all freight, insurance, and other charges, but do not include U.S. import duties incurred in bringing the merchandise from alongside the carrier at the port of exportation in the country of exportation and placing it alongside the carrier at the first port of entry in the United States.

^{2/} This section focuses on the marketing of canned tuna only, since frozen tuna is a homogeneous commodity, the marketing of which is not very complex and was adequately addressed in the earlier discussion on distribution.

Although the advertised brands of tuna have a wide geographic distribution, a particular processor does not necessarily concentrate all its sales effort on its particular brand. It is not uncommon, for example, for a processor, on specific orders, to pack tuna under the private labels of large distributors or chainstores. On occasion, a processor will sell its output, or part of it, to another processor which, in turn, markets that tuna under its own advertised label; this has also been common with respect to foreign processors in contractual arrangements with U.S. processors that have established market channels.

Generally speaking, the purpose of the advertised brands is twofold: to make the consumer brand conscious, a very important aspect of marketing through retail channels; and, equally as important, to assure the widest possible distribution of the product within the limits of the processor's budget. Although national advertising and distribution can involve heavy advertising and promotion costs, the processor is relatively unaffected if it should lose some of the distributors handling its brand of tuna if it has a large number of such distributors. Brand differentiation forces large retailers and other distributors to carry the products of more than one canned tuna processor rather than just carry "canned tuna," and thereby increases the processor's market coverage.

Advertising methods employed by tuna processors include coupons, magazine ads, retailer-sponsored local newspaper ads, and, less commonly, television commercials. According to industry sources, methods such as coupons work well because they bring a consumer directly to the particular brand; television ads, on the other hand have an element of generic advertising to them, in that a consumer may remember the brand less than the fact that tuna was advertised, thereby helping sales of other brands as well as the specifically advertised brand. In addition, television advertising can be more expensive—even considering the number of potential consumers reached—than coupons or magazine and newspaper ads. U.S. processors frequently let retailers do their advertising for them, by such means as placing ads in local papers in exchange for a discount off the wholesale prices listed by processors or distributors.

The existence of several types and styles of canned tuna, as described in the section on retail prices, indicates that there are multiple aspects to the marketing of tuna. Certainly, the role of price competition cannot be underestimated. As part of an overall marketing strategy, pricing strategy for some U.S. processors is designed to capture a larger market share (usually carried out with low prices), and for others is intended to bring as great a return to the company (with less emphasis on competitive price levels). Although cut-throat competition is a common characterization of the canned tuna market made by those in the industry, price competition is but one means by which processors compete with each other. The heavy reliance on brand identification through advertising is a common method of competition between producers of slightly differentiated products. Creating brand loyalty involves not simply the image of consistently high product quality—a

particularly important aspect of marketing fish products—1/ it requires processors to provide consumers with products to suit a variety of needs. In view of this, although the principal way tuna is marketed to retail consumers remains the canned product, it comes in a variety of sizes and packing media. Canned tuna is certainly not a homogeneous product in the consumer's eyes—most consumers could probably immediately name one or two brands, and enough prefer the national brands to pay a premium over the price for similar types of private-label, or house brands. 2/

The nature and extent of competition from imported canned tuna is influenced by the way canned tuna is marketed. Because of the difficulty in establishing a market for a new brand, a substantial proportion of the increase in imports of canned tuna in recent years has been marketed under the labels of the major processors and distributed through their established market channels. Also, imports have been distributed by retailers under their own labels, such as a supermarket's private label. Such brands are typically preferred by consumers primarily on the basis of price advantages.

Price determination mechanisms

Prices in the U.S. tuna market are set at each of three levels of the market: the primary production level, at which frozen tuna landed by harvesters is delivered to processors (ex-vessel prices); a middle, or wholesale level, at which processors deliver canned tuna to distributors, or directly to retailers and institutions (wholesale prices); and a final distribution level, at which retailers and institutions distribute canned tuna to final consumers (retail prices). Each of these market levels is characterized by unique marketing institutions through which prices are determined. At all levels, imported supplies of tuna influence price-determination mechanisms.

1/ The importance of such an image cannot be discounted. In March 1963, two Americans died from botulism after eating canned tuna processed by a relatively small west coast firm. The event resulted in a 10-percent decline in industry-wide tuna sales that year. However, processors of well-known brands suffered much less, according to industry sources, because of consumers' perception of them as producers of high-quality canned tuna. A similar stronghold on the market was attributed to leading brands during the 1970-71 FDA investigations into alleged unsafe mercury levels in tuna products.

2/ The recent withdrawal from the retail market of Pan-Pacific's American brand canned tuna, introduced in 1985, illustrates the difficulty new or little known brands have competing with established advertised brands. This product, according to press reports, was the first nationally advertised brand to be introduced in the U.S. market in 30 years, and was priced to compete with the larger processors' own advertised brands. Due to its being produced in the sole remaining continental-U.S. plant, it relied on its Buy American appeal to establish a market ("New Tuna Brand Waves Flag" New York Times, May 2, 1985; see also Seafood Business Report, March/April 1985, p. 10). However, as reported in the trade magazine Fishing News International (25:4, 19), the marketing effort failed, and a \$4 million advertising program was cancelled in 1986.

Ex-vessel prices.—The price received by tuna harvesters for frozen tuna is called the ex-vessel price of frozen tuna. The ex-vessel tuna price can vary by species, size of individual fish, general condition of the catch, and port of landing. There are, therefore, several ex-vessel tuna prices at any one time. They are all determined in a similar way, however, and will be discussed in this section, unless otherwise noted, as a single ex-vessel tuna price. Variations in price across product types will be discussed later in the report.

A number of factors influence the U.S. ex-vessel tuna price. On the supply side, the principal influence is, of course, the quantity of fish landed. Since tuna is perishable, landings cannot be stored and must be put on the market as soon as the vessel arrives in port. The major determinants of the level of domestic landings include the number of active harvesting vessels (itself partly a function of the ex-vessel price of tuna in past time periods), and the availability of tuna in the ocean. Tuna availability depends on environmental and biological conditions affecting tuna populations and their reproductive and survival rates, as well as on past harvesting activity. The greater the tuna harvest in past time periods, everything else being the same, the smaller the current tuna population will be and the less tuna will be harvested in the current time period. In addition, the availability of imported supplies of frozen tuna affects U.S. ex-vessel tuna prices. If prices in other world markets fall, or if world landings rise as a result of environmental or other exogenous factors, the supply of imported frozen tuna will increase, putting downward pressure on U.S. ex-vessel prices.

The important influences on the demand for domestic frozen tuna in the U.S. market include the wholesale price of canned tuna, the availability of imported frozen tuna, and the number and capacity of the processors, the only buyers of frozen tuna. In effect, the demand by processors for frozen tuna is derived from the demand faced by them for their output of canned tuna. When the price of one changes, usually the price of the other moves in a similar direction. When the availability of imported frozen tuna increases (and the price falls), the demand for domestic frozen tuna of similar characteristics tends to fall, and vice versa. ^{1/} The number and capacity of domestic processors clearly affects total demand for frozen tuna. If the number and/or combined capacity of the processors falls, for example, less canned tuna is processed and, consequently, less frozen tuna is required from harvesters.

In many markets, supply and demand determine price through the competitive interaction of numerous buyers and sellers. However, such has not

^{1/} This line of reasoning was questioned by one U.S. industry source, who in a Commission staff interview asserted that a decline in the price of imported frozen tuna allows processors to offer a higher price to domestic vessels, since the processors' average cost of frozen tuna would be unchanged. This would not be likely, however, if, as is currently the case, the rising supplies and declining prices of imported frozen tuna were associated with rising worldwide production (and export to the U.S. market) of canned tuna. To the extent that such canned tuna exports would reduce the U.S. canned tuna price, domestic processors would be motivated to reduce their input costs (including domestic frozen tuna prices) as much as possible.

traditionally been the case in the U.S. market for frozen tuna. Historically, two basic systems have determined ex-vessel prices: (1) that of an individual contract between a vessel operator and a processor, in which the processor typically has an equity or other financial interest in the vessel and is thereby guaranteed delivery of the vessel's tuna catch; or (2), for independent vessels, that of a fleet-wide contracted price arranged through negotiations between the American Tuna Sales Association (ATSA), representing the U.S.-flag fleet of independent tuna purse seiners, and the processors.

Under the first system, the ex-vessel "price" is actually the unit value of the catch less deductions for loans made by, or vessel expenses paid by, the processor. In the case of a wholly processor-owned vessel, the "price" can simply be a transfer payment that may reflect conditions in the labor market for crew members as much as conditions in the tuna market. Thus, the price received by the vessel operator does not necessarily reflect the competitive, or market value of the tuna. Typically, such a price will be below the market value, and must be adjusted upward to account for the nonprice benefits received by the vessel operator from the processor. ^{1/} In the case of an interest-free advance for operating expenses, this benefit is the value of the advance times an appropriate interest rate over the length of time the advance is made (typically, the length of the trip). Another benefit would be the reduced interest rate on the vessel mortgage obtained by the vessel owner as a result of co-ownership (and/or loan guarantee) by a processor, or the downpayment provided by the processor for the vessel acquisition. Still another benefit would be, in the case of a wholly processor-owned vessel, a (fixed) fee paid by the processor to the captain or vessel manager for operating the processor's vessel.

The price negotiated by ATSA is more accurately termed an ex-vessel price, since it is generally more reflective of tuna market conditions and is more frequently set in an arm's-length transaction; in addition, according to industry sources, on occasion it acts as a guide for prices in non-ATSA price negotiations. Since 1967, ATSA has been negotiating on behalf of owners of independent U.S.-flag vessels with U.S. processors to determine ex-vessel tuna prices. While the base ATSA price is fleetwide, the negotiations and final contracted price are necessarily determined for a specific vessel rather than for the fleet as a whole, in part owing to existing contractual (i.e., exclusive delivery) arrangements some vessels have with processors, and to the financing arrangements noted above that some vessel operators have with processors. The specifics of such arrangements, such as how much of a loan is to be paid back from the proceeds of a trip, must be taken into account in adjustments to the base ATSA price to arrive at a final transaction price, much the way adjustments must be made under the first system described above.

^{1/} For a discussion of reasons for the gap between the world market price of frozen tuna and the ATSA contract price, see E. Gallick, Exclusive Dealing and Vertical Integration: The Efficiency of Contracts in the Tuna Industry, Bureau of Economics Staff Report, Federal Trade Commission, August 1984, appendix M, pp. 137-141.

Over the past decade, there has been a significant change in the manner in which ex-vessel tuna prices in the U.S. market are determined, especially for frozen tropical tuna landed by purse seiners. For several years, the ATSA price for a vessel's catch was negotiated prior to the vessel's departure on the fishing trip covered by the negotiation. As a result, prices were fixed and known for as long as several months at a time. Recently, however, negotiations often have not been completed until the vessel is on its return or is back in port. A vessel owner with a vessel's hold full of tuna waiting to be unloaded and the prospect of waiting unnecessarily before going out on another trip is not in a particularly strong bargaining position with a processor that not only has an inventory of frozen tuna but other domestic and foreign sources of supply available to it. Many industry sources interviewed by the Commission's staff view the bargaining effectiveness of ATSA as being severely diminished, and some point to increasingly delayed negotiations and often lengthy waiting periods before a vessel is unloaded as evidence that ATSA no longer effectively negotiates ex-vessel tuna prices.

Some explanations for ATSA's diminished role have been offered by industry sources in staff interviews. Some sources point to the weakened financial position of tuna harvesters. On average, the U.S. tuna purse seiner fleet is in poor financial health, as described elsewhere in this report. This weakens the harvesters' ability to effectively bargain with the processors. Representatives of some processors claim that ATSA is too inflexible and is a difficult negotiator; the availability of alternative supplies—imports or the catch from company-owned vessels—allow processors to outwait ATSA. Another explanation may be found in the increase in the world catch of tuna. Although U.S. processors are importing less frozen tuna, they nonetheless have such imports readily available to them at generally declining prices. As a result, the frozen tuna market in the United States, and worldwide, has become a "buyer's market." Some in the industry believe this exacerbates an already imbalanced situation in the U.S. market, further enhancing the market power allegedly held by certain U.S. processors. Others believe the U.S. tuna market is now more competitive; that the decline in ATSA's power has eliminated it as a single seller of domestic tuna from independent purse seiners; and that the ATSA price, to the extent it still exists, is merely a ratification of a market-determined ex-vessel price.

U.S. processors' purchases of imported frozen tuna are usually made in direct deals with foreign exporters, as opposed to purchases made through a U.S. importer/broker. In most cases, processors bid on the open, or "spot" market, offering bids through telex communications with foreign vessel owners or marine transshipment companies. Representatives of U.S. processors report that, because of the large number of buyers and sellers, the international market for frozen tuna is quite competitive. Conditions in markets abroad, such as in Europe, Africa, and the Far East, affect the U.S. frozen tuna market, since frozen tuna is homogeneous and transportable around the world. The quality of such imported supplies varies little by source; and, according to representatives of U.S. and foreign processors interviewed by Commission staff, at any one time the going (delivered) price from any particular source is usually within \$5 to \$15 per ton (less than 5 percent) of the price from all other sources.

Wholesale prices.—The price at which processors sell canned tuna to distributors, retailers, and institutions is the wholesale tuna price. In the U.S. market, the wholesale price of canned tuna at any point in time varies according to species (whitemeat versus lightmeat), packing medium (oil versus water or brine), size of containers (typically, the smaller the can the higher the unit price), and the brand under which it is marketed. With respect to price determination mechanisms, the latter two factors—the container size (reflecting different types of customers) and the brand—are the more important, while the species and packing medium generally affect price levels and trends, which are discussed later in the report.

Canned tuna pricing at the wholesale level is very closely tied to prices at both the ex-vessel and retail/institutional levels. Wholesale tuna prices are influenced not only by the supply, often volatile and unpredictable, of a perishable product, but as well by the vagaries of consumer demand for canned tuna, prices of the various substitutes for canned tuna, and changing tastes that affect consumer demand. Added to this as factors influencing wholesale tuna prices are the vital roles in marketing canned tuna (particularly for household consumption) played by advertising and brand preferences, and the high degree of seller concentration in the wholesale market.

The need of processors to balance these two ends of the tuna market has resulted in a complex system of canned tuna pricing and marketing. Moreover, nonprice marketing mechanisms cannot be separated from price determination mechanisms at the wholesale level, since it is at this stage that tuna is transformed from a homogeneous raw commodity to a brand-specific, differentiated consumer product.

The base wholesale price, the list price, is used as a starting point from which to arrive at the final net price. Promotional allowances, bill-backs, allowances for returns, and other adjustments to the list price tend to make the net price lower than the list price. The list price is revised periodically on a somewhat irregular basis (every few months or so) depending on demand conditions in the wholesale market and cost conditions (including prices for frozen tuna). More frequently, the net price fluctuates according to distributor or retailer promotional activity, occasional market pressures forcing changes in price to meet local competition, and so on. Company officials interviewed by the Commission's staff indicated that adjustments to list prices are more common with staple items such as the 6.5 ounce lightmeat can, while specialty items tend to experience less price activity.

In a market with differentiated products, such as that of canned tuna, some producers can influence price, which ability makes it necessary for them to establish their pricing policy with due consideration given to the overall goals of the firm. Interviews by Commission staff of U.S. company officials revealed variations in the marketing strategies of those firms and corresponding differences in their respective pricing policies. All interviewees viewed the wholesale canned tuna market as highly competitive and price sensitive. Careful attention is paid by all firms to their rivals' pricing and marketing behavior, and responses to rivals' changes must be

planned and executed quickly. Occasional skirmishes in the form of local price wars are not uncommon and probably serve as a means by which the firms learn their rivals' attitudes toward price competition. Prices are most commonly set to "meet the competition—one in particular," in the words of one executive. Such a strategy is an attempt at maintaining market share while aiming at a target or minimum acceptable rate of return on sales or investment. In assessing the actions of their larger rivals, some tuna processors see their competition as "aggressive," willing to cut prices substantially to increase market share, and able to do so because of advantageous cost factors. The "aggressive" firms, on the other hand, view themselves as "competitive," and seem to seek to establish wide-ranging market positions to provide market stability and security. In all cases, price competition is the dominant form of competition, followed by nonprice brand promotion and product diversity.

The role of imports in wholesale-price determination depends partly on the type of market. Although in all markets import competition increases downward pressure on prices, this pressure is more clearly felt in the institutional trade, according to some industry sources, because of the greater role played by price competition than brand loyalty. ^{1/} In the cases of the U.S. processors that also import canned tuna, these imports are priced and marketed in a fashion identical with domestic production. Such importation occurs primarily to fill temporarily insufficient domestic productive capacity or to fill holes in the range of the firm's product types that are left by relative cost disadvantages.

Retail prices.—The retail market discussed here includes institutions, such as restaurants, schools, and the military, in addition to such commonly thought of retail outlets as supermarkets and grocery stores. It is through all these channels that tuna is distributed to the final consumer. However, retail prices of canned tuna in food stores are conceptually different than the "price" of tuna served through institutional channels. At a grocery store, the consumer is faced with the decision whether or not to purchase canned tuna at a known and clear price; whereas at a restaurant the consumer typically is "buying" other commodities—services as well as side orders—along with the tuna entree. Thus it is difficult for the consumer, as well as a market analyst, to assess the price of the fish itself in an entree on a menu. The "price" is even more difficult to determine for school, hospital, or military establishments, where not only is a choice frequently not possible, but there is no price, per se, paid for the meal. As a result, the Commission staff has only been able to assess retail prices of tuna

^{1/} In addition, according to some U.S. importers interviewed by the Commission's staff, foreign sources of supply to the institutional trade are dependable and consistent, while domestic processors will enter or exit the institutional market according to the relative attractiveness of prices. This charge was denied by most of the processors' representatives, who claim that the institutional market, albeit small, is a long-standing and important part of their overall operations.

marketed through normal retail outlets, and not that marketed through institutions. ^{1/}

Retail prices of canned tuna are set by supermarkets, chain food store organizations, and small, independent ("Mom and Pop") grocery stores. These outlets sell a vast array of food products and other goods, and canned tuna is typically no more important than most other items. It only occasionally serves as a "loss leader" to attract customers into the store, and retailers would probably not go to great expense to advertise their canned tuna were it not for the promotional allowances of distributors and retailers. ^{2/}

Retail tuna prices are, therefore, usually set in accordance with an overall marketing strategy of the retailer. Retail prices are set according to existing market conditions: local competition and customer tastes and incomes, as well as such cost factors as overhead and the retailer's cost of the tuna. Food retailing is a high volume, low profit-margin business, ^{3/} and retailers keep little inventory, depending on high turnover for their net return. However, there appear to be differences in the pricing of advertised versus private-label brands. Virtually any food store carrying canned tuna carries at least one of the major nationally advertised brands of the U.S. processors. A private-label brand of tuna is marketed only by the retailer controlling the brand name, and supplements its sales of advertised brands—a common form of price discrimination by selling what is essentially identical to the advertised brands to different customers at different prices, the lower price being charged for the private-label product. However, despite the lower price for private-label tuna, if the retailer's choice is either advertised or private label, but not both, it appears the retailer will choose to market advertised brands of tuna.

Price levels and trends

Ex-vessel prices.—The product classifications for which ATSA negotiates ex-vessel prices indicate the effect such factors as fish size and condition have on these prices. Table 36 presents the ex-vessel tuna contract prices negotiated by ATSA during November 13, 1978–November, 1985. Several points about the ATSA prices are important. The ATSA prices cover only yellowfin and skipjack, the two dominant species of tropical tuna. Also, for each species, the price schedule distinguishes between several fish sizes, with higher prices for larger fish. From 1982 to 1985, separate prices were listed for landings in Puerto Rico and American Samoa.

Most significantly, the ATSA price schedule became more complex during 1978–86, with increasingly disaggregated product classifications. In 1979–81,

^{1/} The consequence of this omission is small, since only about 10 percent of all canned tuna is distributed through institutional channels.

^{2/} This is probably true for the majority of food items in the typical supermarket.

^{3/} Weiss, Leonard, Case Studies in American Industry, 3d edition (John Wiley & Sons, 1980), pp. 251–2.

there were two prices for yellowfin and three for skipjack, covering all ports, regardless of condition of the catch. By 1985, there were five prices for skipjack and four for yellowfin, separate prices for Puerto Rico and American Samoa, and premiums and discounts according to product quality. The possible effects that such product disaggregation has had on average ex-vessel prices is discussed below.

Although the changing product categories in table 36 make analysis of trends in the ATSA price series difficult, it is possible to see an overall rising trend in prices from late 1978 through 1981. In 1982-83, prices appeared to stabilize at highs of \$300-\$400 per ton for small skipjack, \$800-\$950 per ton for large skipjack, \$700-\$900 per ton for small yellowfin, and \$1100-\$1200 per ton for large yellowfin. Beginning in 1983, one can see a general decline in prices through 1985, when prices reached lows of \$230-\$430 per ton for small skipjack, \$560-\$605 per ton for large skipjack, \$230-\$560 per ton for small yellowfin, and \$630-\$730 per ton for large yellowfin.

Another means by which to examine prices, or at least average unit values, and possibly a more relevant way to assess the changing value of tuna, is to examine the average unit values of the tuna delivered to U.S. processors by U.S. vessels. This provides a different view of price, because average unit values combine the ATSA prices with the wide range of fish sizes across which the typical vessel's catch is distributed. It is a more relevant measure of the value of the tuna from the harvester's point of view, insofar as tuna harvesters are not generally able to select the size of tuna they catch, and so cannot always provide those fish sizes that bring the best prices. Instead, they must aim for the highest possible average value of the catch, subject to the constraint of their inability to discriminate among fish sizes when fishing. Table 37 presents data on the average unit value of albacore, skipjack, and yellowfin delivered by U.S. purse seiners to U.S. processors.

The annual average unit values of all major species of tuna at the ex-vessel level experienced swift increases during 1979-80 and into 1981. Average ex-vessel unit values of albacore increased from \$1,286 per ton in 1979 to a peak of \$1,880 per ton in 1981, an increase of 46 percent over the 2-year period. The average ex-vessel unit values of yellowfin and skipjack, although consistently lower than albacore throughout the period, followed the same trend: the average unit value of yellowfin increased from \$863 per ton in 1979 to \$1,180 per ton in 1980, an increase of 37 percent in 1 year; at the same time, skipjack increased from \$728 to \$1,063 per ton, an increase of 46 percent. All three unit-value series declined after 1980-81. The average ex-vessel unit value of albacore declined by \$800, or 43 percent, from its 1981 peak to \$1,080 per ton in 1985. Similarly, the average ex-vessel unit values of yellowfin and skipjack declined from their 1980 peaks, as yellowfin dropped by \$320, or 27 percent, to \$860 per ton in 1985, and skipjack fell by \$423, or 40 percent, to \$640 per ton in 1985.

In view of the apparent increase in ATSA contract prices for skipjack and yellowfin during 1980-83, what caused the average ex-vessel unit values of these species to decline during that period? In addition to the possibility

of errors in the data, there are at least two possible explanations: (1) the creation of grades based on quality may have allowed buyers (the actual judges of the quality of the catch) to cut prices by unnecessarily downgrading fish; and (2) the average size of the fish harvested could have declined, bringing down the weighted-average unit value of the catch. Sufficient data on the actual and measured grades of quality of the catches are not available, and therefore, the first possible cause cannot be examined. To examine the second possible cause, we need to know the trend in the average size of tuna harvested by U.S. vessels. Adequate data on the size range of tuna deliveries by U.S. vessels to U.S. canneries are not available. However, data on the annual size distribution of yellowfin and skipjack harvested by all nations' vessels in the eastern Pacific, the principal area fished by U.S. harvesters during 1978-85, are shown in table 38.

In table 38, the only clear trends during 1980-83 are for yellowfin, showing a general increase in the average size of fish caught: the proportion of fish in the 60+ and 20+ size categories clearly increased, from 22.9 percent and 47.1 percent, respectively, in 1980 to 37.9 percent and 60.0 percent in 1983. At the same time, small yellowfin declined as a proportion of the catch, with fish in the category "under 3 pounds," for example, declining from 2.6 percent in 1980 to 1.7 percent in 1983. There are no obvious trends in the corresponding data on the distribution of skipjack in table 38. Since, given the positive correlation between fish size and price, an increasing average size of yellowfin would tend to raise, not lower, the average unit value of the catch, the explanation for the decline in average unit values must be found elsewhere.

Wholesale prices.—The Commission requested U.S. processors and importers to submit, through questionnaires, their sale and price information for January 1984–January 1986, for a variety of tuna products categorized by container size, brand, packing medium, and the pack style. 1/ Data were obtained from six U.S. processors and seven importers, and these are presented in tables 39 through 42. All prices in these tables are on an f.o.b. east coast basis. 2/

The price of domestic whitemeat tuna packed in water and sold in private brand retail-size containers experienced moderate change during the nine-quarters sample period as shown in table 39. 3/ The price increased by 2.8 percent, from \$38.92 per case in January–March 1984 to \$40.00 per case in April–June 1985, and then decreased during each of the next three quarters, to

1/ For price data during January 1979–December 1983, see Certain Canned Tuna Fish: Report to the President on Investigation No. TA-201-53 . . ., USITC Publication 1558, August 1984, pp. A-78 through A-81.

2/ Data submitted in response to the questionnaires are insufficient to make a price comparison for canned tuna priced on an f.o.b. west coast basis.

3/ For these prices during January 1979–March 1984, see Certain Canned Tuna Fish: Report to the President on Investigation No. TA-201-53 . . ., USITC Publication 1558, August 1984, pp. A-79 through A-81.

\$36.94 in January–March 1986. The price of imported whitemeat tuna packed in water and sold in private–brand retail containers increased by 13.6 percent, from \$37.56 per case in January–March 1984 to \$42.66 per case in January–March 1985, then declined to \$34.64 in January–March 1986. The price of domestic whitemeat tuna was lower than that of imported whitemeat tuna in six of the quarters.

The price of domestic lightmeat tuna packed in water and sold in private–brand retail containers was stable in 1984, and dropped to a low of \$20.94 per case in October–December 1985. The price of the same product imported from foreign countries ranged from \$24.25 per case in January–March 1986 to \$26.71 per case in July–September 1985. During the sample period, the price of the imported lightmeat tuna was usually higher than that of the domestic product.

As a result of the relatively weak demand for canned tuna in oil in the U.S. market and because of a higher tariff for tuna in oil, domestic processors have faced little direct import competition in any tuna products packed in oil. The price of domestic lightmeat tuna packed in oil and sold in private–label retail containers changed in a similar pattern as that of the lightmeat tuna packed in water. The price decreased from \$27.32 in January–March 1984 to \$23.13 in October–December 1985, and then rose to \$24.10 in January–March 1986.

Usually, the unit price of a tuna product in a larger container is lower than that of the same product packed in a small container. ^{1/} The price of domestic whitemeat tuna canned in water and sold in institutional–size containers ranged from \$40.87 per case in April–June 1985 to \$48.25 per case in January–March 1986 as shown in table 40. The price of the same product imported from foreign countries increased by 16.9 percent, from \$40.77 per case in January–March 1984 to \$47.67 per case in April–June 1985, and then declined to \$42.66 per case in January–March 1986. Except in April–June 1985, the price of domestic tuna was always higher than that of imported tuna over the nine–quarter period.

Compared with the price of whitemeat tuna, the price of lightmeat tuna canned in water and sold in institutional–size containers was relatively stable. The price of domestic lightmeat tuna canned in water and sold in institutional–size containers decreased by 8.9 percent, from \$30.00 per case in January–March 1984 to \$27.32 per case in January–March 1985. The price of imports of the same product packed in the same size container ranged from \$25.68 in January–March 1986 to \$29.59 in April–June 1984. Like the price of domestic whitemeat tuna, the price of domestic lightmeat tuna canned in water was higher than that of imports in eight of the quarters. The price of

^{1/} For instance, in January–March 1984, the price of domestic whitemeat tuna packed in water, sold in private–label retail–size containers (312 oz.) was 12.47 cents per ounce ($\$38.92 / 312 = \0.1247). For the same domestic product packed in institutional–size containers (399 oz.), it was 11.8 cents per ounce ($\$47.10 / 399 = \0.118).

domestic lightmeat tuna canned in oil was very stable during the sample period according to reports by domestic processors.

Since consumers often prefer advertised brands, the price of advertised-label tuna is usually higher than that of the same product with private labels, especially for those in retail-size containers. Table 41 shows a similar pattern of domestic and foreign prices of whitemeat tuna canned in water and sold in advertised-label retail-size containers. The price of domestic whitemeat tuna increased by 5.6 percent, from \$41.42 in April-June 1984 to \$43.74 in January-March 1985, and then it declined. The price of the same product imported from foreign countries also peaked in January-March 1985 and declined for the remainder of the sample period. However, the price of imported whitemeat tuna was always higher than that of domestic whitemeat tuna over the entire sample period.

The price of domestic lightmeat tuna canned in water sold in advertised-label retail-size containers decreased by 16.5 percent, from \$29.31 per case in January-March 1984 to \$24.47 per case in April-June 1985 as shown in table 41. The price of the product in the same category imported from foreign countries was stable over the nine-quarter period, ranging from \$24.92 in October-December 1984 to \$27.33 in July-September 1984. The price of domestic lightmeat tuna canned in water was higher in six of the quarters. The price of domestic lightmeat tuna canned in oil and sold in advertised-label retail-sized containers followed a pattern similar to that of the same domestic product canned in water, reaching a low of \$24.33 in April-June 1985.

Table 42 shows the prices of both whitemeat and lightmeat tuna sold in advertised-label institutional-size containers. The price of domestic whitemeat tuna packed in water fluctuated within a range from \$39.94 per case in January-March 1984, to \$47.08 per case in October-December 1985. The price of imported whitemeat tuna in the same category increased by 11.3 percent, from \$40.76 in January-March 1984 to \$45.35 during the corresponding period of 1985. The domestic price was higher than the foreign price in four of the quarters.

The price of domestic lightmeat tuna canned in water and sold in advertised-label institutional-size containers fluctuated widely, increasing from \$27.70 in April-June 1984 to \$30.70 in October-December 1984 and then falling to \$26.03 in January-March 1985. The price of tuna imports in the same category remained fairly steady at about \$28 in 1984, then fell to \$26.23 in January-March 1985, and to a new low of \$24.50 in January-March 1986. The domestic price was higher in six of the nine quarters.

The price of domestic lightmeat tuna canned in oil and sold in advertised-label institutional-sized containers was relatively stable over the sample period compared with those of tuna in other categories. The price fluctuated within a range of \$33.54-\$34.98 in 1984 as shown in table 42. No sales of tuna in this category were reported in January-March 1985 or 1986.

Retail prices.—Retail canned tuna prices, like wholesale prices, vary according to several product characteristics, including species, pack style,

packing medium, container size, brand, and even type of store. Table 43 shows the retail prices of various canned tuna products on August 23, 1986 at five metropolitan Washington-area food stores, all within a 1-mile radius of each other.

One of the first observations one makes from table 43 is the wide array of different tuna products and brands in the large supermarkets (for example, 38 products or brands in store "B"), in contrast to the smaller stores, with only two products (different brands) in the local convenience store. A survey of typical neighborhood stores will indicate that a small grocery store will offer fewer brands or types of tuna than a large supermarket, yet the absolute quantity of cans of any one type or brand may be similar in the two stores; to meet its relatively greater demand, the supermarket basically chooses to expand its product line or, more significantly, its brand selection, rather than simply stock more tuna on the shelves.

Several generalizations can be made from the data in table 43. Prices of advertised brands of the major U.S. processors are typically higher than those of lesser known or private-label (house) brands. An example is the price range for solid white, 6.5-ounce, water-packed tuna in store "B": Star-Kist, the lowest priced major brand, was priced at \$1.46, compared with \$1.39 for Deep Blue, a lesser-known national brand, and the store's house brand, selling for \$1.27, more than 50¢ below the highest priced brand.

Between stores, prices can vary substantially. For the same product just examined, the difference between the prices in store "B" and those in store "C" (situated less than one block away) range as high as 33¢ per can for a major brand, and 22¢ for the stores' respective private-label brands. Smaller stores seem to have higher prices, a combined result of their higher cost of purchasing the products (since they buy in less bulk) and the added value of convenience for their customers, according to the above stores' representatives interviewed by the Commission's staff. Even though they are geographically close, the small store offers fast service, for which customers are obviously willing to pay a premium. None of the stores surveyed offered imported canned tuna at the time of the survey; those store representatives who commented on that fact stated that they had no preference, and their distributor "just delivers tuna," regardless of country of origin. They believed that prices would be the same for imported and domestic canned tuna of otherwise similar characteristics (brand, can size, etc.). One of the supermarket chainstore representatives noted that final decisions on product sourcing and pricing are made at the chain's main office. In summary, then, it appears from this sample that canned tuna generally loses its national identity as it approaches the final consumer, becoming virtually identical with the domestic product at the retail level and is priced accordingly.

In regard to the direction of retail prices over time, if one accepts the assumption that retail prices of the various tuna products move together, one can view trends in retail prices by examining the prices of one or two major items. The National Marine Fisheries Service, in a project called Operation Price Watch, for many years published a monthly survey of retail stores in cities around the country to track retail fish prices, including the prices of solid whitemeat tuna in water and chunk lightmeat tuna in oil, both in 6.5 ounce cans. ^{1/} Figure 2 illustrates the trend in those prices during 1979-85.

^{1/} This publication was discontinued following the December 1985 issue.

LEVELS AND TRENDS IN WORLD TRADE

Global Production and Trade

Global production of frozen and canned tuna has been increasing in recent years, forcing prices down in world markets and, as a result, significantly changing world trade patterns between traditional producing and supplying nations. In 1979, according to data of the Food and Agriculture Organization (FAO) of the United Nations, global production of frozen tuna totaled 1.9 million tons; by 1984, production had increased to 2.3 million tons, an increase of 21 percent in 5 years. World production of canned tuna in 1979 amounted to 610,674 tons; such production increased by 40 percent in the next 5 years to 856,487 tons by 1984.

International trade accounts for a substantial portion of the marketing of the world's production of both frozen and canned tuna. In 1984, approximately 512,570 tons of frozen tuna, or 22 percent of world production, was exported from producing countries for canning or other processing elsewhere. ^{1/} The basic reason for the size of international trade in frozen tuna is that a large part of the world's production takes place in regions without sufficient processing capacity to handle the production. This has historically been the case because much production of frozen tuna is commonly carried out by less developed tropical nations, while processing capacity has been located in developed economies—tuna consuming areas such as the United States and Western Europe. This traditional trade pattern has been changing in recent years, however, with the growth in world frozen tuna production. Processing capacity has shifted from the consuming areas to the producing areas, or at least to other less developed regions of the world that have significant labor cost advantages over the developed economies. This gives rise to the second component of the change in world trade, the growth in exports of canned tuna, particularly from nontraditional processing regions such as Southeast Asia to traditional consuming regions. In 1984, 26 percent of the world's production of canned tuna was exported for consumption elsewhere, compared with 16 percent in 1979.

The changing pattern of world tuna trade can be seen in the following tabulation of FAO statistics, which show global frozen and canned tuna production, exports, and the ratio of exports to production during 1979-84:

^{1/} A portion of the world tuna harvest (5 to 10 percent during 1981-85) is destined for the sashimi (fresh fish) market. Most sashimi consumption takes place in Japan, with trace amounts in the European and U.S. markets. The sashimi market in Japan is reported to be suffering from declines in current and projected demand, as well as sharply reduced domestic supplies and increased reliance on imports. See the discussion on the Japanese tuna industry later in the report.

	Frozen tuna			Canned tuna		
	Produc- tion ——1,000 tons——	Exports	Ratio (percent) of exports to produc- tion	Produc- tion ——1,000 tons——	Exports	Ratio (percent) of exports to produc- tion
1979.....	1,910	495	26	611	100	16
1980.....	1,980	518	26	648	116	18
1981.....	1,970	550	28	747	153	21
1982.....	1,996	477	24	702	153	22
1983.....	2,145	628 1/ 2/	29 1/ 2/	761	193	25
1984.....	2,314	513 1/	22	856	228	27

1/ Estimate of the Food and Agriculture Organization of the United Nations.

2/ The 1983 figure for exports of frozen tuna includes an unexplained 1-time increase in Korean exports of approximately 110,000 tons (more than 100 percent over the typical Korean export level); it is possible that this is a reporting error, and if so, the ratio of world exports to production of frozen tuna in 1983 was 24 percent.

The proportion of harvested tuna that is exported in frozen form has fluctuated considerably during the 1980's. Between 1979 and 1984, world production of frozen tuna increased from 1.91 million tons to 2.31 million tons, an average annual rate of increase of 4 percent. During the same period, world exports of frozen tuna fluctuated around an average annual rate of increase of 0.7 percent, from 495,000 tons in 1979 to 513,000 tons in 1984. However, since 1979 the proportion of canned tuna production that is exported has been steadily increasing. While world production of canned tuna increased at an annual rate of 7 percent, from 611,000 tons in 1979 to 856,000 tons in 1984, world exports of canned tuna increased by 18 percent annually, from 100,000 to 228,000 tons during the same period.

The increasing internationalization of commerce in tuna products, particularly canned tuna, is apparent from the preceding tabulation. Global production of canned tuna is increasing, but it is increasing fastest in nontraditional areas, as is discussed in the following sections of the report.

World trade in frozen and fresh tuna

The principal exporting and importing nations in the world market for frozen and fresh tuna are shown in table 44. It should be emphasized that the statistics in table 44 are in many cases extremely rough estimates and indications of trends rather than actual levels. World exports of frozen and fresh tuna in 1984 approximated the 1979 level of about 500,00 tons, fluctuating from an estimated low of 478,000 tons to a high of 612,000 tons during 1979-84. A wide variety of countries exported frozen and fresh tuna during the period, reflecting the widespread availability of tuna resources in oceans around the world. Japan and Korea have historically accounted for the bulk of world exports because of their large distant-water fishing fleets and

limited domestic consumption of canned tuna. During 1979-84, these two countries accounted for nearly 40 percent of total world exports. In addition, France is an important exporter of frozen or fresh tuna, particularly to its former colonies, which in turn ship processed tuna to the French market and to the U.S. market particularly processing facilities in Puerto Rico. The Solomon Islands, Mexico, Singapore, and Spain are also significant exporters; the increase in exports from Singapore and the Solomon Islands are due in part to the growing tuna processing sector in Thailand, while Mexican and Spanish exports are destined for processing for the European market.

During 1979-84, world imports of frozen or fresh tuna fluctuated between a low of 619,000 tons in 1980 and a high of 681,000 tons in 1984. Imports are much more concentrated in a few countries than are exports. Four countries—the United States, Japan, Thailand, and Italy—accounted for 79 percent of all imports in 1984, and three of these (Thailand was the exception) accounted for about three-fourths of world imports throughout 1979-84. As described later, the United States has steadily reduced its share of world imports, from 49 percent in 1979 to 30 percent in 1984. Japan has been a consistently strong market for imports, particularly of high-quality (sashimi-grade) fresh tuna for its domestic market, in addition to imports for canning for export markets. Italy has for a long time been a large market for frozen tuna and continues to be a major market for imports.

World trade in canned tuna

The principal exporting and importing nations in the world market for canned tuna are shown in table 45. World exports of canned tuna more than doubled between 1979 and 1984, from 100,000 to 227,000 tons, an increase of 127 percent. In 1985, although complete data are not available, it appears that the increase in exports continued, especially from major exporters such as Thailand and France. Several countries shared in the 1979-84 increase, including Thailand, the Philippines, Ivory Coast, Senegal, and Taiwan, which each increased their exports by at least two-thirds during the period. However, the most notable change occurred in exports from Thailand, which increased from an insignificant level in 1979-80 to 65,000 tons in 1984, or 29 percent of the world total, and increased further to 93,000 tons in 1985. Thailand is by far the world's largest exporter of canned tuna, having surpassed the traditionally dominant Japan in 1984.

World imports of canned tuna in 1979 totaled 121,000 tons, increasing by 66 percent over the next 5 years to 201,000 tons in 1984. Accounting for three-fourths of this increase, or 55,000 tons, was the United States, the largest importer, whose imports increased from 26,000 to 82,000 tons during 1979-84; such imports increased by another 25,000 tons, to 107,000 tons in 1985. Other significant world markets experiencing increased imports included France and the United Kingdom, which, with West Germany, constitute the bulk of the large Western European canned tuna market.

U.S. Importance in World Trade

The trends in world trade in processed and unprocessed tuna have particularly affected the U.S. market. The United States, traditionally the world's largest importer of both frozen and canned tuna and, in addition, a minor exporter of frozen tuna, saw its share of world imports of frozen tuna decline from 49 percent in 1979 to 30 percent in 1984. At the same time, the U.S. share of world imports of canned tuna increased from 22 percent to 40 percent. U.S. imports of frozen tuna continued to decline, and canned tuna imports continued to rise in 1985, although their share of world trade in 1985 is not known. U.S. exports of frozen tuna have increased from an average of less than 1 percent of total world exports during 1979-83 to 5 percent in 1984 and 7 percent in 1985. As described elsewhere in this report, several reasons for these shifting U.S. trade patterns exist, including the influence of relative production costs and tax considerations, changing patterns of resource availability, and changes in the buyer-seller relationship between U.S. processors and harvesters.

There have been several impacts of the increasing internationalization of the world tuna market on the U.S. tuna industry. Both frozen and canned tuna have become world commodities, whose prices and availability in each country, including the United States, are increasingly affected by market conditions around the world. As a result, U.S. industry members now appear to have less control over prices of frozen and canned tuna than in earlier years.

In the U.S. market for frozen tuna, the power of the American Tuna Sales Association (ATSA) to negotiate prices on behalf of U.S. tuna vessels with U.S. tuna processors is, by most accounts, far less now than was the case during the 1960's and 1970's. Indeed, many independent U.S. vessels that were previously represented by ATSA are now on an "open ticket," that is, they are selling their catch on the open market, or through individual, short-term contracts with U.S. processors. According to some representatives of U.S. processors, the diminished role of negotiated prices in favor of short-term contracts and the spot market is a direct result of the increased availability of imported supplies of frozen tuna, which can be procured easily on spot markets, reducing the control U.S. vessels previously had on the supply of frozen tuna available to U.S. processors. ATSA, it is believed by representatives of at least one major U.S. tuna processor, is a "stubborn" negotiator, and in these days of declining spot prices of frozen tuna, it is easier to buy directly from independent vessels or import from foreign suppliers.

The position of the American Tunaboat Association during the section 201 investigation, and currently, has been that competition in the canned tuna market from imports has put additional downward pressure on prices of canned tuna, forcing U.S. processors to reduce costs, including seeking lower prices for frozen tuna. As a result, U.S. vessels are put in severe financial straits, weakening their bargaining ability in dealing with U.S. processors. This result, it is believed by some U.S. vessel operators, has arisen from import competition, not necessarily any coercive action on the part of processors. Other U.S. tuna vessel operators, however, downplay this

competitive-market scenario presented by processors, instead emphasizing the concentration of market share by the major U.S. processors and their control over U.S. vessels through contracts and various forms of vessel-financing arrangements.

It is generally agreed by U.S. processors and vessel operators alike that the supply of frozen tuna available on the world market has been increasing in recent years, with the effect of pushing down prices of both frozen tuna and canned tuna worldwide. However, U.S. processors have been using less, not more imported frozen tuna as raw material, both in absolute terms and as a proportion of their total purchases of frozen tuna. U.S. imports of frozen (and fresh) tuna totaled 999,000 pounds in 1985, down from 1.3 million pounds imported in 1979. As a share of total apparent frozen tuna utilization by U.S. processors, imported frozen tuna declined from 60 percent during 1980-81 to 46 percent in 1983 and 51-54 percent during 1984-85. According to officials of some U.S. processors, these companies are procuring a greater proportion of their frozen-tuna inputs from domestic harvesters—even if the actual cost of the frozen tuna is higher than it would be on the world spot market—because of the need to keep solvent the U.S. vessels in which the processors have financial interests, since these processors stand to lose more money with bankrupt vessels than with the premium price domestic frozen tuna commands over imported tuna. For example, if a processor has a 50-percent ownership of a vessel that delivers 1,000 tons of tuna to its plant, then an increase in the cost of tuna from domestic sources, say, \$50,000, reduces the processor's earnings in processing by \$50,000 but increases its earnings as a vessel owner by \$25,000. The net increase in cost is smaller for the integrated processor, and may be preferable to buying tuna on the spot market and letting its vessel go bankrupt. The desire to keep U.S. tuna vessels solvent, even at the cost of foregoing lower frozen tuna prices on the spot market, was expressed by one U.S. processor. ^{1/}

With respect to increased world trade in canned tuna, the impact on U.S. processors has primarily been on the import side. The growing world production of canned tuna has reportedly been both beneficial and detrimental to U.S. processors. On the one hand, most major U.S. tuna processors are or have recently been importers of canned tuna, primarily from Thailand processors under contract to the U.S. firms, for distribution in the U.S. market. These imports have served a number of purposes, including filling markets—such as the institutional trade—that are less profitable to fill with production from domestic facilities, and to supplement domestic production lost to temporary plant shutdowns or cutbacks in production. All three major U.S. processors, Star-Kist, Van Camp, and Bumble Bee, either are currently or have within the past 3 years, been significant U.S. importers of canned tuna, usually for distribution under their own labels.

On the other hand, as evidenced by the testimony before the Commission in the 1984 section 201 investigation and other sources, some U.S. processors

^{1/} Commission staff interview with a representative of a U.S. processor.

believe themselves to be adversely affected by competition from foreign exporters to the U.S. market. ^{1/} According to testimony at the 1984 hearing, a position that was reaffirmed in Commission staff discussions with industry sources, such competition occurs in all major markets, including the retail and institutional trade, and is alleged to be a primary factor in the relocation of much of the industry's processing capacity in recent years, as the processors adjust to competitive pressures by seeking lower cost producing areas.

Exports

Frozen tuna:—Data on U.S. exports of frozen tuna are not separately reported by the Bureau of the Census. However, the National Marine Fisheries Service reports data on exports of frozen tuna by U.S. purse seine vessels. ^{2/} The following tabulation shows such exports, by species, during 1979–85 (in short tons):

<u>Species</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
Yellowfin ^{1/} ...	3,945	1,339	1,087	3,864	538	16,980	15,128
Skipjack.....	1,961	918	292	387	45	15,388	19,669
Albacore.....	0	0	0	62	0	108	0
Total.....	5,906	2,257	1,379	4,313	583	32,476	34,797

^{1/} Includes a small quantity of bigeye, blackfin, and bluefin.

U.S. exports of frozen tuna by purse seiners have increased significantly in recent years. Total exports (all species) fluctuated between 5,906 and 583 tons during 1979–83 and then skyrocketed to 32,476 tons in 1984 and to 34,797 tons in 1985. During 1979–83, such exports were negligible compared with U.S. tuna landings. U.S. tuna processors have the capacity to utilize the entire U.S. catch of tuna by U.S. vessels and, in fact, must import a large portion of their raw material requirements (see table 29). Any frozen tuna exports prior to 1984 were probably small in quantity and either of a specialty product nature or the result of a special, temporary arrangement.

However, in recent years, with the closing of tuna-processing plants in southern California, the export market for frozen tuna has received increasing attention from the U.S. tuna fleet. Industry sources have indicated that the

^{1/} See, in addition to the testimony of Pan-Pacific and Star-Kist officials contained in the transcript of the public hearing before the Commission in the 1984 section 201 investigation, the 1984 Annual Reports of C.H.B. Foods (then the parent company of Pan-Pacific), pp. 2 and 6, and of H.J. Heinz Company (the parent company of Star-Kist), p. 11; and the 1985 Annual Report of H.J. Heinz Company, pp. 10, 17, and 22.

^{2/} U.S. Tuna Trade Summary, various annual issues, Samuel F. Herrick, Jr. and Steven J. Koplin, National Marine Fisheries Service, Southwest Region, Terminal Island, CA.

exports of tropical tuna by U.S. tuna purse seiners consisted mainly of tuna caught in the western Pacific, landed at transshipment stations, such as Tinian and Guam, and exported to tuna processors in Asian countries, particularly Thailand. The large rise in 1984 and the sustained level in 1985 are believed to have been primarily the result of licensing arrangements between U.S. and Thai processors to send canned tuna to the U.S. market. The raw material required by the increased Thai production that resulted from these arrangements was supplied, to a large degree, by U.S. purse seine vessels, because Thailand must import the bulk of its frozen tuna requirements. It is also believed that the U.S. vessels that are exporting frozen tuna to Thailand are either owned by, or financially tied to, the U.S. processors involved in the arrangements with the Thai processors. Such exports are expected to continue in the future.

Exports of frozen tuna to other countries are believed to be minor relative to those to Thailand. U.S. tuna vessel operators appear to be reluctant to enter the world tuna market, preferring to sell U.S. processors for several reasons. These include historical relationships between the U.S. vessels and processors that may be based on financial ties between the two sectors, and the familiarity of vessel operators with the procedures of doing business with U.S. processors. In addition, in entering the world market, U.S. tuna vessel operators are subject to variables they may not have previously encountered, such as differing terms of payment, the demands of foreign buyers for particular product-quality characteristics, and extra costs such as transshipment costs.

In 1985, for the first time, the west coast albacore fleet (primarily vessels other than purse seiners) exported frozen albacore. The exports amounted to approximately 690 tons, valued at an average of \$1,000 per ton. The markets, each of which received about the same share of the albacore exported, were France, Japan, and Thailand. These exports are expected to continue and increase in the future, with a desired target of from 5,000 tons to 6,000 tons annually. ^{1/}

One factor responsible for the increase in U.S. albacore exports is a shift in fishing patterns in Japan. The Japanese have been retiring old albacore longline vessels and replacing them with new purse seiners. The purse seiners fish for skipjack in the southern Pacific, and as the longline vessels were replaced, Japanese albacore catches declined. As a result, Japanese demand for imported albacore increased and provided a market opportunity for the U.S. albacore fleet. However, U.S. industry sources report that U.S.-caught albacore must improve in quality in order to retain their share of the Japanese market. This market is very particular about quality, especially concerning the outward appearance of the fish. U.S. albacore vessel operators need to improve their fish-handling methods in order to expand into the Japanese market. U.S. industry members believe that their future success in this market depends directly on the ability and desire of the U.S. albacore fleet to improve the quality of their product.

^{1/} Telephone conversation with Mr. William Perkins, Executive Director, Western Fishboat Owners' Association, Feb. 18, 1986.

Canned tuna.—Data are not separately collected on U.S. exports of canned tuna. Even more so than with frozen tuna, U.S. exports of canned tuna are negligible compared with the U.S. pack of canned tuna. This is due largely to the fact that U.S. tuna processors generally are not competitive in the major markets of Japan and the EC. Factors contributing to this include relatively high duties in those markets (Japan—15 percent; EC—24 percent), transportation costs from relatively remote production areas (Puerto Rico, American Samoa), more demanding product specifications that would increase production costs, and the existence of large, well established industries in these markets. These factors make market entry difficult and diminish the competitiveness of U.S. producers of canned tuna in major export markets.

Imports

Frozen tuna.—In the world market for frozen tuna, the United States is decreasing its historically dominant role. U.S. imports of frozen tuna in 1985 totaled 406 million pounds, compared with 637 million pounds in 1979, a decrease of 36 percent during the period (table 46). The value of such imports decreased by 19 percent during 1979–85, from \$266 million in 1979 to \$216 million in 1985.

Albacore is the primary species of frozen tuna imported into the United States, in terms of value. During 1979–85, albacore accounted for 41 percent of the value of total U.S. imports of frozen tuna (table 46). Following albacore, in terms of value, during the period were skipjack (40 percent) and yellowfin (16 percent), with a minor share of other species and of tuna loins also being imported. In terms of quantity, skipjack was the leading species, accounting for 54 percent of U.S. imports of frozen tuna during 1979–85, followed by albacore (28 percent) and yellowfin (17 percent).

Japan was the primary foreign supplier of frozen tuna to the United States during 1979–85, accounting for 21 percent of the quantity and 23 percent of the value of total U.S. frozen tuna imports (table 47). Following Japan were Taiwan, Ecuador, Brazil, Ghana, and Spain. The principal foreign suppliers of frozen tuna to the United States are discussed in greater detail later in the report.

U.S. imports of frozen tuna may be divided into two overall categories—albacore and tropical (mainly skipjack and yellowfin). As is the case with domestic production of frozen tuna, these categories correspond to the designation of the final canned product as whitemeat or lightmeat. U.S. imports of frozen albacore tuna fluctuated greatly during 1979–85 and ranged in quantity between 127 million and 178 million pounds and in value between \$77 million and \$134 million during the period (table 48). The major foreign supplier during the period was Japan, which accounted for about one-third of both the quantity and value of such imports. Following Japan were Taiwan and South Africa, with lesser amounts supplied by other countries. U.S. imports of frozen albacore tuna are much more variable than imports of frozen tropical tuna mainly because of the relative scarcity of the albacore species and the relatively large share of U.S. processors' frozen albacore requirements that is supplied by imports compared with tropical tuna.

U.S. imports of frozen tropical tuna trended downward during 1979-85, from 453 million pounds, valued at \$144 million, during the former year to 259 million pounds, valued at \$95 million, during the latter year (table 49). This represented a decline of 43 percent in quantity and 34 percent in value during the period. Venezuela, Panama, France, Ecuador, and Brazil were the major suppliers during the period. The decline in U.S. imports of frozen tropical tuna reflected both the decreased overall demand for frozen tuna by U.S. processors during the period, as they cut back their production of canned tuna, and the proportionally higher utilization of U.S.-caught tuna by U.S. processors for the tropical tuna species compared with albacore.

U.S. imports of frozen tuna from particular countries can be quite erratic. This is basically a result of the method of procurement of imported frozen tuna by U.S. processors. These processors usually buy imported frozen tuna on the spot market, taking supplies from whichever source offers the desired product at acceptable prices. Several officials of U.S. processing companies indicated that differences in the quality of frozen tuna supplied by different foreign suppliers are negligible, and that, in general, imports of a given tuna species from one source are as good as any other. The principal difference between suppliers is the species that are available. For example, U.S. imports of frozen albacore tuna are supplied primarily by Japan and Taiwan, which together accounted for one-half to two-thirds of all U.S. imports of frozen albacore during 1979-85 (table 48). U.S. imports of frozen yellowfin were supplied primarily by Venezuela and Panama, while yellowfin supplies from France were gradually being replaced with imports from Ecuador during 1979-85 (table 50). U.S. imports of frozen skipjack were supplied primarily by France, Brazil, Venezuela, and Ghana (table 51).

Many other countries also supply frozen tuna to the U.S. market in small quantities. Generally, of course, the various countries that export frozen tuna to the U.S. market are those adjacent to the larger tuna fishing areas of the world, and include a number of coastal Latin American countries, such as Venezuela, Panama, Ecuador, and Brazil. In addition, some coastal African countries also supply the U.S. market, including Ghana and the Ivory Coast.

Canned tuna.—U.S. imports of canned tuna increased tremendously during 1979-85. Such imports escalated from 54 million pounds, valued at \$65 million, in 1979 to 214 million pounds, valued at \$209 million, in 1985 (table 52). This represents an increase of 298 percent in quantity and 221 percent in value during the period. Furthermore, U.S. imports of canned tuna were 23-percent greater in both quantity and value during January-March 1986 than during the corresponding period of 1985. This rise in U.S. imports of canned tuna resulted from a number of factors. First, the demand for canned tuna in the U.S. market has been strong and was fueled by favorable economic conditions, declining canned tuna prices, and shifting consumer dietary preferences. Second, the supply of canned tuna produced by U.S. processors has declined, particularly since 1982. And, in a related development, U.S. tuna processors have procured a portion of their supplies overseas since 1984.

The principal sources of U.S. imports of canned tuna have shifted dramatically in recent years. The most significant change has been in imports from Thailand. In 1985, approximately 57 percent of the quantity and

52 percent of the value of all U.S. imports of canned tuna came from Thailand, compared with only 9 and 8 percent of total import quantity and value in 1979. Indeed, imports from Thailand accounted for 74 percent of the increase in U.S. imports of 160 million pounds during 1979-85. Other important sources of imported canned tuna in the U.S. market included the Philippines (15 percent of the quantity of total imports in 1985), Taiwan (13 percent), and Japan (7 percent). Imports from each of these sources generally increased during 1979-85. The major foreign suppliers of canned tuna to the U.S. market are discussed in greater detail later in the report.

Canned tuna packed in water is, by far, the principal product type imported into the United States, accounting for virtually all of U.S. imports of canned tuna during 1979-85 (table 53). This is directly attributable to the U.S. tariff structure for imports of canned tuna, because tuna packed in oil is dutiable at 35 percent ad valorem and tuna packed in water is dutiable at either 6 or 12.5 percent ad valorem. U.S. imports of canned tuna packed in oil consist mainly of specialty items destined for ethnic markets.

MAJOR FOREIGN SUPPLIERS IN THE U.S. MARKET

Identification of the Largest and Fastest Growing Foreign Producers

Frozen tuna

The United States is the leading world importer of frozen tuna, accounting for approximately 30 percent of world imports in 1984 (table 44). In 1985, U.S. apparent consumption of frozen tuna totaled 938 million pounds (table 29). Imports accounted for 54 percent of the quantity of consumption that year. Imports historically have provided a large share of U.S. frozen tuna supplies, although this share has declined somewhat in recent years (from 59 percent in 1979 to 54 percent in 1985). Virtually all U.S. imports of frozen tuna are used by the U.S. canned tuna industry.

Data regarding the major foreign suppliers of frozen tuna to the U.S. market are provided in table 54. The countries listed in the table accounted for nearly three-quarters of the total quantity of U.S. frozen tuna imports in 1985. The top four suppliers (Ecuador, Japan, Venezuela, and Panama) accounted for one-half of such imports that year.

The principal foreign sources of U.S. frozen tuna supplies remained relatively stable during 1979-85. However, there were some shifts in the relative importance of the principal suppliers. Ecuador, which was only the seventh largest supplier in 1979 and exported no frozen tuna in 1981 and most of 1982 because of an embargo, led all suppliers in terms of quantity in 1985. Factors contributing to Ecuador's growth as a U.S. frozen tuna supplier include an increase in the Ecuadorean tuna fleet capacity (partly realized by the purchase or registration of former U.S. vessels that left the fleet mainly because of bankruptcy) and increased tuna catches in the eastern tropical Pacific in 1984 and 1985. For much the same reasons, Venezuela rose from

being a relatively insignificant supplier (lower than 10th) in 1979 to the 3rd leading supplier in 1985. Other major shifts among foreign suppliers include Brazil and France, which both were lower than 10th in rank in 1979 before rising to 6th and 7th, respectively, in 1985.

Several countries that were major suppliers of frozen tuna to the U.S. market in 1979 have since dropped considerably in importance. These countries include Korea, the Philippines, New Guinea, the Netherlands Antilles, the British Pacific Islands, and Mexico. The primary reason for the drop in U.S. imports from the Asian and Pacific island sources is the emergence and growth of the canned tuna industries of several nations in that region, thus diverting raw tuna exports from the U.S. market to others, such as Thailand. The absence of Mexican raw tuna supplies in the U.S. market resulted directly from the embargo, which took effect in 1980.

Canned tuna

The United States is also the world's largest market for canned tuna. In 1985, apparent U.S. consumption of canned tuna totaled 794 million pounds, of which 214 million pounds, or 27 percent of the total, was supplied by imports. During 1979-85, the share of the U.S. market held by imports increased markedly, from 8 percent in 1979 to 27 percent in 1985 (table 32). This dramatic increase in the market share held by imports was accounted for by a combination of a growing U.S. market for canned tuna; an overall decline in U.S. canned tuna production during the period as the industry restructured, decreased its capacity, and shifted production locations; and substantial growth in certain foreign tuna-canning industries targeted mainly for the U.S. market.

Data concerning the major foreign suppliers to the U.S. canned tuna market are given in table 55. The countries listed in the table accounted for 99 percent of the total quantity of U.S. imports of canned tuna in 1985. Furthermore, the top four suppliers (Thailand, the Philippines, Japan, and Taiwan) accounted for 93 percent of the quantity of such imports in that year.

The major countries supplying canned tuna to the U.S. market have remained relatively constant during 1979-85. However, there have been some significant shifts in these countries' positions during this period. Thailand became, in a relatively short time, the major foreign supplier of canned tuna to the U.S. market. Historically, Thailand was a minor foreign supplier of canned tuna to the United States. However, since the late 1970's, the Thai canned tuna industry has expanded substantially. Canned tuna production rose from an estimated 8,045 tons in 1979 to 84,744 tons in 1985, or by 953 percent. Thailand accounted for 57 percent of the quantity of U.S. imports of canned tuna in 1985, up from 9 percent in 1979 (table 55). Since there is a negligible domestic market for canned tuna in Thailand, the industry is export driven; the major market has been the United States. Thai exports of canned tuna grew from 19,070 tons in 1981 to 84,767 tons in 1985, or by 345 percent. The share exported to the United States rose from 27 percent in 1981 to 72 percent in 1985. A major factor in the growth of

Thai canned tuna exports to the U.S. market, particularly during 1984-85, was the fact that two major U.S. tuna canners contracted with Thai canners for supplies to be marketed in the United States. In a related development, Thai canners, who must rely on imports for the great bulk of their raw material needs, have been increasingly supplied by U.S. tuna purse seine vessels operating in the western Pacific, thus further providing for increases in Thai canned tuna production and subsequent exports. As a result of the development and growth of its canned tuna industry, Thailand has become not only the principal foreign supplier to the U.S. market during 1979-85, but also was the fastest growing supplier.

The Philippines was the second leading foreign supplier of canned tuna to the U.S. market in 1985, accounting for 14 percent of the quantity of imports that year. While Thailand increased its U.S. import market share each year during 1979-85, the Philippines' share fluctuated during the period, rising from 13 percent of the quantity in 1979 to 32 percent in 1982 before falling to 14 percent in 1985 (table 55). The decline in market share since 1982 was accounted for primarily by a combination of the growth of U.S. imports from Thailand and a leveling of Philippine canned tuna production and exports to the United States. The decline in the Philippine share of the U.S. canned tuna import market and the leveling of Philippine canned tuna production and exports during 1979-85 resulted from a variety of factors. These include structural problems in the Philippine canned tuna industry, such as limited domestic tuna resources and limited cold-storage facilities for raw tuna. Also, the Philippine Government, until recently, severely restricted imports of raw tuna, thus placing Philippine canned tuna producers at a disadvantage. And, general domestic economic conditions, such as inflation, high interest rates, tax and tariff measures, and currency devaluations, have limited the competitiveness of Philippine tuna canners. Despite the recent leveling of its canned tuna exports to the United States, the Philippines was the third fastest growing foreign supplier to that market during 1979-85.

Japan historically has been the principal source of U.S. canned tuna imports. Except for a brief period during and after World War II, Japan had been the primary foreign supplier ever since the U.S. canned tuna market was developed in the early 1900's. However, Japan's market position declined rapidly after 1979. During 1979-85, Japan's share of the quantity of U.S. canned tuna imports fell from 53 percent in 1979 to 11 percent in 1985 (table 55). This occurred while absolute import levels from Japan remained relatively constant, ranging from 20 million pounds in 1983 to 28 million pounds in 1979. Japan has remained the principal supplier of whitemeat canned tuna while losing market share in the lightmeat market. As is the case with the Philippines, Japan's drop in U.S. import-market share reflected largely increasing imports from Thailand during the period under review. The principal reason for the decline in Japan's market share is the fact that Japan is a high-cost producer of canned tuna relative to competing suppliers such as Thailand, Taiwan, and the Philippines.

Taiwan, like Japan, has lost a substantial share of the U.S. canned tuna import market in recent years. Taiwan's share of this market dropped from 23 percent of the quantity in 1979, when Taiwan was the second leading

supplier, to 11 percent in 1985, when it dropped to the fourth leading supplier (table 55). This occurred, however, while the absolute level of imports nearly doubled, from 12 million pounds in 1979 to 23 million pounds in 1985. Taiwan supplies mainly lightmeat canned tuna to the U.S. market but also supplies a significant quantity of whitemeat canned tuna and is second only to Japan as a foreign supplier in this category. Taiwan's loss of market share in the face of rising absolute supply levels during 1979-85 occurred as the U.S. import market expanded at a greater rate (298 percent) than U.S. imports from Taiwan (91 percent).

The following section presents a profile of the tuna industries of Thailand, the Philippines, Taiwan, and Japan, as requested by the United States Trade Representative. As evidenced in the previous discussion, these countries are among the principal foreign tuna suppliers to the U.S. market. A profile of the Mexican tuna industry, a potential major supplier to the U.S. market, is provided later in the report.

Industry Profile in Principal Exporting Countries

Thailand

Thailand is the world's leading exporter of canned tuna and is currently the single largest source of imported canned tuna in the U.S. market. U.S. imports of canned tuna from Thailand accounted for 57 percent of the quantity and 53 percent of the value of all U.S. imports in 1985, compared with only 9 and 8 percent of the quantity and value in 1979. Nearly one-third of Thailand's output of canned tuna in 1985 was processed from U.S.-harvested tuna. Moreover, U.S. tuna processors themselves accounted for a large portion of U.S. canned tuna imports from Thailand in 1985. Because of the swift growth of the Thai tuna industry in recent years and its connection with U.S. harvesters as well as processors, the U.S.-Thai relationship in tuna trade is one of the most significant issues concerning the role of the U.S. tuna industry in world trade.

Tuna have been harvested on a small scale in Thailand for many years; although the growth in world tuna trade has stimulated increased harvesting effort, tuna harvesting remains limited to a fleet of small purse seiners operating within Thai-controlled waters. The canning of tuna in Thailand began in 1972, when a group of Thais and foreign investors (mostly Australians) undertook to build a plant to process tuna, which had until then been exported in frozen form to canneries in Australia and elsewhere. Since that time, using primarily imported frozen tuna, the industry has grown swiftly, yet remains almost exclusively export-oriented.

Number and location of producers.—Thai industry sources estimate the size of the tuna fleet in that country at about 200 small purse seiners, operating primarily within the Thai 200-mile fisheries jurisdiction in the Gulf of Siam and the Andaman Sea. There are no official records available on the fleet size, although the Government of Thailand does monitor the state of

the tuna resources within its jurisdiction. Officials of the Thailand Department of Fisheries believe the nation's tuna resources are fully exploited, and are not encouraging further growth of the tuna fleet. ^{1/} Consequently, the bulk of the frozen tuna needs of Thai tuna processors is met by imports.

There are 25-30 tuna-processing (canning) establishments in Thailand. Most of these firms are quite small, and many started out processing other commodities such as shellfish and fruit. As the availability of frozen tuna increased and the world market for canned tuna grew, these firms began adding tuna to their product lines. Most firms operate a single plant, in which tuna as well as the other commodities are processed. These plants are located along the Thai portion of the Malaysian peninsula and in the general vicinity of Bangkok. Because many plants were originally fruit processors, they are not located at shoreside, and frozen tuna must be transported by truck inland to these plants.

Thailand's output of canned tuna is highly concentrated in a handful of firms. Three firms account for 70 percent of the nation's canned tuna production: Unicord Investment Co., Ltd., which accounts for 35 percent of the industry's output; Thai Union Manufacturing Co., Ltd, which has 25 percent; and SAFCOL (Thailand) Co., Ltd., which has 10 percent. ^{2/} Other significant firms include B & M Products, Ltd., and Kiang Huat Sea Gull Trading Co., Ltd., each with less than 8 percent. Several other smaller firms make up the remaining 5 to 10 percent of the industry.

Unicord Investment Company.—Unicord began in 1978 as a joint venture between a group of Thai (75 percent) and Taiwanese (25 percent) businessmen, to process and export canned fruit, vegetables, and tuna. ^{3/} As a tuna processor, Unicord has grown tremendously in recent years, to the point (as of early 1986) of employing 3,000 to 4,000 persons in one of the world's largest tuna processing plants. Unicord is the world's largest exporter of canned tuna, with 1985 exports of 4.5 million cases and planned 1986 exports of 5.2 million cases. Unicord officials reported that in 1985 more than half of the firm's shipments went to the U.S. market, including sales to Van Camp, Bumble Bee, and Star-Kist. The firm also sells under its own "Unicord" label to West Germany, as well as the "Geisha" label under contract to Japanese and U.S. distributors. In addition, Unicord produces about 1 million cases of tuna-based pet food annually, more than half of which are shipped to the U.S. market.

Thai Union Manufacturing Company.—Thai Union, a 100-percent Thai-owned processor of fruit and shellfish, began processing tuna in 1973. Thai Union employs between 1,000 and 2,000 persons in 2 processing plants and a can-manufacturing facility. Like Unicord, Thai Union packs tuna under

^{1/} Commission staff interview with Bung-Orn Saisithi, Deputy Director-General, Thailand Department of Fisheries, March 5, 1986.

^{2/} Submission by counsel on behalf of the Thai Food Processors' Association, July 1, 1986, pp. 38-9.

^{3/} In an interview with Commission staff, Unicord officials stated that the firm is currently 100-percent Thai-owned.

contract to the three largest U.S. processors for their labels, as well as for other U.S. importers. The firm also has extensive markets in Europe, Canada, and Japan. Thai Union's U.S.-destined tuna is exclusively water packed to take advantage of the relative U.S. tariff rates on canned tuna. The firm processes both oil- and water-packed tuna for non-U.S. markets. As with Unicord, Thai Union's output is largely institutional-size (4-pound) containers, although both firms also produce retail-size (6.5-ounce) containers for the U.S. and other markets.

SAFCOL (Thailand) Ltd.—SAFCOL is Thailand's oldest tuna processing firm, a 1972 joint venture between Thai (52 percent), Australian (34 percent), Taiwanese (7 percent), and British (7 percent) investors. Its output of canned tuna is marketed primarily through its Australian parent, SAFCOL Holdings, Ltd. The subsidiary SAFCOL operates several processing plants, freezing plants, and one can-manufacturing plant in Thailand; in addition, the firm has processing plants in Indonesia and the Philippines, both not operating as of early 1986 because of low canned tuna prices. SAFCOL obtains much of its frozen tuna needs from independent U.S.-flag vessels that either land directly in Thailand or transship their catch from western Pacific points such as Tinian.

Production processes and costs.—Production of canned tuna in Thailand is carried out using methods and technology similar to those employed by U.S. processors. At least one major Thai processor, SAFCOL, uses U.S.-made equipment. The principal difference between Thai and U.S. production processes, according to officials of several Thai processing firms, lies in the degree of labor intensity, reportedly a result of widely different wage rates. Thai wage rates are quite low compared with U.S. wage rates: a starting cannery worker in Thailand earns 70 baht (about \$2.75) for an 8-hour workday, a wage set by a nation-wide labor union. ^{1/} Several Thai industry sources reported that the average daily wage for tuna cutters (the highest-paid nonsupervisory plant workers) in Thai tuna plants (as reported by several processors) is 75–80 baht (about \$3); nonwage labor costs for processors adds another 25 baht (about \$1) per worker per day, for a daily labor cost of \$4 per worker. Conflicting reports were received from Thai processors in explaining the causes and effects of such low labor costs. Officials of one processor claimed that low wages reflect the low standard (and cost) of living in Thailand, not low labor productivity, which is, according to another source, "sufficiently high to compete with (Thailand's) foreign counterparts." ^{2/} An official of one processor asserted that the ratio of Thai to U.S. labor intensity in tuna processing is 2.5:1, partially offsetting the cost advantage of low wage rates. This assertion was reinforced by an official of another processor, who stated that labor productivity in tuna processing in the United States is 2–3 times higher than in Thailand. Several representatives of Thai processors stated that Thai operations are more labor-intensive, but none could provide a sufficient breakdown of data on plant operations to confirm their statements.

^{1/} Commission staff interview with Han Seng, Thai Union Manufacturing Co., February, 1986.

^{2/} Dumri Konuntakiet, Unicord Co., Ltd., address before the INFOFISH Tuna Trade Conference, Bangkok, Thailand, Feb. 27, 1986.

With respect to the overall cost of processing tuna in Thailand, a general breakout of the major cost items was provided by one major processor: the most important cost item is the raw material, frozen tuna, which accounts for 65-70 percent of the cost of a case of canned tuna; tin cans account for about 20 percent; labor is another 5 percent; and other costs (including a net return on sales of 1-2 percent) account for the remaining 5-10 percent. 1/

The cost of frozen tuna to Thai processors varies by species and by country of origin. Unlike U.S. processors, Thai processors are reported to prefer smaller species of tuna, such as skipjack and tongol, which have traditionally been supplied by vessels in the western Pacific and the Indian Ocean and have therefore constituted the main supply of tuna to their plants. The skills of Thai tuna cutters are better suited for small fish; the relatively high level of labor involved in cutting small fish is offset by low labor costs. Thus, the spread between the low prices paid for small fish and the high prices paid for large fish tends to be smaller in Thailand than in the U.S. frozen tuna market. In addition, the price of frozen tuna varies by country of origin, with the highest prices reportedly being paid for tuna from Papua New Guinea and the Solomon Islands. U.S.-supplied tuna tends to get about \$9-10 per ton less than the top price. The lowest prices are reported to be paid for tuna from Indonesia and the Maldives.

Generally speaking, it is quality differences that explain relative prices for frozen tuna by country of origin. With respect to U.S.-caught tuna, Thai processors claim that relatively low prices reflect high salt content and/or high temperature. According to industry sources, the inland location of many processing plants requires extra handling and transportation, which makes Thai processors more concerned about quality requirements than they might be were the plants located at dockside.

The following tabulation presents average prices (C&F) for frozen tuna in Thailand during 1983-84 (data supplied by the Thai Food Processors' Association; in U.S. dollars per ton):

<u>Species</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
Yellowfin....	817	635	712
Skipjack.....	672	608	681
Tongol.....	653	710	650
Euthynnus....	490	513	479

1/ The 1- to 2-percent return on sales in tuna processing was a frequently heard statistic in Commission staff interviews with representatives of Thai tuna processors. Such a small incentive to the industry's investors is difficult to reconcile with the growth in capacity and production experienced in the industry in recent years. The industry's trade association reports that since 1984, in a "shake-out" of less efficient companies, several processors have exited the industry and that "(c)urrently, the Thai processing industry has reached its optimum level of efficiency." Submission by counsel on behalf of the Thai Food Processors' Association, July 1, 1986, p. 44.

Tongol is a preferred species for canning because of its light color and its taste. Thai industry sources report that canned tongol commands a premium of \$2 per case over other canned lightmeat tuna; consequently, frozen tongol prices are much higher than the other local species, euthynnus.

The above prices reflect the value of frozen tuna delivered to processing plants. Out of this price one must subtract transshipment costs to get a price received by a U.S. harvester that is comparable with the price the harvester receives for tuna landed at U.S. ports. Several U.S. and Thai industry sources quoted an average transshipment cost of \$75-\$90 per ton for tuna shipped from Tinian to Thailand. This indicates that U.S. harvesters netted about \$640 per ton for yellowfin and \$590-\$610 per ton for skipjack transshipped to Thailand in 1985.

Production and trade.—Although the harvesting sector of the Thai tuna industry is small, its output has been growing in recent years, as shown in the following tabulation of data of the Government of Thailand (in tons):

<u>Period</u>	<u>Harvest</u>
1980.....	22,040
1981-82..	1/
1983.....	33,060
1984.....	44,080
1985.....	58,406

1/ Not available.

From only 22,040 tons in 1980, the Thai tuna harvest climbed to 58,406 tons in 1985. The tuna species harvested by Thai fishermen are tongol and euthynnus; it is estimated that approximately two-thirds of the catch is tongol and one-third euthynnus. 1/ Most of the harvest is used by domestic tuna canneries, with small amounts reportedly consumed in the domestic market in smoked, dried, or fresh form, or exported to the Japanese sashimi market.

Imports provide the bulk of Thailand's supply of frozen tuna. Thai imports of frozen tuna during 1981-85 are shown in table 56.

Thai industry estimates of the industry's production of canned tuna during 1979-85 are presented in the following tabulation:

<u>Year</u>	<u>Standard cases</u>	<u>Tons</u>
1979.....	826	8,045
1980.....	1,390	13,555
1981.....	1,960	19,065
1982.....	2,570	25,015
1983.....	3,120	30,415
1984.....	7,000	68,214
1985.....	8,690	84,744

1/ Submission by counsel on behalf of the Thai Food Processors' Association, July 1, 1986, pp. 39-40.

In 1979, total production of canned tuna amounted to 8,045 tons; by 1985, this figure had skyrocketed to more than 10 times its 1979 level, to 84,744 tons. Virtually all of this increase in canned tuna production used imported frozen tuna. Since 1983, much of the increase has been processed from U.S.-supplied frozen tuna, and the canned tuna has been shipped to the U.S. market. Most of the 1985 production was tuna packed in water, since that comprises virtually the entire Thai supply of canned tuna in the U.S. market. Production of oil-packed tuna is also significant, however, and this is shipped primarily to the European market. Production by container size is split fairly evenly in the larger plants between the retail- and institutional-size containers.

Capacity utilization rates in Thai tuna processing are impossible to determine, largely because most of the plants are easily convertible to canning of other (nontuna) products. Indeed, some of the smaller plants are completely converted to other products on a seasonal basis, when supplies of frozen tuna (mostly locally harvested) are scarce. The bulk of the increased production in recent years has not, however, been as a result of conversion of nontuna processing capacity, but of construction of new capacity in the form of large, tuna-oriented processing facilities.

The entire Thai output of canned tuna is exported, owing to the insignificant domestic market. In fact, what little domestic market does exist is "probably foreign (Western) consumers living in the Bangkok metropolitan area." ^{1/} The principal export markets for canned tuna are shown in the following tabulation (data of the Government of Thailand; in thousands of pounds):

<u>Market</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
United States.....	39,910	83,467	122,460
West Germany.....	11,263	15,001	17,550
United Kingdom.....	1,232	2,541	4,875
Denmark.....	1,695	2,159	1/
Sweden.....	2,213	2,179	1/
Finland.....	1,485	755	1/
Australia.....	1,014	995	2,145
All other.....	2,027	28,427	21,588
Total.....	60,839	135,525	168,618

^{1/} Not reported; included in "All other."

Government involvement.—According to the information made available to the Commission's staff by Thai Government officials and industry representatives, Government involvement in the tuna industry in Thailand is limited to management of domestic tuna harvesting and various forms of assistance made generally available to Thai exporters. The substantial increase in domestic tuna harvesting activity in Thailand waters has made it necessary for the Government to closely monitor the state of such fisheries. As noted earlier, the resource is believed to be substantially fished to

^{1/} Report from U.S. Embassy, Bangkok, June 20, 1986.

capacity, and little long-term growth in tuna harvests is likely to be possible. Interest in developing joint ventures with other nations, particularly in the Indian Ocean region, is increasing, but no such projects have yet been finalized. In view of this, it appears that the current heavy dependence of the Thai tuna-processing sector on imported raw material is going to continue, and any future growth in Thai production and export of canned tuna will depend significantly on the availability of imported supplies of frozen tuna.

Thai exporters of canned tuna may obtain packing credits from the Government as a means of assisting in financing such activity. When an exporter receives a bona fide order for its product, it can obtain in advance a portion of the value of such order from the Government at a reduced interest rate (about 9 percent as of early 1986). This assists the exporter in financing the production and export of the product, which would otherwise need to be paid for as it occurs, whereas reimbursement from the foreign buyer would occur on or after delivery of the order. Upon receiving payment from the buyer, the exporter pays back the borrowed funds from the Government. Thus, the packing credit serves as a low-interest loan for working capital. Packing credits are available to a wide variety of Thai industries, according to Thai tuna industry representatives.

The Philippines

The Philippines has traditionally been an important source of U.S. imports of canned tuna, averaging fourth in order of importance, behind Thailand, Taiwan, and Japan, as a major supplier during 1979-85. The share of the U.S. import market held by the Philippines was 14 percent in 1985, compared with 13 percent in 1979. Although the country is surrounded by the tuna-rich waters of the western tropical Pacific, its development as a rival to American Samoa and Thailand has been slowed by political and macroeconomic difficulties; in addition, adverse effects arise from the seasonal nature of the local tuna fishery, a problem common to most tuna-fishing nations.

Without a significant domestic market, the Philippine tuna industry got off to a slow start. Several aborted attempts at establishing a local fishery by domestic as well as foreign (primarily Japanese) interests took place in the 1960's and early 1970's. These ventures were unsuccessful for a variety of reasons, including unskilled management and, in one case, the inadequate icing of raw skipjack by inexperienced fishermen, leading to contamination of the fish and a subsequent ban on skipjack landings in the port of Manila. ^{1/} In 1975, a project sponsored by FAO established the economic viability of medium-scale fishing operations, attracting additional investment from domestic as well as foreign interests, including U.S. purse seiners provided through joint ventures with Star-Kist and Bumble Bee. By 1980, there were at least 80 tuna purse seiners and 8 operating canneries. ^{2/} During most of its existence, the Philippine tuna industry's principal market has been the United States.

^{1/} Victor Hizon, Mar Fishing Company, address before the INFOFISH Tuna Trade Conference, Bangkok, Feb. 27, 1986.

^{2/} Ibid.

Number of producers.—The rapid growth of the Philippine tuna fleet in the early 1980's has since slowed, reportedly as a result of significant underutilized capacity and softening markets for canned tuna. In 1985, the purse seine fleet consisted of 10 vessels larger than 500 gross tons and 40 vessels in the 250-500 gross-ton range. The longliner fleet consisted of 45 vessels between 25 and 45 gross tons. In addition, there were an estimated 12,000 smaller craft capable of fishing for tuna as well as other species of fish. As much as 20 percent of the total tuna fleet capacity has remained unutilized during the last 2 years, reportedly owing to the economic difficulty faced by the industry. 1/ Significant idle capacity has apparently been a chronic characteristic of the Philippine tuna industry, but in earlier years this inefficiency went unresolved because strong canned tuna markets kept the industry solvent. 2/

The total canning capacity of the Philippine tuna industry is reported at 110,200 tons annually, only about 40 percent of which was fully utilized at year-end 1985. 3/ This compares with a 66-percent capacity-utilization rate in 1984. Philippine industry sources report that reasons for the low capacity-utilization rate include high costs of fuel, tin cans, and shipping containers, as well as interest expenses. 4/

Among the principal Philippine tuna-processing firms are Mar Fishing Company, Inc. and SAFCOL Company, Inc. Mar Fishing Company began in 1976 as a joint venture between Marcopper Mining Corporation, a leading Philippine mining company, and British Columbia Packers, Ltd., a large Canadian fish processor and distributor. Mar Fishing's first tuna plant began operations in 1981. By 1985, the firm had acquired six tuna purse seiners, which supplied up to 70 percent of the firm's frozen tuna requirements. 5/

SAFCOL, a subsidiary of an Australian firm, SAFCOL Holdings, Ltd., was one of the earliest tuna-processing operations, having begun in 1977. It, and others, were induced to open tuna plants by the Philippine Government tax and investment policies favoring expansion of nontraditional industries. As of early 1986, however, SAFCOL had closed its Philippine tuna plant because of weak selling prices for canned tuna. 6/

Employment generated by the Philippine tuna industry in 1984 included 3,300 cannery workers, as well as several thousand fishermen and workers in such related industries as tin can and carton manufacturing. Doubtless the decline in capacity utilization in 1985 depressed the overall employment effects of the industry in that year. Daily wage rates in industrial establishments are reported to have averaged 57 Philippine pesos (about US\$3.00) in Manila, and slightly lower outside Manila. According to industry

1/ Report from U.S. Embassy, Manila, July 16, 1986.

2/ Victor Hizon, op. cit.

3/ Report from U.S. Embassy, Manila, July 16, 1986.

4/ Ibid.

5/ Victor Hizon, op. cit.

6/ Commission staff interview with Roger Drew-Bear, SAFCOL Holdings Ltd., and Nigel Hardy, SAFCOL (Thailand) Ltd.

sources, the minimum wage for cannery workers in 1986 is 53.36 Philippine pesos per day, or about US\$2.60. ^{1/} Such low wage rates relative to wages in American Samoa (where the minimum wage is \$2.82 per hour) are reportedly offset by high costs for tin cans; cartons; and labels, which are said to be 1.5 to 4 times the cost of similar items in areas such as Thailand ^{2/}; by low productivity of Philippine labor; and by the added cost of unutilized plant and vessel capacity. A detailed breakdown of Philippine processing costs with which to assess such claims was not available to Commission staff.

Production.—Data on Philippine production of frozen tuna during 1979–85 is presented in table 57. The 1985 production of 117,000 tons was exceeded only by the 1983 level of 131,000 tons, and represents a one-third increase over the 1979–85 low point of 87,000 tons in 1980. The Philippine tuna catch is distributed between two species, skipjack and yellowfin, as shown in the following tabulation of data of the Government of the Philippines (in thousands of tons):

<u>Species</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
Skipjack....	50	34	42	56	63
Yellowfin...	<u>54</u>	<u>53</u>	<u>63</u>	<u>57</u>	<u>68</u>
Total...	104	87	105	113	131

Without a significant distant-water fleet capable of following the tuna populations along their migration paths, the Philippine industry's production of frozen tuna can be quite volatile from year to year. Trends such as those in table 57 can result from several causes, including the biological condition of the tuna resources and environmental changes, as well as the size and financial condition of the fleet. One factor explaining the large increase in the catch in 1983 is the 1982–84 El Nino, which cooled the waters of the western Pacific, pushing tuna stocks closer to the surface and enabling fishermen to harvest the tuna more easily. Recent Government actions to expand distant-water fishing (see below) should serve not only to increase the annual catch but also to help insulate the fleet from the effects of short-run fluctuations in the condition of the local tuna resources.

Canned tuna production in the Philippines as reported by the FAO has declined somewhat from its 1983 peak, as shown in table 58. The production level of 24,000 tons in 1985 was 8 percent below the record 26,000 tons produced in 1983. This downturn, following a rapid rise in output from only 4,000 tons in 1979, is reported to be largely a result of processing plant closures. These closures, according to Philippine industry sources, have been due to recent adjustments in capacity following an excessively rapid expansionary phase, as well as to the effects of soft export markets for canned tuna.

^{1/} Submission by counsel on behalf of Philippine tuna interests, July 1, 1986, p. 48.

^{2/} Ibid.

Consumption and trade.—Data on apparent consumption of frozen and canned tuna are presented in tables 57 and 58. Apparent consumption of frozen tuna fluctuated between 96,000 and 110,000 tons during 1982–85. Virtually all apparent consumption is supplied by domestic production, owing to restrictions on Philippine imports of frozen tuna prior to 1986 (see below). The principal market for frozen tuna in the Philippines is the processing industry, which utilizes the product as raw material for canned tuna.

Apparent consumption of canned tuna in the Philippines is nil or negligible: all or virtually all domestic production is exported. As is the case in many nations in the region, native consumers in the Philippines are not accustomed to canned tuna (or many canned foods), and ample supplies of fresh or cured seafoods are available. Hence, little demand for canned tuna exists, and that would be primarily among tourists or "Western" immigrants.

Data on reported Philippine imports and exports of frozen tuna are presented in table 59. For reasons discussed below, reported imports of frozen tuna occurred only occasionally in the years prior to 1986. At no time during 1979–85 did such reported imports exceed 3 tons. Indonesia was the principal source of such imports during 1979–85.

Exports of frozen tuna by the Philippines totaled just under 13,100 tons in 1985, following a steady decline from a record 53,700 tons in 1980. Prior to 1982, the United States was the single largest market for such exports; in 1982, Italy replaced the United States as the principal market, only to lose that position to Japan in 1985. Although as much as 29,000 tons had been shipped to the U.S. market in earlier years, by 1985 such exports totaled only 100 tons. The principal cause of the decline in exports was the increased utilization of frozen tuna by domestic processors, which peaked, as noted above, around 1983. After 1983, the Philippines expanded its Japanese market, a high-quality market for sashimi-grade tuna, which commands high prices relative to canning-grade tuna. ^{1/}

Table 60 presents data on Philippine trade in canned tuna. Because of the limited domestic market, Philippine imports of canned tuna have occurred only sporadically in the past, never exceeding 9 tons until 1985. In that year, a surge in imports from Canada of 14 tons pushed overall imports to 16 tons, compared with only 2 to 3 tons in the previous 2 years. Commission staff inquiries of Philippine industry sources uncovered no satisfactory explanation for this sudden increase in imports; the 1985 total is, in any case, insignificant compared with domestic production of canned tuna.

Philippine Government data on exports of canned tuna show new highs in such exports in nearly every year during 1979–85, reaching a record 28,065 tons in 1985. Compared with 1979 exports of only 4,495 tons, the 1985 level represents an increase of over 500 percent during the 6-year period. Throughout, the United States remained the principal market for such exports, absorbing 60 percent of the total during 1979–85.

Government involvement.—Appendix F contains a description of government involvement in the Philippine tuna industry.

^{1/} Victor Hizon, op. cit.

Taiwan

Taiwan is a major source of both frozen and canned tuna to the U.S. market. During 1979-85, Taiwan was second to Japan, in terms of value, as a foreign supplier of frozen tuna and second to Thailand as a foreign supplier of canned tuna. Taiwan is a major world producer of albacore tuna, as the Taiwan tuna fleet traditionally has comprised far-ranging albacore longlining vessels. In 1984, the latest year for which data are available, about half of the total Taiwan tuna catch consisted of albacore. In 1985, 89 percent of the quantity of Taiwan frozen tuna exports to the United States consisted of albacore. Although precise data are not available, it is believed that the preponderance of Taiwan exports of canned tuna to the United States consists of albacore (whitemeat).

Harvesting sector.—The following tabulation shows the number of Taiwan tuna fishing vessels in operation, by type of vessel, during 1979-85 (data from U.S. Department of State telegram, June 10, 1986):

<u>Year</u>	<u>Inshore vessels</u>	<u>Offshore vessels</u>	<u>Total vessels</u>
1979.....	1,640	627	2,267
1980.....	1,900	608	2,508
1981.....	1,846	612	2,458
1982.....	1,831	494	2,325
1983.....	1,872	451	2,323
1984.....	1,944	438	2,382
1985.....	1,443	423	1,866

During 1979-85, the total number of Taiwan tuna vessels declined irregularly by 18 percent. Most of the decline was accounted for by offshore vessels (50 tons and greater), the number of which decreased by one-third during the period. The number of inshore vessels also declined irregularly during 1979-85, with the largest drop occurring between 1984 and 1985.

This decline in the Taiwan tuna fleet, particularly in the offshore sector, is believed to be the result of a combination of factors. These include increased fuel costs, which particularly affect the far-ranging longliners; generally declining world tuna prices; and, the increasing number of countries establishing 200-mile territorial zones for fishery resources, including tuna. As a result of these factors, some Taiwan tuna longlining vessels reportedly converted to the squid fishery. ^{1/}

The following tabulation shows employment on Taiwan tuna-fishing vessels in operation, by type of vessel, during 1979-85 (data from U.S. Department of State telegram, June 10, 1986):

^{1/} U.S. Department of State, CERP 0404 Industrial Outlook Report—Fishing Industry, Sept. 19, 1984, Taipei.

<u>Year</u>	<u>Inshore vessels</u>	<u>Offshore vessels</u>	<u>Total vessels</u>
1979.....	11,480	18,810	30,290
1980.....	13,300	18,240	31,540
1981.....	12,922	16,524	29,446
1982.....	12,817	13,338	26,155
1983.....	13,104	11,275	24,379
1984.....	13,608	10,950	24,558
1985.....	10,101	10,575	20,676

Employment in the Taiwan tuna-harvesting sector declined by nearly one-third during 1979-85. Most of this decline occurred in employment on offshore vessels, which dropped 44 percent during the period. Employment on inshore vessels declined 12 percent during 1979-85.

Table 61 presents data on the Taiwan tuna catch, by species, during 1979-84. The total catch was relatively stable during the period and ranged in quantity between 207 and 252 million pounds and in value between \$174 and \$221 million. Albacore was the primary species, accounting for 53 percent of the quantity and 51 percent of the value of the total tuna catch during 1979-84. Yellowfin was the second major species, accounting for 26 percent of the quantity and 31 percent of the value of total Taiwan tuna catches during the period under review. The remaining share of the Taiwan tuna catch consisted of bigeye, young, bluefin, and skipjack tuna.

Table 62 shows the Taiwan tuna catch, by sector, during 1979-84. The deepsea sector accounted for about three-quarters of the total tuna catch during the period; virtually all of the remainder was provided by the inshore sector, with a minor share provided by the coastal sector. The deepsea sector was composed of vessels over 50 tons, mainly large purse seiners and longliners. The inshore sector consisted of powered vessels less than 50 tons, principally longlining vessels. The coastal sector consisted of unpowered vessels utilizing various gear types.

Processing sector.—The following tabulation shows the number of Taiwan tuna-processing plants in operation, by type of plant, during 1979-85 (data from U.S. Department of State telegram, June 10, 1986):

<u>Year</u>	<u>Chilling and freezing plants</u>	<u>Canning plants</u>
1979.....	1/	20
1980.....	1/	21
1981.....	1/	17
1982.....	1/	14
1983.....	1/	12
1984.....	1/	10
1985.....	9	8

1/ Not available.

During 1979-85, the total number of Taiwan tuna-canning plants fluctuated between 8 and 21. The number of chilling/freezing plants (cold storage facilities) totaled nine in 1985, the only year for which data are available.

The following tabulation shows employment in Taiwan tuna-processing plants in operation, by type of plant, during 1979-85 (data from U.S. Department of State telegram, June 10, 1986):

<u>Year</u>	<u>Chilling and freezing plants</u>	<u>Canning plants</u>
1979.....	1/	1,695
1980.....	1/	1,744
1981.....	1/	1,464
1982.....	1/	1,250
1983.....	1/	1,056
1984.....	1/	1,000
1985.....	500	1,000

1/ Not available.

employment in Taiwan tuna-canning plants declined 41 percent during 1979-85. Employment in Taiwan chilling/freezing plants (cold storage facilities) totaled 500 workers in 1985, the only year for which data are available.

Table 63 presents data on Taiwan production of canned tuna during 1979-84. 1/ Such production was irregular during the period and ranged in quantity between 14 million and 30 million pounds and in value between \$13-\$18 million.

Government involvement.—Government assistance to the Taiwan tuna-harvesting and processing industry consisted mainly of vessel financing, technical assistance, tariff preferences, and tax reductions. The Taiwan Government develops fisheries development plans and provides low-interest loans for the construction of vessels deemed necessary under the plan. The most recent plan, covering the period 1982-87, authorized financing for the construction of 10 bonito-tuna purse seiners, 25 tuna longliners, and 10 large purse seiners. 2/ As of August 1984, one bonito-tuna purse seiner and two large purse seiners had been built under the plan, and the Land Bank of Taiwan had allocated an estimated \$16 million for low-interest vessel construction loans. 3/

1/ The official Taiwan government data includes bonitos with skipjacks for canned tuna production. As bonitos are not considered as tuna in the United States, the actual Taiwan production of canned tuna from the perspective of the United States is somewhat lower than reported by the data presented in this report.

2/ U.S. Department of State, CERP 0404 Industrial Outlook—Fishing Industry, Apr. 22, 1983, Taipei.

3/ U.S. Department of State, CERP 0404 Industrial Outlook—Fishing Industry, Aug. 3, 1984, Taipei.

The Taiwan Government also provides technical assistance to the tuna industry. One technical assistance program involved improving the fuel efficiency for fishing vessels. The Government financed the development of the design of a prototype of a more efficient vessel and then provided for low-cost loans for the construction of this vessel type. ^{1/}

In terms of tariff and tax preferences, the harvesting sector is permitted duty-free entry of imports of fishing gear and is provided a break on commodity tax rates for fuel oils (4.2 for premium grade and 1 percent for general grade, compared with nonfishing industry rates of 14 percent and 3 percent, respectively). Government regulation of the Taiwan tuna industry is also minimal. The Government restricts the construction of new tuna vessels to control fleet expansion and to conserve energy. Since 1983, the construction of fishing vessels in the 100- to 700-ton range has been prohibited. ^{2/}

Trade.—The following tabulation presents data on Taiwan exports of tuna products during 1979–83 (from the U.S. Department of State):

<u>Year</u>	<u>Quantity</u> <u>(million pounds)</u>	<u>Value</u> <u>(million dollars)</u>
1979.....	247	188
1980.....	237	229
1981.....	213	230
1982.....	230	209
1983.....	239	212

Data are not available on Taiwan imports of tuna products. However, it is believed that such imports are negligible.

Tariff rates are 50 percent ad valorem for frozen tuna and 60 percent ad valorem for canned tuna. In addition, an import license must be obtained to import frozen tuna, and imports of frozen tuna are prohibited from areas infected with cholera. There are no specific nontariff barriers that apply to Taiwan imports of canned tuna.

Japan

Japan and the United States dominated world tuna production and trade for most of the history of such trade prior to the 1980's. Although it controls a smaller share of the world market, Japan continues to play an important role in world production and trade in both frozen and canned tuna, and continues to enjoy a significant share of the U.S. market for frozen tuna (21 percent in 1985) and canned tuna (11 percent in 1985).

^{1/} U.S. Department of State, CERP 0404 Industrial Outlook—Fishing Industry, Aug. 3, 1984, Taipei.

^{2/} Report from American Institute, Taipei, June 10, 1986.

Harvesting sector.—As was the case with U.S. tuna harvesting, Japanese tuna harvesting was originally a local activity. Prior to the 1940's, most of the Japanese tuna harvest took place in Japanese waters and the waters adjacent to neighboring Pacific rim nations. The small size of the vessels (less than 100 gross tons) made purse seining impractical, and until only recently, the fleet consisted almost entirely of pole-and-line vessels (similar to U.S. baitboats) and longliners (similar to U.S. trollers). Even with the development of efficient purse seine technology in the 1950's, the Japanese fleet remained one of pole-and-line vessels and longliners. The heavy dependence of Japanese tuna harvesters on the sashimi (fresh fish) market, which requires top quality tuna, has forced the fleet to continue with the traditional technology, which although more costly, results in frozen tuna of a much higher quality than does purse seining. The fleet has operated in distant waters for most of its post-1945 history, and Japanese tuna harvesters now are found wherever tuna are located, from the western Pacific to the Mediterranean.

The following tabulation presents data on the size of the Japanese tuna fleet in 1986 (data from the U.S. Embassy, Tokyo, June 20, 1986):

	<u>Vessels</u>	<u>Employment</u>
Distant-water.....	950	20,000
Offshore.....	942	10,000
Coastal.....	1,800	5,000
500-gross-ton		
purse seiners.....	32	640
116-gross-ton		
purse seiners.....	296	20,000
Total.....	4,020	55,640

It should be noted that the above data, especially those regarding offshore and coastal vessels, reflects fishing activity other than tuna harvesting, since, according to a source in the Japanese Government, 1/ most of the catch of such vessels consists of mackerel and other nontuna species.

Table 64 presents data on trends in the size and composition of the Japanese tuna fleet. Since the early 1970's, there have been significant changes in the Japanese tuna fleet. The fleet declined slowly in number during the 1970's, owing largely to rising fuel costs and the restrictions placed on access to tuna within other nations' claimed 200-mile fisheries jurisdictions. Both of these events put financial pressure on the distant-water fleet. According to one source, an additional factor contributing to the fleet decline in the last several years has been the buoyant Japanese economy, which made it difficult to find inexpensive labor to run the harvesting vessels. 2/ As a result of these rising costs coupled with

1/ Norio Fujinami, Japan Ministry of Agriculture, Forestry, and Fisheries, Chiyoda-ku, Japan.

2/ Ibid.

the downturn in prices for frozen tuna since 1981, the decline in the fleet size has quickened, and there has been a significant increase in the use of purse seiners, which, on the basis of the unit cost of landed tuna, are relatively more efficient than pole-and-line or longline vessels.

Table 65 presents data on the costs of production of tuna longliners, based on a 1983 survey of 83 such vessels. The principal cost items and their share of total expenses are labor (35 percent), oil (including fuel) (23 percent), and vessel depreciation (8 percent). On average, according to this survey, Japanese longliners suffered a loss in 1983 of 5.8 percent on their gross sales.

Processing sector.—The preferred tuna products in the Japanese market are dried (katsuobushi) and fresh (sashimi), with little demand for canned tuna; as a result, the processing sector of the Japanese tuna industry is set up much less for canning than for quick distribution from the vessels to the final consumers. Dried tuna is the most popular item among Japanese tuna consumers, and this product requires little in the way of high technology; as a result, according to industry sources interviewed by the Commission's staff, there are many such processing operations throughout the coastal areas of Japan.

Another popular product is sashimi, or "fresh" tuna (which is often thawed from frozen tuna of very high quality). Fresh tuna is not actually "processed," as it is mostly consumed in the home or in various types of restaurants.

Canned tuna traditionally has been a less popular product form in the Japanese market. Canned tuna is processed in 35 tuna canneries employing approximately 4,500 workers. ^{1/}

Production and trade.—Table 66 presents data on Japanese production (landings) of fresh and frozen tuna. Total Japanese fresh and frozen tuna landings ranged between 1.1 billion and 1.6 billion pounds during 1981–85. Frozen tuna accounted for the bulk, 79 percent, of such landings during the period.

Table 67 shows Japanese trade in fresh tuna during 1981–84. There were no imports of fresh tuna during the period. Japanese exports of fresh tuna increased irregularly from 22 million pounds in 1981 to 33 million pounds in 1984, or by 50 percent. Such exports ranged between 1 and 10 percent of production annually during the period.

Table 68 presents data on Japanese trade in frozen tuna during 1981–85. Japanese imports of frozen tuna increased irregularly from 223 million pounds in 1981 to 326 million pounds in 1985, or by 47 percent. Imports accounted for between 19 and 27 percent of consumption during the period. Japanese exports of frozen tuna increased 106 percent between 1981–84, from 79 million pounds the former year to 163 million pounds the latter year, before falling 46 percent to 88 million pounds in 1985. Exports ranged between 8 and 14 percent of production annually during the period.

^{1/} Report from U.S. Embassy, Tokyo, June 20, 1986.

Table 69 shows Japanese imports of fresh, chilled, or frozen tuna, by principal suppliers, during 1979-85. The Republic of Korea was the principal source, accounting for 45 percent of the quantity of such imports during the period. Also among the major suppliers were Taiwan (24 percent), Panama (4 percent), and the United States (2 percent).

Japanese production of canned tuna rose from 245 million pounds in 1981 to 273 million pounds in 1984, or by 12 percent, before falling 8 percent to 251 million pounds in 1985 (table 70). Japanese imports of canned tuna ranged between 2 million and 4 million pounds annually during 1981-85 and accounted for a minor share (1-3 percent) of consumption. Japanese exports of canned tuna increased from 77 million pounds in 1981 to 101 million pounds in 1984, or by 31 percent, before returning to 77 million pounds in 1985. Exports accounted for between 30 and 37 percent of production annually during 1981-85.

Table 71 shows Japanese exports of canned tuna, by principal markets, during 1979-85. The primary export market was the United States, which accounted for 29 percent of the quantity of such exports during the period. Also among the major export markets during the period were Canada (10 percent) and the United Kingdom (10 percent).

Trade barriers.—Japanese tariff rates for imports of tuna products are given in appendix H. The tariff rate is 5 percent ad valorem for imports of fresh, chilled, or frozen tuna, 15 percent for dried tuna, and 15 percent for canned tuna. Imports of tuna into Japan are subject to inspection by the Ministry of Health and Welfare (MHW) under the Japanese Food Sanitation Law. A permit must be issued by the MHW in order for such imports to pass through customs. The imported tuna is generally sampled and inspected for compliance with Government regulations on food sanitation, additives, and labeling. The requirements are the same for domestic and imported tuna. In addition, industry groups may voluntarily request inspection of imported tuna on a fee basis to assure that the quality of the imported tuna is comparable with the Japanese industry quality standards. The import procedures and inspection, both mandated and voluntary, have been criticized by foreign tuna suppliers as being protectionist. It is the market for fresh tuna that gives the widespread impression in other nations' industries that the Japanese tuna market is artificially protected from import competition. Prices for top quality bluefin and, to a lesser extent, yellowfin, are quite high in the Japanese market, since these are the species commonly used for sashimi. Foreign producers of bluefin and yellowfin wishing to export to Japan often face rejection of the product—the usual reason cited is said to be poor quality. Japanese industry representatives believe such quality control is necessary to sustain sales of sashimi in what has in recent years been an increasingly weak domestic market. ^{1/} However, a complaint voiced in interviews with Commission staff by some U.S. as well as foreign harvester representatives suggested that such quality control is an effective nontariff

^{1/} Norio Sumita, Chief, Special Office for Tuna Import Affairs, Federation of Japan Tuna Fisheries Cooperative Associations, Tokyo, Japan.

barrier to the high prices in the Japanese frozen tuna market. Although a complete analysis of this issue is beyond the scope of this investigation, this much can be said: part of the cause of the concerns of those barred from the Japanese market for frozen tuna is probably misunderstanding of the Japanese market system, which reflects the industry's unique emphasis on dried and fresh tuna products rather than canned tuna.

Government involvement.—The fisheries sector provides a vital portion of the Japanese food supply. As a result, Government involvement in the Japanese tuna industry is extensive. The major categories of Government involvement in the Japanese tuna industry are licensing, financial assistance, infrastructure development, education and training, and fishermen's organizations. The Japanese Government controls the number of tuna fishing vessels by the use of a licensing system. Licenses are required to operate longline and pole-and-line vessels larger than 20 gross tons and purse-seine vessels larger than 40 gross tons. The licensing system also involves certain time and area restrictions on tuna fishing. In 1981, the Japanese Government began a program to restructure the tuna fleet by decreasing the number of licenses for longline and pole-and-line vessels and increasing the number of licenses for purse seine vessels, which generally are held to be more efficient. This restructuring is evidenced by the data on the Japanese tuna fleet given in table 64. In addition, the number of Japanese offshore pole-and-line and longline tuna vessels reportedly will decrease from the current 942 to 699 by the end of fiscal year 1987. 1/

Financial assistance is provided by the Japanese Government mainly for vessel construction, insurance, and price supports. For vessel construction, the Government provides low interest (6.2 percent per annum), long term (20 year maturity) loans to fishermen through the Agriculture, Forestry, and Fisheries Finance Corporation. The Japanese Government also provides special insurance programs for fishermen, including tuna fishermen, owing to their relatively high-risk position that may preclude them from obtaining insurance from private sources. Approximately 240,000 registered fishing vessels out of a total of 400,000 vessels, including tuna vessels, are covered by the Government-financed insurance program. 2/ The Japanese Fisheries Agency maintains a fish price stabilization fund that provides for the purchase of fish products, including tuna, when prices fall below a minimum level.

The Japanese Government budgets substantial sums to build and maintain fisheries infrastructure. Government-financed infrastructure projects are being undertaken in approximately 3,000 fishing harbors and shelters, and annual Government expenditures for infrastructure development average about 200 billion yen (approximately \$1 billion). 3/

As a result of the aforementioned importance of the fisheries sector in providing food, there are extensive training and education facilities for

1/ Report from U.S. Embassy, Tokyo, June 20, 1986.

2/ Norio Fujinami, Japan Ministry of Agriculture, Forestry, and Fisheries, "Tuna Fisheries Development of Japan," from Proceedings of Infotuna Trade Conference, Bangkok, Thailand, Feb. 25-27, 1986.

3/ Ibid.

fisheries activities; most of these facilities are financed and operated by the Japanese Federal and local governments. There currently are 60 fisheries senior high schools, 2 fisheries universities, and major fisheries programs at 14 general universities in Japan. Specific training for the tuna fishery is conducted at these institutions. In addition, the Japanese Federal Government operates 8 regional fisheries research laboratories, and further fisheries research is conducted by 47 various local governments. 1/

The Japanese Government has formed various fishermen's cooperatives under the Fisheries Cooperative Association Law, which covers the majority of Japanese fishermen. There are three specific cooperatives related to the tuna fishery. These are composed of 400 longline and 200 pole-and-line vessels larger than 120 gross tons; 300 longline and 500 pole-and-line vessels smaller than 120 gross tons; and 32 small (500 gross tons) purse seiners. 1/

EMBARGO ON U.S. IMPORTS OF MEXICAN TUNA PRODUCTS

Background

U.S. imports of tuna products from Mexico were embargoed on July 14, 1980 (45 F.R. 137). This embargo resulted directly from the seizure of a U.S. tuna-fishing vessel on July 8, 1980 by the Mexican Government. The vessel was fishing in waters claimed by the Mexican Government as part of its territorial fishery zone but not recognized by the United States as such with respect to jurisdiction over tuna resources. The embargo was imposed under the authority of section 205 of the Magnuson Fishery Conservation and Management Act of 1979 (MFCMA), which provides for an embargo of U.S. imports of fishery products 2/ from any nation that seizes U.S. fishing vessels while fishing in waters beyond any foreign nation's territorial sea (to the extent that such territory is recognized by the United States). The Mexican Government (among others) claims a 200-mile territorial fishery zone for all fishery products, including tuna. The U.S. Government only recognizes a 12-mile territorial zone for tuna, since tuna is considered to be a highly migratory species. 3/ The vessel that was seized was approximately 30 miles off the Mexican coast.

Events leading to the embargo

The U.S. embargo on imports of Mexican tuna products was preceded by a series of events regarding the management and control of and the access to

1/ Ibid.

2/ Section 205(b) of the MFCMA specifies that the embargo shall apply to products of the fishery involved in the dispute and to other fishery products if deemed appropriate. In this case, the embargo was only placed on tuna products, but could have been extended to other fishery products, such as shrimp. Shrimp is, by far, the major Mexican fishery product exported to the United States, and the Mexican industry was concerned that shrimp products would be included in the embargo.

3/ The United States recognizes a 200-mile territorial fishery zone for all other fishery products.

tuna resources. The environment surrounding the harvesting of tuna in the eastern tropical Pacific has been marked by long-term structural changes regarding the development of tuna industries of various countries and by increasing friction over the issue of access to territorial waters. With the advent of far-ranging purse seiners in the 1950's, U.S. tuna vessels began to harvest tuna off the coasts of most Latin American countries from Mexico to Chile. In the past, most Latin American coastal nations, including Mexico, claimed a 3- or 12-mile fishing zone. This presented few problems for the U.S. tuna fleet, since most tuna is harvested outside those limits. However, as the countries began to claim 200-mile limits, friction increased as the United States did not recognize these claims until the time it also claimed a 200-mile limit (in 1977). Even then, U.S. recognition of sovereign rights over tuna resources extended only to 12 miles. (The majority of U.S. as well as world harvests of tuna occur beyond 12 miles from shore.) The following tabulation shows the dates of various Latin American coastal nations' 200-mile territorial claims for fishery resources, including tuna (data from the U.S. Department of State, Limits in the Seas, No. 36, National Claims to Maritime Jurisdictions, Mar. 6, 1986):

<u>Country</u>	<u>Date of 200-mile claim</u>	<u>Citation</u>
Mexico.....	July 31, 1976	Amendment to art. 27 of the Constitution.
Guatemala.....	July 1, 1976	Decree No. 20-76.
El Salvador.....	Sept. 7, 1950	Constitution, art. 7.
Honduras.....	June 13, 1980	Decree-Law No. 921.
Nicaragua.....	Apr. 5, 1965	Executive Decree 1-L.
Costa Rica.....	1/ May 20, 1975	Decree No. 5699.
Panama.....	Feb. 2, 1967	Law No. 31.
Colombia.....	Aug. 4, 1978	Law No. 10.
Ecuador.....	Feb. 22, 1951	Decree Law 003.
Peru.....	Aug. 1, 1947	Supreme Decree No. 781.
Chile.....	2/ June 23, 1947	Presidential Declaration.

1/ Sovereignty claimed July 27, 1948. Exclusive economic zone for fishery resources claimed May 20, 1975.

2/ Limit not specified.

The increase in harvesting effort by many nations in the eastern tropical Pacific and the conflict caused by it led to the formation and subsequent resource management activities of the Inter-American Tropical Tuna Commission (IATTC). 1/ From 1966 through 1979, the IATTC recommended, and its member nations implemented, quotas on yellowfin tuna catches within the area of the eastern tropical Pacific designated as the Commission's Yellowfin Regulatory Area (CYRA). See figure 3 for the boundaries of the CYRA.

1/ For a review of the origin and activities of the IATTC, see the above discussion on Government Involvement in the U.S. Tuna Industry.

However, with the withdrawal of Ecuador, Mexico, and Costa Rica from the IATTC, the overall effectiveness of the IATTC quotas was reduced so severely that they were abandoned in 1980. In 1978, the United States entered into negotiations with Mexico and Costa Rica regarding the formation of a new organization to manage and allocate yellowfin resources in the eastern tropical Pacific. The major issues in the negotiations included the allocation of tuna resources, license fees, the "last open trip" (i.e., when vessels could harvest tuna after the closing date for the quota), and allocations for small boats. By far, the most controversial issue concerned the allocation of tuna resources. The Latin American coastal nations wanted guaranteed yellowfin allocations based on the fact that much of the resource was within their claimed 200-mile exclusive economic zones. Mexico and Costa Rica insisted that the allocations for such "Resource Adjacent Nations" (RAN) should total 69 percent of the total annual yellowfin quota. The United States insisted that the RAN allocations total 45 percent. These figures were based on historic catches in the CYRA and differed according to the zone of the CRYA that the calculations were based on. The negotiations were deadlocked essentially as a result of the allocation issue. In an effort to revive the negotiations, the U.S. Government informally proposed a compromise allocation of 57 percent without the knowledge or approval of the U.S. tuna industry. The U.S. industry rejected this compromise, and the proposal, which was never formally offered, was not pursued. The negotiations with Mexico then dissolved, and bilateral negotiations continued with Costa Rica. ^{1/}

In the meantime, Mexico spearheaded the formation of a new organization referred to as "Oldepesca" (Organizacion Latinoamericana de Desarrollo Pesquero, or Latin American Fisheries Development Organization), in order to form yet another organization, one which would replace the IATTC. This proposed organization, the "Eastern Pacific Tuna Organization," would acknowledge the 200-mile limits to national jurisdiction over tuna resources, and would allow for an international licensing scheme that would apply to the high seas beyond 200 miles. However, the agreement would include only countries that recognize national jurisdiction within 200 miles over tuna resources, effectively excluding the United States.

As a result of the difficulty in concluding negotiations between the United States and Latin American coastal nations for a new tuna management regime, Mexican seizures of U.S. tuna vessels, which occurred occasionally in the past, increased dramatically in 1980. The following tabulation shows U.S. tuna vessel seizures and their fines by the Mexican government from 1976, when Mexico claimed a 200-mile territorial fishery zone, to 1985 (data from the U.S. Department of State):

^{1/} The negotiations with Costa Rica resulted in 1983 in the Eastern Pacific Ocean Tuna Fishing Agreement (the so-called "San Jose Treaty"). This agreement basically concerned licensing of foreign tuna vessels. The countries that eventually signed the treaty included the United States, Costa Rica, Panama, Honduras, and El Salvador. Mexico did not sign the treaty. The treaty is considered to be an interim agreement, as it requires members to negotiate a more permanent one.

<u>Year</u>	<u>Number of seizures</u>	<u>Fines</u>
1976-----	0	0
1977-----	0	0
1978-----	1	\$17,163
1979-----	2	0
1980-----	15	1,937,837
1981-----	5	1,224,012
1982-----	3	500,000
1983-----	1	500,000
1984-----	0	0
1985-----	0	0

Imposition of the embargo

In July 1980, following the seizure by Mexico of the U.S. tuna purse seiner F/V Marla Marie, the United States embargoed all U.S. imports of tuna products from Mexico. The last Mexican seizure of a U.S. tuna vessel occurred in 1983, and following its usual procedure of waiting 2 years after the last such violation, the U.S. Department of State began in 1985 to explore the possibility of ending the embargo. ^{1/} In August 1986, following several months of discussions between the U.S. and Mexican Governments, the embargo was terminated. Further discussion of the possible effects on the U.S. tuna industry and market of the termination of the embargo is found later in this report.

The increasing friction over access to tuna resources and the resulting Mexican seizures of U.S. vessels occurred during a period when Mexico was expanding its tuna industry. The Mexican fisheries sector, in general, was targeted for development during the 1970's. This rapid growth of the Mexican tuna industry has caused concern among members of the U.S. industry as to the possible impact of Mexican entry into the U.S. tuna market. The discussions between the two Governments focused heavily on the possibility of an orderly marketing agreement of some sort to alleviate the short-run effects of terminating the embargo. To provide more information concerning future U.S.-Mexico tuna trade, a review of the Mexican tuna industry and market follows.

Mexican Tuna Industry

Within the past decade, Mexico has become one of the largest tuna producers in the world. With access to abundant tuna resources, proximity to the world's largest tuna market (the United States), and a Government that is committed to and involved directly in the development and expansion of fisheries production and exports, Mexico has the potential to significantly increase its tuna output and trade. However, this potential has, in recent years, been severely limited by a number of factors. First and foremost of

^{1/} Commission staff communication with Office of Fisheries Affairs, U.S. Department of State, May 21, 1986.

these has been the U.S. embargo on imports of Mexican tuna products. Also, domestic economic conditions in Mexico, such as high inflation and interest rates, currency devaluations and depreciation, and an increasing external debt ^{1/} have curtailed planned expansion of production facilities, including fishing craft, canneries, and support facilities. And abundant world tuna supplies, particularly since 1983, have depressed world tuna prices and affected the profitability of the Mexican tuna industry. Despite these developments, which are not permanent in nature, the Mexican tuna industry is poised to become a major participant in the world tuna market.

Harvesting sector

Number of craft and employment.—The Mexican tuna fleet has expanded substantially since the mid 1970's, when most nations, including Mexico, claimed a 200-mile economic zone for control of fishery resources. Following the announcement of a construction goal of 106 new purse seiners in 1977, ^{2/} the fleet grew in size from 23 seiners, with a carrying capacity of 13,500 tons, in 1976 to 65 seiners, with a capacity of 52,253 tons, in 1985. ^{3/} The original goal has not been met owing mainly to the U.S. embargo on imports of Mexican tuna products, detrimental economic conditions, and currently depressed tuna prices. This goal likely will not be attained in the near future.

The following tabulation shows the number of active Mexican tuna craft, including purse seiners, baitboats, and other types of craft, during 1979–85 (1979–84 data from Anuario Estadístico de Pesca, 1984, 1985 data from preliminary statistics of the Government of Mexico):

<u>Year</u>	<u>Number of active craft</u>
1979.....	34
1980.....	51
1981.....	62
1982.....	70
1983.....	85
1984.....	69
1985.....	79

The number of active Mexican tuna craft rose substantially during 1979–85, from 34 in 1979 to a peak of 85 in 1983. The number of active craft declined significantly in 1984, mainly the result of poor catches and decreasing revenues in 1983 owing to El Nino, continuing poor domestic economic conditions, and sluggish world tuna markets. In 1985, the number of active

^{1/} These factors are discussed in greater detail later in the report.

^{2/} Goal announced in the National Fishery Development Plan of 1977.

^{3/} Active craft. The actual number of craft in 1985 is believed to have totaled about 85.

craft increased somewhat, as economic and resource conditions improved, and as the Mexican government provided assistance to vessel owners to continue operating. ^{1/}

A more useful measure of the Mexican tuna fleet is the productive capacity of the fleet. Table 72 shows the number of Mexican tuna craft (seiners and baitboats) active in the eastern tropical Pacific (ETP) during 1979-85 and their carrying capacity for raw tuna. During this period, the number of craft increased 132 percent, from 28 in 1979 to 65 in 1985. ^{2/} More importantly, the carrying capacity of these craft increased 248 percent, from 15,027 tons in 1979 to 52,253 tons in 1985. The bulk of the absolute increase in both the number of craft and in carrying capacity was accounted for by purse seiners. The total number of purse seiners rose by 28 craft and their carrying capacity rose by 36,023 tons during 1979-85. In addition, most of the increase in the Mexican ETP tuna fleet was accounted for by relatively large purse seiners. According to table 72, most of this increase was accounted for by craft in size class 6, craft greater than 400 tons in carrying capacity. This is the size class that the Mexican industry and Government targeted for expansion in the 1970's. The largest increase occurred in 1980, as the number of large purse seiners increased from 15 in 1979 to 36 in 1980; the carrying capacity of this category rose 140 percent, from 14,622 tons the former year to 35,162 tons the latter year. The substantial increase between these 2 years indicated the beginning of the planned expansion of the fleet. As a result of this relatively recent buildup, Mexico is now believed to have the world's second largest tuna purse seine fleet, second only to that of the United States.

The majority of the Mexican tuna fleet is located in the State of Baja California (fig. 8). In 1984, the latest year for which data are available, 56 of the 69 active tuna craft in Mexico were located in this State. Other Mexican States in which tuna craft were located that year included Sinaloa (seven craft), Oaxaca (three), Baja California Sur (two), and Sonora (one).

Data on the structure of the Mexican tuna fleet are somewhat limited. The following tabulation shows the size and age (years) ranges of the Mexican tuna fleet in 1984 (data from Anuario Estadístico de Pesca, 1984, Secretaría de Pesca):

	Carrying capacity					Age				
	22- 110	110- 441	441- 772	772+ (Short tons)	Total	0-5	5-10	10-20	20+	Total
Craft...	13	24	30	2	69	23	13	27	6	69

^{1/} A more detailed description of these factors is provided later in the report.

^{2/} The number of vessels reported by the IATTC may differ from the number reported by the Mexican Government because of vessels fishing outside of the ETP.

According to the above data, 46 percent of the Mexican tuna fleet consists of craft 441 tons in carrying capacity and larger. In addition, one third of the Mexican tuna fleet had been constructed within 5 years of 1984, and more than half of the fleet was constructed within 10 years of 1984. Although they are not comprehensive, these data reflect the relatively recent expansion of the Mexican tuna fleet.

The ownership structure of the Mexican tuna fleet is composed of three general groups. These groups are private companies, State (Federal Government) companies, and cooperatives. The private companies generally consist of individual investors or investment groups and may include considerable investment by foreign interests in joint-venture arrangements. 1/ The State companies are part of a Government-controlled corporation called Productos Pesqueros Mexicanos (PPM). PPM is involved in the harvesting, production, and marketing of a wide range of fishery products, including tuna, shrimp, and sardines. PPM, which was formed in 1971 and entered the Mexican tuna-harvesting sector in 1980 with the purchase of two purse seiners, is composed of several subsidiary companies that operate fishing craft and processing facilities throughout Mexico. PPM is a nonprofit corporation and derives its funding mainly from its operation revenues, with a smaller amount of funding provided by the Mexican Government. The cooperatives, which began operating in 1971, mainly are composed of individual fishermen that collectively participate in the ownership and operation of tuna vessels.

Complete data are not available on the ownership structure of the Mexican tuna fleet during 1979-85. However, data on ownership sectors were obtained from two different sources for 1981 and 1984 and are given in the following tabulation (1981 data from the NMFS; 1984 data from Anuario Estadísticos de Pesca, 1984; Secretaría de Pesca): 2/

<u>Ownership sector</u>	<u>1981</u>	<u>1984</u>
State companies.....	8	12
Cooperatives.....	11	24
Private companies...	<u>38</u>	<u>33</u>
Total.....	57	69

Although the data for the 2 years specified above cannot be directly compared owing to the fact that the different sources may vary in their methods of accounting for tuna craft, it is apparent that most of the Mexican tuna fleet is owned by the private sector.

1/ These arrangements usually involve the transfer (change in flag of registration) or charter of foreign flag vessels.

2/ These data represent active tuna craft and, as such, do not include ownership information on inactive craft. However, it is believed that most of the inactive craft are privately owned. Also, the data for 1981 may differ from data presented previously owing to incomplete coverage.

Data on employment in the Mexican tuna-harvesting sector during the period under review are not available. However, such employment is estimated to be about 1,170 persons in 1986. ^{1/}

Production.—Mexican production of frozen tuna, represented by the catch, increased substantially during 1979–85. The following tabulation presents Mexican tuna catches during 1979–84 (data from various issues of Anuario Estadísticos de Pesca):

Year	Quantity	Quantity	Value	Unit value	
	(1,000 pounds)	(short tons)	(1,000 dollars)	(Per pound)	(Per ton)
1979.....	72,767	36,384	30,081	\$0.41	\$827
1980.....	74,251	37,126	38,123	.51	1,027
1981.....	159,959	79,980	86,362	.54	1,080
1982.....	90,884	45,442	24,380	.27	537
1983.....	81,817	40,909	30,834	.38	754
1984.....	172,333	86,167	56,444	.33	655
1985 ^{1/}	217,043	108,522	36,182	.17	333

^{1/} Preliminary.

The Mexican tuna catch increased sharply between 1979–81, rising 115 percent between 1980 and 1981 alone. This dramatic increase resulted from a rise in the number and capacity of tuna craft (see table 72). The catch then declined precipitously in 1982 to 91 million pounds, which was 43 percent lower than the previous year's level. The catch declined even further in 1983 to 82 million pounds. The drop in catch these 2 years was caused by a variety of factors, including internal economic difficulties and currency devaluations (table 73) that led to tie-ups of tuna craft, export market development difficulties, and resource declines brought about by the El Nino phenomenon. However, the catch recovered to record levels of 172 million pounds in 1984 and 217 million pounds in 1985, as some of these difficulties subsided, particularly the effects of El Nino.

The economic conditions that affected the Mexican tuna industry are evidenced by the indicators given in table 73. In addition, a major event that affected the Mexican tuna industry occurred in 1982 when the Mexican Government withdrew from the world currency market during February–June 1982, thus abandoning support of the value of the peso. As a result, the value of the peso vis-a-vis the dollar fell 44 percent in February alone. The government withdrew from the currency market again in August, 1982, and nationalized private banks and established a system of exchange controls in September, 1982, in order to stem a tide of capital flight and to ration hard currency (U.S. dollars). ^{2/} The effect on the tuna industry was severe, as

^{1/} Report from U.S. Embassy, Mexico City, July 15, 1986.

^{2/} Operation of the Trade Agreements Program, 34th report, United States International Trade Commission, publication 1414, 1983, pp. 193–205.

many new tuna vessels were purchased during that general time period with contracts specifying payment in dollars. ^{1/} Also, much of the necessary parts and equipment to maintain and operate tuna vessels and processing facilities are manufactured in the United States and, thus, must be imported. The devaluation of the peso increased the real cost of these items and, in addition, the foreign currency rations led to shortages of dollars with which to purchase the necessary items. These conditions subsided somewhat, but general economic conditions in Mexico have continued to impose difficulties on the Mexican tuna industry, as indicated by the data in table 73.

Problems with infrastructure and processing included inadequate unloading and cold storage facilities and plant closures that were caused, in large part, by the economic factors discussed above. And, marketing difficulties involved both a sluggish domestic market for canned tuna caused by the poor economic conditions and by general unfamiliarity with the product, and an export market that was constrained mainly by the U.S. embargo on Mexican tuna products.

Although Mexican Government data for 1986 are not yet available, the catch in 1986 is expected to surpass the 1985 level. The following tabulation shows the estimated Mexican tuna catch in the ETP area during a period covering approximately the first 7 months of the years 1984-86 (data from the IATTC, preliminary estimates):

<u>Period</u>	<u>Catch</u>	
	<u>Short tons</u>	<u>1,000 pounds</u>
Jan. 1-Aug. 6, 1984.....	38,104	76,208
Jan. 1-Aug. 5, 1985.....	55,923	111,846
Jan. 1-Aug. 4, 1986.....	66,608	133,216

Table 74 shows Mexican tuna landings, by State, for 1984. The leading State is Baja California, which accounted for 49 percent of total landings that year. Mexican tuna-canning capacity is concentrated in this area. Sinaloa was the second leading State for tuna landings in 1984, accounting for 9 percent of the total. Baja California Sur was the other major State for tuna landings (12 percent in 1984), and relatively small amounts of tuna were accounted for by other States.

Table 75 presents data on the Mexican tuna catch, by species, during 1979-84. Yellowfin was the principal species, accounting for about two-thirds of the catch during the period, followed by skipjack, which accounted for virtually all of the remainder. Minor amounts of other tuna species were caught by the Mexican tuna fleet.

Table 76 and figure 9 shows the Mexican tuna catch, by ownership sector, during 1979-84. The private sector accounted for the bulk of the catch and generally increased its share of the total during the period, from 41 percent

^{1/} This situation is discussed in greater detail later in the report.

in 1979 to 67 percent in 1984. This share was even higher in 1981 (74 percent) and 1983 (77 percent). The share of the total tuna catch accounted for by the public sector (state companies) fluctuated, ranging between 8 percent and 19 percent during the period. The share held by the cooperatives decreased from 48 percent in 1979 to 15 percent in 1983 and 1984. The general shift in the share of total catch to the private sector primarily resulted from the utilization by the private sector of larger and, generally, newer tuna craft compared with the other sectors.

As is apparent from the Mexican State landings data, the great bulk of Mexican tuna landings occurs in the ETP. There are generally abundant tuna resources off the Mexican coast as well as in relatively nearby Latin American waters. The principal species harvested, by far, is yellowfin, and a substantial amount of skipjack is harvested as well. The following tabulation shows the Mexican catch of yellowfin and skipjack tuna in the ETP during 1979-85 (data from the Inter-American Tropical Tuna Commission): ^{1/}

<u>Species</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
	<u>Short tons</u>						
Yellowfin..	25,179	20,910	44,167	20,819	20,741	59,996	87,779
Skipjack...	<u>5,116</u>	<u>13,519</u>	<u>29,233</u>	<u>18,485</u>	<u>8,329</u>	<u>10,708</u>	<u>6,230</u>
Total..	30,295	34,429	73,400	39,304	29,070	70,704	94,009
	<u>1,000 pounds</u>						
Yellowfin..	50,358	41,820	88,334	41,638	41,482	119,992	175,558
Skipjack...	<u>10,232</u>	<u>27,038</u>	<u>58,466</u>	<u>36,970</u>	<u>16,658</u>	<u>21,416</u>	<u>12,460</u>
Total..	60,590	68,858	146,800	78,608	58,140	141,408	188,018

The combined Mexican yellowfin and skipjack catch in the ETP rose irregularly from 30,295 tons (61 million pounds) in 1979 to 94,009 tons (188 million pounds) in 1985, or by 210 percent. This rise, however, was not constant over the period. The catch increased during 1979-81, reaching

^{1/} The data in this tabulation are collected and published by the Inter-American Tropical Tuna Commission (IATTC). These data differ from official Mexican Government data for a variety of reasons. First, the data in this tabulation are for the catch, which differs from landings. Catch data represent the actual catch of the fleet in a given year; whereas landings data represent the delivery of the catch to the dock. Since tuna craft may be at sea for extended periods of time, tuna may be caught in 1 year and landed in another. Also, these data only include the yellowfin and skipjack species. However, these two species account for a large share of total Mexican tuna harvests.

73,400 tons (147 million pounds) the latter year, before declining both in 1982 and 1983. The initial rise occurred as new craft, particularly large purse seiners, were added to Mexico's tuna fleet. The drop in catch in 1982 was caused mainly by the previously discussed poor economic conditions in Mexico, infrastructure and processing inadequacies, and marketing difficulties, all of which forced a reevaluation of the expansion of the tuna industry and led to craft tie-ups. The further decline in the Mexican tuna catch in 1983 resulted mainly from a combination of the above factors and a tuna resource scarcity in the ETP caused by the El Nino phenomenon. The catch recovered after 1983 as the El Nino subsided, economic conditions improved somewhat, and domestic and export markets were further developed.

Costs.—The costs of harvesting tuna by the Mexican fleet are high relative to other major harvesting countries, such as the United States. A major factor contributing to this situation is the substantial and continued depreciation of the peso, particularly vis-a-vis the U.S. dollar. A major fixed cost item is the acquisition and depreciation of a fishing vessel. The total purchase cost of tuna vessels in Mexico are comparable to such costs for other countries' fleets; indeed, as previously mentioned, much of Mexico's tuna fleet was purchased from foreign shipbuilders. However, inasmuch as a large share of Mexico's tuna fleet, particularly the larger vessels, was acquired from foreign shipyards with contracts specifying payment in U.S. dollars, the continued currency decline effectively increased the fixed cost of the vessels. 1/ For vessels built in Mexico, commercial interest rates are high (currently about 90 percent per annum), thus creating a relatively high debt service.

Variable costs to the Mexican tuna fleet are somewhat lower than those for the fleets of other countries, particularly the United States, but have generally been rising in recent years. Fuel, a major variable cost item, currently costs about 75 cents per gallon. 2/ This price was significantly lower in the past, but has risen in recent years, as the Mexican Government has been closing the gap in its two-tiered petroleum price system, owing mainly to economic pressures. 3/ One advantage held by the Mexican tuna fleet regarding fuel costs is the relatively short distance the fleet must travel between the major tuna-fishing grounds in the eastern tropical Pacific area and the location of the Mexican tuna processing facilities. Labor costs in the Mexican tuna-harvesting sector are low relative to those in the United States. The crew share (including the captain) averages between 20 and

1/ This situation is discussed in greater detail later in this section of the report.

2/ Calculated based on a reported price of 108 pesos per liter (interview with Sr. Raul Ostos Zubieta, General Manager, Productos Pesqueros Atun Mex, S.A. de C.V., Ensenada, Mexico, Aug. 18, 1986) and an exchange rate of 650 pesos per dollar (local rate in Ensenada at time of interview).

3/ The Mexican Government has maintained a two-tiered price system for petroleum—the world price for exports and a domestic price that, in the past, has been much lower than the world price. As a result of declining world petroleum prices and the recent economic crisis in Mexico, the difference between these two prices has been narrowing, as the Mexican Government attempts to increase revenues.

25 percent of the gross value of the catch in the private and cooperative sectors. The public sector compensates the crew on a tonnage basis, with current shares averaging about \$36 per ton for the captain, \$27 per ton for the engineer, and from \$3-9 per ton for other crew members, such as the speedboat drivers, cooks, and deck hands. ^{1/} The remaining major variable cost item is vessel repair and maintenance. This cost item is a much larger share of the cost structure of the Mexican tuna fleet than the U.S. fleet and is rising as the value of the peso declines against the U.S. dollar. This is because a large share of the equipment (e.g., engine, pumps, refrigeration systems, and winches) are manufactured in the United States, from which replacement parts must be imported. According to Mexican tuna industry members, a large Mexican tuna seiner's annual catch must equal about 3,000 metric tons (6.6 million pounds) in order to cover costs, at current tuna prices. ^{2/} This is roughly equivalent to an annual operating cost of between \$1.0 million and \$1.7 million. ^{3/}

Productivity.—Data are not available on productivity in the Mexican tuna harvesting sector. However, U.S. tuna industry sources have stated that, in general, the productivity of the Mexican tuna fleet is lower than that of the U.S. fleet. This is mainly because of the relatively recent entry of Mexico in the tuna fishery, particularly in the operation of large, contemporary purse seiners that require specialized operating techniques. The rapid expansion of the Mexican fleet outpaced the availability of experienced labor. However, this situation is reportedly changing, as the Mexican tuna fleet gains experience, the Mexican industry provides education at various fisheries technical institutes, and an increasing number of former U.S. tuna captains and engineers are employed on Mexican tuna seiners. ^{4/}

Markets.—Prior to the imposition of the U.S. embargo on imports of Mexican tuna products in 1980, the bulk of Mexico's frozen tuna production was exported, principally to the United States. After the embargo was imposed, Mexico attempted to develop both its domestic market and alternate foreign markets for frozen tuna. The domestic market for frozen tuna in Mexico, as in the United States, consists primarily of tuna canneries. Thus, in order to develop this market, the market for canned tuna had to be expanded. This is discussed later in the report. Mexican domestic consumption of frozen tuna, in terms of raw material used by canneries, increased from 33,325 tons in 1979 to 50,620 tons in 1981 before falling to 26,493 tons in 1983 (table 77). The decline during 1981-83 was caused by declines in canned tuna production that resulted from adverse economic and resource conditions (discussed in greater detail later in the report). Such consumption increased in 1984 to

^{1/} Interview with Sr. Raul Ostos Zubieta.

^{2/} Ibid.

^{3/} Calculated based on a current Mexican Government controlled price range for yellowfin tuna of 221,00-360,000 pesos per metric ton and an exchange rate of 650 pesos per dollar.

^{4/} According to the American Tunaboat Association, through August 1986, of a total of 41 Mexican purse seiners that landed tuna, 17 were skippered by U.S. captains. Furthermore, these 17 seiners accounted for 60 percent of the catch of the 41 total seiners.

57,249 tons, as tuna landings recovered from the El Nino phenomenon. Frozen tuna consumption is estimated to have increased further in 1985 to approximately 64,000 tons.

The following tabulation shows estimated Mexican exports of frozen tuna during 1979-85 (from report from U.S. Embassy, Mexico City, July 15, 1986, in thousands of pounds):

<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
22,130	10,429	<u>1/</u>	<u>1/</u>	32,840	38,770	78,709

1/ Not available.

With the loss in 1980 of its primary export market for frozen tuna, the United States, Mexico turned to increasing exports to other foreign markets. During 1983-85, Mexican frozen tuna exports increased 140 percent, from 33 million pounds the former year to 79 million pounds the latter year. In 1985, Italy was the major market accounting for about 53 million pounds, or two thirds of the total. Other major markets that year included Canada (4 million pounds), Costa Rica (4 million pounds), and France (3 million pounds). 1/

Processing sector

Industry structure.—The Mexican tuna canning sector did not expand as rapidly as the harvesting sector during 1979-85. The canning sector generally comprises facilities that are not dedicated solely to processing tuna. Most of these facilities had been in existence prior to the buildup of the Mexican tuna fleet and traditionally processed other species, principally sardines and shrimp. Also, many of the canneries produce other canned food products, such as tomato sauce and refried beans. In order to process tuna, tuna-canning machinery was installed in the existing plants. Even newly constructed plants generally are designed to process a variety of fishery products, unlike U.S. tuna canneries, which process only tuna. Table 77 shows the total number of tuna-canning plants and the number of such plants that were in operation during 1980-84. The total number of plants in which tuna could be processed remained relatively constant and ranged from 17 to 20 during the period. Not all of the plants were utilized for tuna canning each year. During 1980-84, the number of plants that actually canned tuna ranged from 14 to 18. The lowest number of plants that canned tuna occurred in 1983, the year that tuna catches declined substantially owing to El Nino.

Table 78 shows the number of Mexican tuna canning plants, by State, in operation during 1980-84. Baja California, by far, is the primary location, with the number of operating plants ranging from six to eight during the

1/ Report from U.S. Embassy, Mexico City, July 15, 1986.

period. Ensenada, which traditionally has been the center of the tuna industry in Mexico owing mainly to its proximity to the U.S. market, is the location of all of the tuna-canning plants in the State (see fig. 8). Some of Mexico's largest tuna plants are located in Ensenada. Sinaloa and Baja California Sur are the next leading States in terms of the location of Mexican tuna-canning plants. During 1980-84, the number of such plants ranged from three to four in Sinaloa and from two to four in Baja California Sur. The principal location of these plants in Sinaloa is Mazatlan, which is the second leading tuna center in Mexico. Mazatlan is a relatively new tuna-canning area that has been targeted for development, mainly by the public sector. Mazatlan, like Ensenada, is the location of some of Mexico's larger tuna-canning plants. In Baja California Sur, the tuna-canning plants are concentrated near the southern end of the peninsula and generally are smaller than plants in Ensenada and Mazatlan. During 1980-84, there also were tuna-canning plants in operation in the States of Veracruz, Sonora, Nayarit, and Campeche. These plants are relatively small compared with those in the major producing areas.

According to the State Department, there are seven tuna-canning plants that are currently under construction or being planned. ^{1/} The largest of these plants are in Manzanillo, Colimas, and in Puerto Madero, Chiapas. These locations are logistically advantageous because they are closer than the traditional producing areas of Ensenada and Mazatlan to the primary Mexican tuna fishing grounds and to the major domestic markets in the densely populated central valley region.

Table 77 shows the number of Mexican tuna-canning plants, by sector (public and private), during 1980-84. The total number of plants was generally evenly distributed among the two sectors during the period. However, the number of operating plants was consistently greater for the public sector. For example, in the El Nino year of 1983, when tuna catches were depressed and plants were idle, the number of privately owned tuna plants in operation fell to four from the previous year's six. In contrast, the number of publicly owned plants rose to 10 in 1983 from 9 the previous year. This suggests the likelihood that the canning plants in the public sector may be operated to maintain employment levels to a greater degree than the privately owned plants. Also, the Mexican Government has restructured tuna vessel loans and has required exclusive delivery of frozen tuna to public sector plants by vessels receiving these loans. This is discussed in greater detail later in the report.

Mexican production of canned tuna increased irregularly from 32 million pounds in 1979 to 49 million pounds in 1984 (table 77). Such production initially rose to 41 million pounds in 1981 and then fell both in 1982 and 1983 to 29 million pounds and 23 million pounds, respectively. The decline in the 1982 production level resulted from a combination of a decreased tuna catch and adverse domestic economic conditions, as previously discussed. The further, and more pronounced, decline in the 1983 tuna catch (mainly because of El Nino) was a more prominent factor in decreased canned tuna production in

^{1/} Report from U.S. Embassy, Mexico City, July 15, 1986. It is uncertain if all of these plants will actually be constructed.

1983. Canned tuna production rebounded in 1984 and was more than double the previous years' level, as the tuna catch increased and domestic consumption of canned tuna expanded. Preliminary Mexican Government estimates of the production of canned tuna in 1985 indicate a modest increase over the 1984 level, to slightly less than 53 million pounds. A slightly improved domestic market for canned tuna and increased production of frozen tuna were factors in the increase in canned tuna production that year.

Table 78 shows Mexican canned tuna production, by State, during 1980-84. Baja California, by far, was the leading State, accounting for two-thirds of total Mexican canned tuna production during the period. Sinaloa and Baja California Sur were the other leading States producing canned tuna during 1979-84; a minor amount of canned tuna was produced in other States during the period. There have been some shifts in the share of canned tuna production by location during 1979-84. The following tabulation shows the share of Mexican canned tuna production, by State, during this period (compiled from data in various issues of *Anuario Estadísticos de Pesca*) (in percent):

<u>State</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
Baja California.....	76	75	65	62	62	55
Sinaloa.....	9	9	18	23	16	23
Baja California Sur..	13	13	13	9	18	19
All other.....	<u>2</u>	<u>3</u>	<u>4</u>	<u>6</u>	<u>4</u>	<u>3</u>
Total.....	100	100	100	100	100	100

The dominance of Baja California in the production of canned tuna is declining while Sinaloa and Baja California Sur are gaining in prominence. Factors contributing to this shift include the latter States' advantage in proximity to the major Mexican tuna-fishing grounds (around the entrance to the Gulf of California) and to the aforementioned domestic market. Also, superior drydock and ship service facilities located in Mazatlan (Sinaloa) in the early 1980's contributed to the expansion there. ^{1/} The planned expansion of the tuna-canning industry in the States of Colimas and Chiapas, where major plants are under construction, may significantly shift the distribution of canned tuna production in the future. However, because of the recent lifting of the U.S. embargo on tuna products, the proximity of Ensenada and, to a lesser degree, Mazatlan to the United States, the world's largest market for canned tuna, may influence a shift in canned tuna production back to these areas.

Table 79 and figure 10 show Mexican canned tuna production, by sector, during 1979-85. Canned tuna production was increasingly concentrated in the publicly owned plants during the period. The share of total Mexican canned tuna production accounted for by these plants ranged from 55 percent in 1979 to 77 percent in 1983, with a generally increasing trend during 1979-84. These data indicate that the public sector plants are more apt than private sector plants to operate during periods of low catches and detrimental economic conditions for reasons discussed earlier.

^{1/} NMFS, IFR 82/81, June 1982.

Table 77 shows the capacity of Mexican tuna canneries during 1980-84, as measured in terms of raw material throughput in one 8-hour shift per day. This capacity remained relatively stable, ranging between 442.5 tons and 449.8 tons during 1980-83 for tuna-canning plants in operation. The capacity then jumped to 630.5 tons in 1984, representing an increase of 41 percent over the average for the previous 4 years. The increase in capacity in 1984 resulted primarily from plants that were idle in 1983 again becoming active in the production of canned tuna.

The bulk of Mexican tuna-canning capacity of operating plants is located in the State of Baja California (table 78). During 1980-84, tuna canneries in this State, all of which are located in Ensenada, accounted for 62 percent of total Mexican tuna canning capacity. Following Baja California were Baja California Sur (22 percent of total capacity), Sinaloa (10 percent), and Veracruz (4 percent). This distribution of capacity remained relatively constant during 1980-83. However, in 1984, the share of capacity in Baja California dropped to 49 percent, from 69 percent the previous year. The difference was gained by Sinaloa, which rose from 7 percent in 1983 to 18 percent in 1984, and Baja California Sur, where the share rose from 21 percent in 1983 to 29 percent in 1984. In absolute terms, the capacity in Baja California remained relatively constant during 1980-84, ranging from 287.1 tons in 1980 to 309.7 tons in 1982 and 1983. After remaining relatively constant during 1980-83, the capacity rose substantially in 1984 in both Sinaloa and Baja California Sur. The rise in tuna-canning capacity in these two States reflected efforts to develop tuna-producing areas closer to major fishing grounds in the ETP and domestic markets, as Baja California (Ensenada in particular) is comparatively distant from both.

During 1980-84, most of the Mexican capacity for operating tuna-canning plants was in the public sector. Tuna-canning plants that were publicly owned accounted for 63 percent of total Mexican capacity during this period. However, this sector's share of the total declined over the period, from 70 percent in 1980 to 53 percent in 1984. This occurred as the result of increased participation in the tuna-canning industry by private investors, some reportedly in joint-venture arrangements with foreign interests.

The measurement of capacity utilization in the Mexican tuna-canning industry can be approximated by comparing the operating plants' capacity with the amount of raw material used. ^{1/} Using this method, capacity utilization in Mexican canned tuna plants ranged during 1980-84 from 24 percent in 1983 to 36 percent in 1984 (table 80). The level in 1983 was, by far, the lowest during the period, as plants were idle for a lack of raw material caused

^{1/} This measure of capacity utilization is somewhat arbitrary in that the number of work days per year is estimated. Mexican Government statistics report capacity in terms of the amount of raw material that can be processed in one 8-hour shift per day. Commission staff has assumed a work year comprising 250 work days (1 shift per day, 5 days per week, 50 weeks per year). The absolute capacity-utilization data will vary significantly according to the number of annual work days used in their calculation. However, the trends in capacity utilization will be similar no matter what work base is assumed.

mainly by the El Nino that year. Capacity utilization generally was higher during the period for publicly owned tuna canneries, particularly during 1982-84. As was the case with the total number of plants in operation, the greater capacity utilization by the public sector plants, particularly during a period of declining catches (1982-83) suggests a strong motivation by this sector to maintain employment levels. Also, requirements by the Mexican Government in providing assistance to tuna vessel owners included provisions for delivering frozen tuna to publicly owned canneries in order to repay loans.

These capacity-utilization rates appear to be low by U.S. industry standards. This is because these capacity-utilization rates assumed a work year composed of 250 days, whereas Mexican tuna-canning plants generally operate for substantially fewer work days. Also, most Mexican tuna-canning plants operate only one shift, whereas U.S. plants generally operate a minimum of two shifts. Thus, these calculated rates could be even smaller based on U.S. standards. However, according to interviews with Mexican tuna industry officials, these rates are generally indicative of the Mexican tuna-canning sector. The Mexican canneries operate at lower rates than U.S. canneries for many reasons, including the fact that the Mexican canneries generally do not use imported frozen tuna, and, therefore, must rely on domestic supplies that may be somewhat sporadic and seasonal in nature. Also, some contracts with labor unions limit the number of work days per year. Furthermore, difficulties in marketing canned tuna, both in domestic and export markets, have limited the utilization of Mexican tuna-canning facilities.

One problem that has been affecting the Mexican tuna industry has been the limited cold-storage facilities for raw tuna. The following tabulation presents data on the average monthly cold-storage capacity (for raw tuna) of the Mexican tuna-canning industry, by port, in 1982 and in 1986 (1982 data from NMFS; 1986 data from report from U.S. Embassy, Mexico City, July 15, 1986; in short tons per month):

<u>Port</u>	<u>1982</u>	<u>1986</u>
Ensenada.....	8,268	8,598
Mazatlan.....	14,440 <u>1/</u>	4,409
All other.....	<u>6,118</u>	<u>6,393</u>
Total.....	28,826	19,400

1/ Includes 3 cargo vessels, with a total capacity of 6,600 tons, that were temporarily used as cold-storage facilities.

Data for the 2 years presented above cannot be directly compared, owing to the temporary use of the cargo vessels for storing tuna in 1982. However, if the 6,600-ton capacity represented by these vessels is subtracted from the total for that year, it appears that cold storage capacity declined somewhat between 1982 and 1986, and almost certainly has not increased. A general shortage of cold storage facilities remained a problem for the Mexican tuna industry

during the entire period under review, as the expansion of the Mexican fleet and the resulting rise in tuna catches outpaced the cold storage capacity of the processing sector. This problem was even more acute as a result of the U.S. embargo on imports of Mexican tuna products, particularly since the bulk of the Mexican tuna catch prior to the embargo was exported to the United States. A result of the insufficient cold storage facilities has been a widespread problem with spoilage of frozen tuna. According to a recent report, an estimated 39 percent of the 1985 Mexican tuna catch was spoiled due to inadequate cold-storage capacity. ^{1/} However, according to estimates of the Department of State, ^{2/} the seven tuna canneries either being planned or under construction have an estimated combined cold storage capacity of at least 5,700 tons. This would increase the present cold-storage capacity by nearly one third. Also, Mexico has been exporting a large part of their catch, thus mitigating the negative effects of the shortage of cold storage capacity.

Costs.—Data on costs in the Mexican tuna processing sector are limited. The total cost of producing a case (48 cans, 198 grams per can) of tuna in Mexico is reported to be approximately \$21.50. ^{3/} At this cost, the Mexican tuna processors are operating at a profit, since the Government-controlled wholesale price is about \$23.38 per case. ^{4/}

The following tabulation shows an estimated cost structure of producing a case of tuna in Mexican processing plants: ^{5/}

<u>Cost item</u>	<u>Share (percent) of total cost</u>
Raw tuna.....	55
Cans, labels, and packing material.....	23
Overhead.....	15
Packing medium (oil)....	5
Labor.....	2
Total.....	100

This cost structure differs somewhat from that in U.S. tuna-processing plants. In general, raw tuna is a smaller cost component in Mexico, and cans and packaging materials are a larger component.

^{1/} Fishing News International, August 1986, p. 10.

^{2/} Report from U.S. Embassy, Tokyo, July 15, 1986.

^{3/} Estimated based on information provided in interviews with Mexican tuna-processing production managers.

^{4/} Based on a set price on May 23, 1986 of 15,195.51 pesos per case and an exchange rate of 650 pesos per dollar.

^{5/} Estimated based on information provided in interviews with Mexican tuna-processing production managers.

With regard to individual cost items, current frozen tuna prices (which are Government controlled) in Mexico are significantly lower (about 30 percent) than the world price, thus giving Mexican tuna processors an advantage. Labor costs are also comparatively low, reportedly less than \$1 per hour. ^{1/}

As with the tuna-harvesting sector, the falling value of the peso vis-a-vis the dollar affects the costs in the tuna-processing sector. Much of the machinery and equipment utilized in Mexican processing plants is manufactured in the United States, and the decline in the peso increases the cost of new and replacement machinery and parts that must be imported from the United States.

Productivity.—Specific data are not available on productivity in the Mexican tuna processing sector. However, such productivity is believed to be lower than in other major canned tuna producing countries. This is due to factors such as the previously mentioned union limitations on the number of work days in some plants, the sometimes sporadic nature of tuna landings at processing plants, and the multi-species and -product processing nature of Mexican tuna-processing plants. These factors limit the processing efficiency, with regards to canned tuna, in these plants. Also, Mexican tuna-processing plants are substantially smaller in scale than plants in other major producing countries. For example, the largest Mexican plants have the physical capacity to process about 80 tons of frozen tuna per 8 hour shift, whereas larger Thai plants can process between 100-125 tons per shift and larger U.S. plants between 150-250 tons per shift. ^{2/} Economies of size are not as great in Mexican tuna-processing plants, thus limiting productivity.

Markets.—Virtually all of Mexico's canned tuna is marketed domestically, as Mexico has not been successful in developing export markets for the product. The domestic market is concentrated in major metropolitan areas, with Mexico City and the central valley region being the primary market area. Virtually all of Mexican production of canned tuna is marketed packed in oil. According to interviews with Mexican tuna industry members, the bulk of Mexican canned tuna is marketed in retail-sized cans of 198 grams (comparable to the standard U.S. can size of 6.5-7 ounces), with a small, but growing, institutional market. Although the domestic canned tuna market in Mexico is increasing, there are several constraints to its growth. First, canned tuna is not a traditional food item in Mexico, and its introduction into consumers' diets has been difficult. Canned sardines is a more traditional item and competes strongly with canned tuna. Also, canned tuna is a relatively expensive food item for most of the Mexican population compared with other foods. In marketing canned tuna, prices are controlled by the Government, thus limiting profit margins by distributors and discouraging the promotion of canned tuna at the point of sale.

^{1/} According to the U.S. Department of State, Mexican cannery workers earn between \$4-7 per day.

^{2/} Interviews with production managers in Mexico, Thailand, and the United States.

Despite these problems, consumption of canned tuna in Mexico has increased in recent years. According to Mexican Government data, canned tuna consumption in Mexico increased from approximately 36.4 million pounds in 1983 to 47.9 million pounds in 1985, or by nearly one third. ^{1/} This is a substantial gain in absolute terms; however, canned tuna is a relatively new item in a market that is far from being fully developed. On a per capita basis, consumption increased from approximately 0.47 pounds in 1983 to 0.60 pounds in both 1984 and 1985. Thus, the absolute rise in consumption was accounted for by an increase in the population, which rose from 75.1 million inhabitants in 1983 to 78.5 million inhabitants in 1985.

Mexico has not exported any canned tuna since 1983, when approximately 433,000 pounds were exported to Canada. ^{2/} The main reasons for the recent lack of success for Mexican canned tuna exports have been market barriers and quality. Market barriers exist in the primary canned tuna markets of the United States (where an embargo was in place for most of the period during 1980-86) and Europe, where tariff rates on canned tuna are high (about 24 percent ad valorem). There has also been a perception of Mexican canned tuna as being of lower quality than that of other major producers. According to U.S. industry members, this is due primarily to poor handling of raw tuna (a situation that is said to be improving) and to poor appearance ^{3/} and integrity of the cans and can seams for the finished product.

Government involvement

Mexican Government involvement is extensive in the tuna industry, as it is in the fisheries sector in general. This involvement ranges from assisting private investors in obtaining investment capital to Government-ownership positions in harvesting, processing, and marketing facilities. Mexico has targeted the fisheries sector of its economy for development and growth in order to provide its population with an improved diet, increased employment, and to increase export earnings to obtain much needed foreign exchange. In the mid-1970's, when most nations, including Mexico, claimed a 200-mile exclusive economic zone for fishery resources, the Mexican Government attempted to accelerate the development of its fisheries by infusing considerable funds into this sector of the economy. In recent years, though, the Government has been reconsidering the extent of its participation in these fisheries, particularly in light of the previously discussed adverse economic conditions such as increasing external debt, a falling currency, high inflation, and decreasing foreign exchange earnings caused principally by depressed world petroleum prices. However, the involvement of the Mexican Government in the fisheries in general, and in the tuna industry in particular, is still substantial.

^{1/} Report from U.S. Embassy, Mexico City, July 15, 1986.

^{2/} According to official Mexican government data reported in Anuario Estadísticos de Pesca. However, other agencies, such as the Food and Agriculture Organization of the United Nations, report a small amount of Mexican canned tuna exports in 1984 and 1985.

^{3/} Mexican canned tuna production lines generally do not utilize a can washer before the can is retorted.

The Mexican Government agency responsible for the fisheries is the Secretaria de Pesca, or Secretariat of Fisheries (Sepesca). Sepesca is responsible for assisting the fisheries sector in a number of areas, including setting production goals, educating fishing crews, developing ports and infrastructure, assisting in plant and vessel construction and improvements, and aiding in the development of domestic and export markets. Affiliated with Sepesca is the Government-controlled corporation Productos Pesqueros Mexicanos (Mexican Fisheries Products) (PPM). PPM, which was formed in 1971, is involved in direct ownership of harvesting, processing, and marketing facilities. 1/ PPM's operations, which are funded by company revenues as well as Government funds, are on a nonprofit basis and, according to NMFS reports, are generally run at a deficit, particularly in recent years. 2/ As a result, in 1982, PPM was directed to decrease its expenditures, thus ending a prolonged period of expansion and signaling the Mexican Government's recognition of economic pressures to lower public spending in the fisheries sector.

The remaining major Government entity that is involved in the tuna fishery is the Government banking system. Specifically, the Government bank that is primarily responsible for providing funds for fisheries-related activities is the Banco Nacional Nacional de Fomento Cooperativo (Banpesca). Banpesca generally provides relatively low-interest loans and loan guarantees for the construction or improvement of fisheries facilities, including tuna-fishing vessels and processing facilities. Recently, Banpesca was also involved in restructuring tuna vessel debt and providing vessel operating loans.

Specific comprehensive data are not available on Government expenditures involving the tuna industry. However, some data are available on expenditures on the fisheries sector in general. The expenditures by Sepesca in 1984 totaled 11.929 billion pesos, or about \$71 million. 3/ This was higher than the 1983 budget of 7.056 billion pesos, or about \$59 million. However, with the relatively high inflation rate in Mexico, this increase is much smaller in real terms.

The budget for PPM totaled 128.286 billion pesos in 1984, or about \$764 million. This brings the total Government budget for the fisheries sector (accounted for by Sepesca and PPM) to 140.214 billion pesos in 1984, or about \$835 million. 3/

Table 81 presents data on the amount of credit extended to the Mexican fisheries sector by the Mexican Government and commercial banking system during 1979-84. In general, the amount of credit extended to the sector, in

1/ The public-sector harvesting and processing facilities referred to earlier in the report are owned and operated by PPM.

2/ NMFS, IFR-82/145.

3/ U.S. Department of State airgram, Jan. 10, 1986, Industrial Outlook Report: Fishing Industry. Pesos were converted to dollars using the following exchange rates (from International Financial Statistics): 1983—120.09; 1984—167.83

dollar terms, declined during the period ^{1/} and ranged from a high of \$289.6 million in 1980 to a low of \$205.1 million in 1983. The data also suggest a trend toward increased proportional credit extended to the fisheries by commercial banks and a decline in credit extended by national banks. Also, the data indicate a trend toward a generally increased proportion of credit extended to the public fisheries sector. In terms of fisheries activities, there appears to be a decreasing proportion of credit extended for fisheries development and an increasing proportion extended for marine products industrialization (mainly processing activities).

These data, while not specific to the tuna industry, clearly demonstrate the extent of the Mexican Government's commitment to and involvement in the fisheries sector of its economy, of which tuna is a large, and growing, part.

One major activity involving specific Government assistance to the tuna industry involves the restructuring of debt incurred by tuna vessel construction mainly during the early 1980's. Most of this debt was incurred for vessels built in foreign shipyards with contracts specifying payment in U.S. dollars. Table 82 shows tuna vessels under construction for Mexican owners, as of January 1982. Not all of the vessels were actually delivered to Mexican owners. However, according to estimates of Sepesca, as of 1984, Mexican vessel owners were 80 billion pesos (about \$450 million at the time) in debt to foreign creditors for vessels constructed in foreign shipyards. As the Mexican peso declined against the dollar, the magnitude of this debt increased because the contracts for the vessels specify payment in U.S. dollars. Most of the contracts were signed when the exchange rate was about 25 pesos to the dollar. The currency slide, including a major devaluation in 1982, occurred during a period when tuna vessel owners were experiencing other economic difficulties such as generally falling world tuna prices, limited markets, and resource declines caused by the El Nino phenomenon. Also, shortages of foreign exchange in Mexico during the period limited the ability of tuna vessel owners to acquire dollars to pay their debt even if they could afford to. As a result of this situation, Banpesca restructured this debt by assuming the vessel mortgages and providing amended loan terms to the original vessel owners. The amended terms included reducing and fixing the exchange-rate basis of the loan at 175 pesos per dollar ^{2/} and providing an 8-year payment period with a 4-year grace period. The foreign debt is being retired through the "Fideicomiso para la Cobertura de Riesgos Cambiarios" (FICORCA), which is a Mexican Government exchange risk trust that is responsible for refinancing foreign-currency debt in several sectors of the economy. The original tuna vessel owners make the restructured loan payments to FICORCA and Banpesca pays the original debt in foreign currency (dollars). The payment period for the restructured loans runs from 1984-1992. In

^{1/} The general decline is even greater in real terms when Mexico's high inflation rate is taken into account.

^{2/} At the time of the restructuring, the exchange rate was about 450 pesos to the dollar.

addition, there are reduced interest rates on these loans, which vary according to the efficiency of the individual vessel. The greater the efficiency, the lower the interest rate. 1/ Requirements placed on the original tuna vessel owners in order to receive the restructured loans included a pledge to annually catch at least 70 percent of the vessel's carrying capacity (the minimum efficiency standard) and a pledge to deliver at least 75 percent of their catch to Government-owned plants. Also, a repayment schedule was developed to repay the original portion of the loan, operating expenses and/or loans (discussed below), and the restructured exchange-rate portion of the loan assumed by FICORCA. Revenues from the catches of participating vessel owners are distributed to retire the debt in that order. However, according to Banpesca, currently only about 20 percent of the FICORCA portion of the debt is being repaid. 2/ This has caused a current reevaluation of this system, and possible remedies include lowering the exchange-rate basis to the original vessel owners.

In order to keep tuna vessels operating, Banpesca has also been providing operating loans at relatively favorable interest rates as part of the debt restructuring. This was mainly done to help ensure the payment of the overall debt. According to Banpesca, 3/ these operating loans fall into two categories. First, "working capital" loans are provided for trip expenses, such as fuel, ice, and groceries. These loans are at an interest rate of the "CPP" 4/ plus 4 percent, per annum. In addition, there are loans for equipment, maintenance, and repair, which are offered at the CPP rate. Although these interest rates are low compared with commercial rates, which currently are the CPP rate plus 20 percent, per annum, the CPP has been rising rapidly in recent months.

According to Banpesca, 2/ there are currently 10 tuna vessels that are now owned totally by Banpesca. Of these 10, 6 were foreclosed and 4 were delivered by foreign shipyards. Most of the vessels were previously owned or ordered by private interests and are in the larger (1,200 ton) size range. These vessels are anchored in Ensenada Harbor.

The Mexican Government is also involved in setting tuna prices, both for frozen tuna delivered to the processing facilities and for canned tuna distributed in the domestic market. The tuna prices are applicable to all sectors (public, private, and cooperatives) and are changed periodically. As

1/ This is presumably to provide incentive for a vessel operator to increase revenues, thus repaying the debt more quickly.

2/ Interview with Lic. Francisco Barbosa Stevens, Director, Banco Nacional Pesquero y Portuario, S.N.C., Institucion de Banca de Desarrollo, Ensenada, Mexico, Aug. 19, 1986.

3/ Ibid.

4/ The "CPP" was described by Lic. Barbosa as the banks' cost of money plus a small margin for bank overhead. Currently, the CPP rate is about 75 percent per annum. The CPP changes monthly and a 3-month moving average is used for Banpesca loans.

of May 23, 1986, Mexican frozen yellowfin prices, as set by Sepesca, are shown in the following tabulation:

<u>Weight range</u>	<u>Pesos per metric ton</u>	<u>Dollars per short ton 1/</u>
Greater than 9 kilograms.....	360,000	503
3.5 to 9 kilograms.....	335,000	467
2.5 to 3.5 kilograms.....	290,000	405
2 kilograms and less.....	221,000	308

1/ Calculated using the May 1986 exchange rate of 650 pesos per dollar (from International Financial Statistics).

The following tabulation shows Mexican canned tuna prices, as of May 27, 1986 (for cases of 48 cans; 198 grams per can, in pesos, set by la Direccion General de Precios de la Secretaria de Comercio y Fomento Industrial):

<u>Price level</u>	<u>Unit</u>	<u>Pesos per unit</u>	<u>Dollars per unit 1/</u>
Wholesale.....	Case.....	15,195.51	23.38
Retail.....	Case.....	15,955.29	24.55
Wholesale.....	Can.....	355.67	.55
Retail.....	Can.....	377.00	.58

1/ Calculated using the May 1986 exchange rate of 650 pesos per dollar (from International Financial Statistics).

Trade barriers

Mexican imports of fresh, chilled, or frozen tuna and canned tuna are dutiable at 45 percent ad valorem. Furthermore, imports of fresh, chilled, or frozen tuna are subject to "compensatory exchange," whereby the imports may be tied to some type of countertrade arrangement. Imports of canned tuna are also subject to compensatory exchange and, in addition, are subject to approval by the Commerce Secretary.

Potential Role of Mexico in the U.S. Tuna Market

Appendix I contains the Commission's analysis of the potential role which Mexico may play in the U.S. tuna market following the recent termination of the embargo on U.S. imports of Mexican tuna products, and the potential impact of such imports on the U.S. tuna industry and market. This section summarizes the major findings of the analysis.

The United States terminated the embargo on U.S. imports of Mexican tuna effective August 13, 1986. Beginning September 1, 1986, the Mexican Government imposed a voluntary restraint on Mexican exports of tuna to the U.S. market, limiting such exports to the following annual levels (data in round-weight equivalent):

<u>12-month period ending—</u>	<u>Volume</u>	
	<u>metric tons</u>	<u>thousand pounds</u>
August 31, 1987	17,500	38,581
August 31, 1988	22,500	49,604
August 31, 1989 <u>1/</u>	27,500 <u>2/</u>	60,627 <u>2/</u>

1/ After August 31, 1989, there will be no restraint on exports.

2/ Subject to review during the previous year.

Source: Office of Fisheries Affairs, U.S. Department of State.

The following assumptions and conditions are used in the analysis: (1) Mexican exports of tuna to the U.S. market will consist primarily of frozen tropical tuna, owing to both constraints on Mexican production and U.S. market barriers to canned tuna imports; (2) Mexican exports to the U.S. market during the period covered by the voluntary restraint agreement (VRA) will in fact be effectively limited by the VRA, i.e., the volume of Mexican exports will equal the VRA-set limits; (3) the U.S. tuna market is actually a pair of related markets, one for frozen tuna and the other for canned tuna, the former product being the raw material for the latter product; and (4) Mexican exports to the U.S. market will, in the short run, be diverted from existing exports or domestic consumption, and will not come from increased production. Additionally, the following assumptions are made concerning the short-run (one year or less) price elasticity of demand and supply in the U.S. tuna market: U.S. demand for frozen tuna, which is derived from the U.S. market demand for canned tuna and the supply of imported canned tuna (which tends to reduce the demand faced by U.S. processors), is price inelastic, as is the domestic supply of frozen tuna; the supply of imported canned tuna, however, is highly (but not perfectly) price elastic, as is the foreign supply of canned tuna in the U.S. market. The summary of the probable effects of the increased supply of Mexican tuna on U.S. producers and consumers which follows takes these assumptions and conditions into consideration.

Probable effect on U.S. tuna producers

The immediate effect of Mexican tuna exports to the U.S. market will be felt in the market for frozen tuna. Since frozen tuna is a homogeneous commodity, an increase in supply from one source affects the demand and price for frozen tuna from all other sources. Assuming neither U.S. processors' demand nor domestic or foreign supply is perfectly elastic, such increased Mexican supply will depress the U.S. price for frozen tuna received by

domestic and foreign suppliers alike. The relatively inelastic supply from domestic suppliers compared with foreign (non-Mexican) supply suggests that domestic suppliers will bear a greater part of the competitive pressure from increased Mexican exports in the form of lower prices, while foreign suppliers will cut back their shipments to the U.S. market in favor of other foreign markets less directly affected by the altered Mexican trade pattern. In the short run, U.S. suppliers have few markets as alternatives to U.S. processors' purchases, and must continue to rely heavily on the domestic market. Reduced U.S. prices for frozen tuna may induce U.S. suppliers to develop export markets, which will provide an alternative to the increasingly competitive U.S. market.

The assumed price elasticities of demand and supply suggest that an important effect of the increased Mexican supply of frozen tuna will be the diversion of other foreign tuna from the U.S. market to other foreign markets. This diverted supply of foreign tuna may fill the gaps in other foreign markets left by Mexican exporters that now supply the U.S. market. Such gaps will probably be left in distant markets, where the transportation cost differential vis-a-vis the U.S. market causes Mexican exporters to shift to the U.S. market. Since, in general, the world's producers of frozen tuna are located significant distances from the world's major markets, there is probably going to be little savings in transportation cost enjoyed by these foreign suppliers when they switch markets, and their only incentive to shift out of the U.S. market will be a declining U.S. price for frozen tuna.

The effect on U.S. tuna processors resulting from increased imports from Mexico will be a reduction in the cost of their raw material. Since the shift by Mexican exporters to the U.S. market will probably not cause a similar decline in the price of frozen tuna in foreign markets, the decline in the U.S. price will give U.S. processors a competitive advantage vis-a-vis their foreign competitors in the U.S. canned tuna market. To the extent that the demand faced by U.S. processors for their canned tuna is price elastic (which would be the case if the foreign supply of canned tuna is price elastic), this cost advantage to U.S. processors will have little effect on U.S. prices for canned tuna, and will instead give U.S. processors an opportunity to capture a larger share of the U.S. market for canned tuna.

To summarize, the possible impact on U.S. producers resulting from imports of Mexican tuna is mixed. U.S. harvesters will most probably be negatively impacted by increased competition from Mexican exporters of frozen tuna. At best, U.S. harvesters may experience no impact if the Mexican supply completely displaces other foreign tuna and leaves net foreign supply in the U.S. market (and the U.S. price) unchanged; this complete displacement would most likely occur if foreign (non-Mexican) supply is perfectly price elastic, which is unlikely given the large share of the world frozen tuna market held by the United States. U.S. processors stand to gain from the increased supply of Mexican frozen tuna, since any downward effect of such supply on the U.S. price for frozen tuna reduces their most important cost item, raw material.

Probable effect on U.S. tuna consumers

To the extent that the cost advantage to U.S. processors translates into reduced prices for canned tuna, U.S. consumers will probably benefit from increased imports of Mexican tuna. The extent of this gain by consumers will be limited by the elasticity of supply of imported canned tuna. If such supply is highly price elastic, any increased output by domestic processors will simply displace imports, with little net effect on prices. In addition, there exists the possibility of anticompetitive effects resulting from the gain by the highly concentrated processing sector of an even larger share of the domestic canned tuna market. Such effects, if they occurred, could counter any cost savings that would otherwise push prices down in a highly competitive market. That such market power may exist in tuna marketing could be suggested by the high concentration level among domestic firms, and by the unitary or less than unitary price elasticity of demand for canned tuna which has been estimated by a number of researchers of the U.S. tuna market (noted in the appendix). This price-inelastic demand indicates that there are few ready alternatives to canned tuna for many consumers.

In sum, the possible impact on U.S. consumers resulting from imports of Mexican tuna is probably positive, a gain in the form of lower prices for canned tuna resulting from the cost advantage given to U.S. processors by reduced prices for frozen tuna. Among the possible influences which would reduce such a benefit are a price-elastic supply of imports, which would absorb the effect of increased competition from U.S. processors by withdrawing product from the U.S. market, and the possible lessening in competitive pressure within the U.S. tuna processing sector if such firms capture a significantly greater share of the domestic market.

COMPETITIVE CONDITIONS

Costs of Production

There is probably no more important single factor influencing the international competitiveness of the U.S. tuna industry than its costs of production vis-a-vis those of its foreign rivals. This factor has been central to industry arguments explaining not only the nature and extent of competition from foreign rivals; it is also used by import-protection proponents and opponents alike to explain the widespread restructuring and relocation of the domestic industry.

In a competitive market, costs of production are the crucial factor determining the degree of success or failure of the industry members. Where there are market "imperfections," such as differentiated products, prices controlled by buyers or sellers, or capital immobility or other barriers to entry or exit, ^{1/} inefficient firms can at least temporarily insulate

^{1/} All of which are either real or alleged in the U.S. tuna market.

themselves from competitive pressures on costs. But even to the extent such imperfections characterize sectors of the U.S. tuna market, new low-cost competition from abroad appears to have added the necessary impetus to make both the frozen and canned tuna markets in the United States and worldwide increasingly competitive. The most important costs of production in the tuna industry are labor, other variable inputs, capital availability, and harvesting costs.

Labor costs

Although labor cost is a small component of the total cost of producing canned tuna, the relative cost of labor in various regions of the world is a frequently cited cost factor explaining the relative competitiveness of the world's tuna producers and processors. The extent to which relative labor costs influence profitability in tuna processing is part of the explanation of the competitiveness of the U.S. industry vis-a-vis foreign competition. It also helps explain the relative performance of firms within the U.S. industry. ^{1/} Different labor costs among producers reflect differing relative labor productivities as well as differences in the local standard (and cost) of living; in a competitive market the former influences the level of labor employed, while the latter determines the going wage rate.

Within the U.S. tuna industry, there are significant differences in wage costs in tuna processing between the traditional California location and locations in Puerto Rico and American Samoa. Wages are substantially higher in California than in either Puerto Rico or American Samoa. Under a union contract negotiated for the February 1986-February 1987 period, according to U.S. Department of Labor data, selected job classifications in California tuna processing command the following hourly wage rates (exclusive of fringe benefits):

Packing machine operator...	\$7.05
Retort operator.....	8.34
Tuna butcher.....	7.51
Tuna cleaner.....	6.63
Jitney driver.....	7.61
Label machine operator.....	7.33

^{1/} This may be true particularly with respect to California facilities versus offshore U.S. facilities. Although Pan-Pacific, the only remaining California tuna processor, testified in the public hearing in the 1984 section 201 investigation that "labor or other cost advantages that may be enjoyed by foreign competitors have never been an historic factor in tuna competition," (hearing transcript, p. 54) this position is counter to a later statement as part of the company's advertising campaign promoting a new brand of tuna: "Low-cost labor in foreign countries led all but one tuna company to abandon [continental U.S.] facilities and workers." (Seafood Business Report, March/April 1985, p. 10). According to the same source, Pan-Pacific workers took a \$1/hour wage cut in late 1984, about 15 percent of their average wage pay, to be restored over 3 years.

According to the same source, in Puerto Rican tuna-processing plants, the minimum wage at entry level as of November 1985 ranged from \$3.35 (the legal minimum wage) to \$4.40 per hour, depending on the employer, rising after a probationary period of 30 to 90 days to \$3.66-\$4.80 per hour. In American Samoa, as of November 1985, tuna-processing laborers started out at \$2.82 per hour (a minimum wage set under the U.S. Fair Labor Standards Act), while the industry-wide average wage rate on the island was \$2.94 per hour. It is probable that much of the difference in these wage rates can be explained by relative costs of living in the three areas, primarily as a result of the differing standards of living. The differences in the minimum wage rates established by the Federal Government reflect this difference. For instance, there is a difference of as much as 53¢ per hour between American Samoa and other U.S. regions, or 19 percent of the American Samoa minimum wage. Productivity measures should be calculated in order to assess the role that differing domestic labor productivity rates play in explaining the U.S. wage differentials. Unfortunately, the small number of California and American Samoa firms precludes the public release of the data required to illustrate such productivity rates.

With respect to foreign competitors in the U.S. tuna market, the country of greatest interest is Thailand, because of the swift growth of its tuna industry in recent years, its current dominant position in the U.S. import market, its ties with U.S. processors, and its extremely low-wage rates. According to representatives of Thai tuna processors interviewed by Commission staff, the wage rate for tuna-processing workers in 1985 was the equivalent of about \$2.85 per day, or 28.5¢ per hour for a typical 10-hour day. This means that the average hourly wage rate in tuna processing in Thailand is about 4 percent of the wage rate earned by a California tuna cleaner, between 6 and 8 percent of the wage rate in Puerto Rico, and about 10 percent of the wage rate in American Samoa (all rates exclusive of fringe benefits).

Of course, these wage differentials must be balanced against the labor productivity rate in Thailand tuna processing versus that in U.S. tuna processing. One possible factor offsetting the low wage rate in Thailand could be a higher labor/capital ratio in tuna processing. However, this does not seem to be the case inasmuch as the technology of large-scale tuna processing appears to be such that there is little flexibility in substituting labor for capital. ^{1/} With minor exceptions to account for such things as differing average sizes of fish processed, tuna-processing technology is standard not only throughout the U.S. industry, but throughout much of the world's producing areas. Most labor-intensive processes in Thai tuna processing, such as the butchering and cleaning of tuna, are labor intensive in U.S. plants as well, and such capital intensive processes as cooking, running canned product along conveyor belts, and labeling of cans, take place in Thai as well as U.S. plants. ^{2/}

^{1/} In the economist's language, the production function for tuna processing is homogeneous of degree 1 in labor and capital.

^{2/} One official of a Thai processing firm asserted to the Commission's staff that the degree of labor intensity in Thai tuna processing is 2.5 times that in U.S. operations. However, despite repeated requests by the Commission's staff to Thai industry representatives, data were not provided to support (footnote continued on following page)

Another possible factor offsetting the low wage rate in Thailand could be a lower productivity rate among Thai labor, which given the fixed-proportion nature of processing technology means that there would also be underutilized capital in such an operation. Conflicting characterizations of Thai labor productivity rates were provided to the Commission's staff by Thai industry representatives, as noted earlier. By one account, the productivity of Thai labor is "...sufficiently high to compete with (Thailand's) foreign counterparts;" ^{1/} by another, the Thai tuna-processing industry "... has reached its optimum level of efficiency;" ^{2/} by still another, Thai labor productivity lags that in the U.S. by 2-3 times. ^{3/} However, without more detailed data, we cannot attribute any of the difference in wage rates between Thai and U.S. plant workers to a difference in labor productivity.

Other variable input costs

The principal variable input into tuna processing other than labor and frozen tuna (which is discussed later in the report) is the tin can into which the processed tuna is packed. The cost of the tin can as a component of total processing cost can be quite high, as much as 15-20 percent of total costs. Most large tuna-processing companies in the United States and abroad manufacture their own tin cans from tin plate, usually at the same site at which the tuna-processing facility is located. The technology required of tin can manufacture is reported by U.S. industry sources to be standard worldwide, and the price of tin has historically been determined in a world market in which no single tuna-processing company is more than an insignificant part. In view of this, it appears that no cost advantage or disadvantage incurred by U.S. tuna processors can be attributed to the cost of tin cans.

It was reported by U.S. industry officials to the Commission's staff, however, that the adoption in recent years of a two-piece can in favor of a three-piece can has put less efficient firms at a cost disadvantage. A three-piece can consists of three plates (two ends and the middle loop, sealed along its side) that are sealed in three places. A two-piece can consists of two plates (one mechanically formed into a topless can and the other being the

(footnote continued from preceding page) claims concerning labor productivity (or other elements of the Thai cost structure). Moreover, the observation of a large Thai tuna-processing operation by the Commission's staff did not suggest such a proportionately high employment of labor compared with U.S. operations. Higher than average labor intensity may occur in the smaller plants (not observed by Commission staff), which, however, account for less than one-fourth of Thailand's canned tuna production. Alternatively, the tendency for Thai plants to process smaller tuna, such as skipjack or the minor local species, may result in a greater proportion of labor per pound of tuna processed.

^{1/} Dumri Konuntakiet, Unicord Co., Ltd., address before the INFOFISH Tuna Trade Conference, Bangkok, Thailand, Feb. 27, 1986.

^{2/} Submission of the Thai Food Processors Association, p. 44.

^{3/} Commission staff interview with Chan Han Seng, Thai Union Manufacturing Co., Ltd., Bangkok, Thailand, Mar. 3, 1986.

can's top) that are joined by one seal only. Converting to the new technology is costly, and some firms in the United States as well as foreign industries are not able to finance the necessary equipment to convert to the new can style and, therefore, continue to pack in three-piece cans. The two-piece can has a number of advantages over the three-piece can, including reduced manufacturing cost, less risk of contamination of the can's contents since there are fewer seals, and—an advantage from the retailer's point of view—easier stacking of individual cans, since the tapered bottom of one can fits into the top of another.

Resource Availability

It is obvious that the availability of tuna resources to the U.S. tuna industry, in particular the harvesters, is a vital determinant of its international competitiveness. Without access to abundant tuna resources, there are no bountiful tuna harvests. While processors can import their frozen tuna requirements, harvesters are not in a similar situation. Their ability to exploit abundant tuna resources and deliver frozen tuna to processors at a reasonable cost is central to the industry's success in the world market. There are a variety of determinants of resource availability to the U.S. tuna industry, including biological and other natural constraints as well as political constraints.

Natural constraints

A number of characteristics of tuna populations affect the availability of this resource to the U.S. as well as foreign tuna fleets. In the past two decades, the highly migratory nature of tuna has made it necessary for the growing U.S. fleet to develop long-distance harvesting technology in the form of large purse seiners. This technology allows the harvesters to follow the tuna on their transoceanic migrations. Today, the fleet of any major tuna-harvesting nation is similarly capable of distant-water harvesting, and in this respect, the more modern and larger vessels of the U.S. fleet are at least on a par with, if not superior to, other nations' fleets.

However, not all of the members of the U.S. fleet are shiny new 1200-ton vessels. A significant portion of the U.S. fleet still consists of older, small purse seiners located in the eastern Pacific. The reliance of these vessels on the tuna resources of the eastern Pacific has placed them at a competitive disadvantage with other fleets that fish in other areas of the world. This is because the yellowfin resource of the eastern Pacific is biologically the most heavily fished major tuna resource in the world. For most of the past 20 years, the exploitation of the yellowfin resource has been high enough to cause concern within the Inter-American Tropical Tuna Commission that the resource may at times not be able to withstand such heavy fishing pressure and so may begin to yield less than its maximum sustainable yield. Catch rates have become so low that the average cost of fishing has risen above the resource's value on the market. Since yellowfin resources in other areas of the world are not so severely depleted, the average cost of

harvesting these resources is less than in the eastern Pacific. For the older and smaller vessels in the U.S. fleet, vessels incapable of reliably navigating the route to the abundant western Pacific tuna resources, the state of the eastern Pacific tuna resources during the past several years has forced many to exit the industry or transfer to foreign flags, where such variable expenses as fuel or crew compensation are frequently lower, and in many cases, the sale of the vessel has allowed for an improved debt structure. As a result of these situations, the U.S. fleet has lost vessels, thereby reducing its total harvesting capacity but possibly enhancing its overall competitiveness by weeding out less efficient vessels.

The available data on the tuna resources of the western Pacific indicate that U.S. vessels fishing these resources do not face the prospect of severely diminished tuna abundance in the near future. The resources in this area have only been recently exploited on a large scale, which means there are larger populations consisting of larger (older) fish than will possibly be the case after several more years of heavy fishing. The tuna resources of other areas such as the Indian and Atlantic Oceans, are not currently exploited on a regular basis by U.S. vessels. The Indian Ocean contains abundant tuna resources, enabling the fleets of other nations, such as France and Spain, to harvest tuna at a competitive cost. However, the tuna resources of the Atlantic Ocean, currently fished by European and Soviet fleets among others, and only rarely and irregularly fished by U.S. vessels, are of uncertain condition and do not appear to provide a competitive alternative for U.S. vessels now fishing the eastern Pacific.

The 1982-84 El Nino, the cause of much of the U.S. fleet's financial difficulty at the time of the Commission's section 201 investigation, has dissipated and the displaced tuna resources have returned to their former abundance levels in the eastern and western Pacific. This irregularly and—at present—unpredictably occurring environmental phenomenon adds to the uncertainty surrounding the availability of tuna resources to U.S. harvesters. Although future El Nino events may not equal the extent and longevity of the record-setting 1982-84 event, even a moderate El Nino can affect harvesting costs and unpredictably influence where tuna will be the most abundant. The El Nino influence emphasizes the competitive advantage of a large-scale, flexible fleet of distant-water vessels, and in this regard the U.S. fleet is unsurpassed technologically. Economically, however, the fleet appears to be at a disadvantage, for many of its most technologically efficient vessels were constructed or acquired at high cost, and when a vessel moves to a different, more distant fishery, transshipment expenses rise correspondingly. A vessel operating at or below the break-even point financially, as the average U.S. purse seiner was in the years just preceding the most recent El Nino, can hardly afford the added fuel and transshipment costs incurred in moving to a more distant fishery. As a result, as the Commission found in the section 201 investigation, the effects of the 1982-84 El Nino on resource availability were directly responsible for a large part of the U.S. fleet's financial difficulty in recent years.

Political constraints

During the first half of the approximately 20-year span during which the purse seine fleet dominated the U.S. tuna-harvesting sector, access to the

world's tuna resources was unconstrained by anything besides natural factors. Beginning in the mid 1970's, most of the world's coastal nations extended their jurisdiction over adjacent marine resources out to 200 miles from their shore, and in the process, generally excluded foreign fishing within that jurisdiction. Since the tuna harvested by U.S. fishermen are almost entirely beyond the U.S. 200-mile limit and are frequently found within another nation's claimed jurisdiction, such extension of territory has in many cases effectively excluded U.S. fishermen from their traditional tuna-harvesting grounds. The antagonism created by such action has been increased by the exclusion by the United States of tuna from its 200-mile jurisdiction and the refusal to recognize other nations' claims over tuna within their 200-mile jurisdiction. The United States and Japan are alone among the world's major coastal nations in such exclusions. Thus it has been difficult for the United States and U.S. tuna fishermen to negotiate access to another nation's claimed tuna resources. A number of such nations have used their newly acquired tuna resources to develop a domestic-harvesting sector, in the process creating new competition for the U.S. fleet, both in access to resources and in the marketplace. Indeed, the fate of a number of tuna vessels forced to exit from the U.S.-flag fleet has been the transfer of national flag to these other nations' fleets. Examples include U.S. vessels that were transferred to the flags of Mexico, Venezuela, Grand Cayman, Chile, and Korea.

A significant effect on the U.S. fleet of the wave of extended fisheries jurisdictions around the world—in addition to outright exclusion from some traditional fishing areas—has been an increase in license fees to fish in areas that were previously open to all. Such fees add costs to U.S. fleet operations that are not incurred by the foreign nation's own fleet, and, consequently, place U.S. harvesters at a competitive disadvantage.

Future outlook

The prospects for resource availability for the U.S. tuna industry are mixed. In the traditional areas of the eastern and western tropical Pacific, access problems are likely to continue if agreements are not reached as to fees and other terms of access requested by the coastal nations involved. The continually expanding Latin South American tuna fleets in the eastern Pacific are certainly adverse developments from the point of view of U.S. fleet access to that area's resources, since total harvesting effort in years past (with a smaller non-U.S. fleet) was already high enough to dramatically deplete the yellowfin resource. Additional local (i.e., non-U.S.) harvesting effort will only serve to further reduce the surplus tuna resources available to foreign fishing fleets. Moreover, current attempts among Latin and South American nations to form a regional fisheries management organization (which would apparently exclude U.S. vessels as long as the United States refuses to recognize national jurisdiction over tuna), if successful, could further restrict U.S. access to those resources.

In the western Pacific, the U.S. participants in the current access negotiations are hopeful that an agreement can be worked out in the near future. This agreement would allow (for a fee) enhanced access by U.S. vessels to the region's abundant tuna resources.

Finally, the recent growth in U.S. exports of frozen tuna suggests the possibility of continued activity in such trade, which prior to 1984 was an insignificant segment of U.S. harvesters' overall marketing activity. Also, while it would take a substantial readjustment of the U.S. fleet's way of marketing tuna, the possibility exists of expansion into the Indian Ocean—an area with apparent room for growth in harvesting effort—and transshipment of the catch from there to processing facilities in Africa, Asia, and even U.S. locations. Already a number of the world's major tuna fleets, including those of France and Spain, are undertaking similar activity with apparent success. An advantage of the area's resources in addition to their abundance is the fact that a large portion lie outside the fisheries jurisdictions claimed by adjacent nations.

Industry Structure

In a classic paradigm of industrial organization originally developed by Edward S. Mason, ^{1/} the structure of an industry is a primary determinant of its conduct, which in turn influences industry performance. ^{2/} The structure of the U.S. tuna industry and differences between it and that of its foreign rivals can affect the industry's international competitiveness in the world tuna market in ways similar to those distinguishing a set of "imperfectly" competitive firms from a group of competitive rivals in a domestic market.

Deviations from "perfect" competition

There are a number of aspects of the historical U.S. tuna industry structure distinguishing it from the textbook model of "perfect" competition: the American Tuna Sales Association, the traditional representative of the U.S. tuna fleet in frozen-tuna price negotiations; the extensive contractual and financial connections between the purse seine fleet and processors, and the vertical integration by some processors "upstream" into harvesting; the high degree of concentration in processing; and the important role played by brand identification and product differentiation in the marketing of canned tuna, among others. In view of these, the U.S. tuna industry structure cannot be characterized as perfectly competitive. However, U.S. producers are not the only suppliers in either the frozen or canned tuna markets in the United States, for in both cases, imports are a significant component of the market. Moreover, to the extent the frozen and canned tuna markets are world markets, the dominance of the U.S. industry is diminished still further. The less significant the U.S. industry is in the market, the more seemingly competitive its conduct (and performance) becomes.

^{1/} See, for example, "Price and production policies of large-scale enterprise," American Economic Review, March 1939, pp. 61-74.

^{2/} Industry structure concerns the extent to which industry activity is concentrated in the hands of a few firms, i.e., horizontal concentration. It also considers the degree of vertical integration and diversification occurring in the industry. Industry performance considers such indicators as prices and profits, ease of entry, and technological progress.

Effects on competitiveness

Aspects of the historical U.S. industry structure such as those listed above have impacted both positively and negatively on the ability of the industry to compete in the U.S. market. The various connections between domestic processors and harvesters were considered necessary in the past in order for prospective fishermen to acquire vessels and to assure processors of a ready supply of tuna. The contractual price arrangements kept domestic prices low in periods of rising world tuna prices such as during the 1970's and reduced the overall costs of procuring tuna by eliminating competitive bidding on domestic tuna. 1/ When world supplies of frozen tuna increased in recent years and prices began to fall, the contract set domestic prices lagged behind the world spot prices. In addition, vertically integrated processors were losing money on their investments in harvesting. These two factors served to induce the exit from harvesting activities observed by a number of U.S. processors. From the harvesters' view, prices are no longer under control, and the financial assistance previously available from processors has diminished. On the processors' side, their remaining investments in U.S. vessels force them to continue to procure frozen tuna from domestic harvesters, and despite falling spot prices, the share of the frozen tuna market held by imports has been declining. The ready availability of low-priced imported frozen tuna puts downward pressure on the prices negotiated by U.S. processors for foreign as well as domestic tuna, and today prices of tuna from all sources are negotiated in very short-term contracts, a sharp contrast to the contracts of several months during the 1970's and early 1980's.

The high degree of horizontal concentration in U.S. tuna processing is related to both the financial relationship of processors with harvesters and the development of brand loyalty and product differentiation in marketing canned tuna. The financial ties outlined above were made both necessary and easier by the large absolute size of U.S. tuna-processing firms. The sizable capital investment in tuna processing requires the assurance of a steady supply of frozen tuna, which the contracts with and investments in purse seiners provided. Likewise, a fisherman seeking to finance the acquisition of a modern purse seiner needs outside resources, which have in the past been made available by processors either directly through co-ownership or indirectly through guarantees of bank loans.

The marketing of canned tuna that was developed by the older U.S. processors involves a significant degree of product differentiation, which has influenced the manner in which domestic processors must deal with import competition. Although imports are present in both the retail and institutional segments of the canned tuna market, their effect on domestic processors differs between the two segments. Imported canned tuna in the retail market are generally marketed in one of two ways: either (1) by the domestic processors themselves alongside (and labeled similarly to) their own domestic product; or (2) by chainstore retailers under the chain's "house" brand. In the former case, the importing processor's sales are obviously

1/ Edward C. Gallick, "Exclusive Dealing and Vertical Integration: The Efficiency of Contracts in the Tuna Industry," FTC Bureau of Economics Staff Report, August 1984.

enhanced by the imports, 1/ while its nonimporting rivals face additional competition from the imports. This is the primary way imported canned tuna can be marketed at premium prices, although there are also minor quantities of imports marketed under the foreign producer's own advertised brand. Imported canned tuna marketed under "house" brands commands a lower retail price and typically appeals to a price- rather than quality-conscious consumer; this slight form of market segmentation somewhat negates the price-reducing effects on the domestic processors' nationally advertised and premium-priced brands.

In the institutional trade, as with the "house" brand retail trade, competition from imports is more directly price based. Brand loyalty in this market is not as important as price and dependable supply, on both of which U.S. processors are said by some institutional distributors to fall short compared with foreign suppliers. The reduced brand identification increases the homogeneity of the product, and cost considerations become more important determinants of industry competitiveness. Although U.S. suppliers can fill orders on a shorter schedule by virtue of their geographic proximity and inventories, they can only with difficulty match the import's price, and as testimony of officials of two U.S. processors at the Commission's hearing in the section 201 investigation indicated, sales by domestic processors are frequently lost (or made at a substantial price discount) because of such price competition.

In sum, the structure of the U.S. tuna industry has influenced the nature of competition from imported frozen and canned tuna, but it has not prevented such competition. 2/ The added competition from foreign producers has forced adjustments in the industry structure, particularly at the frozen tuna market level, while in the canned tuna market the imports have appeared to make the retail and institutional trades more price competitive. The financial ties between domestic vessels and processors have prevented an increase in the share of the U.S. frozen tuna market held by imports. Increasing imports of canned tuna by U.S. processors through 1985 acted to increase both the share of the canned tuna market held by imports and the share held by the nationally advertised brands of canned tuna.

The use of capacity and inventories as competitive devices

The use of idle capacity (that is, above and beyond normal production levels) and inventories as competitive devices is common to many industries. Idle capacity and inventories can be used to meet temporary increases in

1/ This increase in the processor's total revenue is reduced if the processor must reduce the product's price to move the additional volume, since any reduction in the import's price serves to reduce the price of the domestic product as well.

2/ The effects of such competition on U.S. producers in domestic frozen and canned markets is not only from actual imports but as well from potential imports. A foreign supplier with existing non-U.S. markets that stands poised to enter the U.S. market at the slightest increase in relative prices poses a threat to domestic firms possibly equal to that from an actual foreign entrant.

demand, an important ability in competing for retailers and other customers that place high value on reliable suppliers. In addition, inventories allow for continued shipments when production is temporarily halted. Frequently retailers do not wish to maintain significant warehouse inventories of their own, particularly of brands not their own, and depend on suppliers to be able to maintain a steady flow of product.

U.S. tuna processors maintain substantial inventories of frozen and canned tuna as part of their normal operations. In contrast, foreign suppliers, such as those in Thailand, typically do not carry much inventory at all. Instead, they buy and process frozen tuna as their customers' current needs dictate. As a result, U.S. processors can withdraw product from inventory to supplement current production, and are thus better able than their foreign competitors to react to temporary surges in demand, shortfalls in competitors' supplies, or cutbacks in frozen tuna availability in world markets.

This advantage is particularly important in the advertised-brand retail market. If some event causes a cutback in capacity of a processor to supply a retailer, the shelfspace allocated to the brand of that supplier will not be kept open, but will be given to a competing brand. It can be quite costly or impossible to regain that shelfspace when the processor's normal shipments can resume. Maintaining inventories of canned tuna (or of frozen tuna from which to quickly process canned tuna) helps avoid such occurrences, and is one area in which domestic processors have an advantage over foreign competitors.

Another potential advantage to maintaining inventories relates to the ability of a processor to profit from changes in prices of frozen or canned tuna. In general, these prices move in similar directions over time. If supplies of frozen tuna on world markets are tight, frozen tuna prices will rise and production of canned tuna will decrease, putting upward pressure on prices of canned tuna. A processor that maintains inventories of canned tuna can continue to meet customers' needs with canned tuna drawn from inventory that was processed from frozen tuna bought when prices were low, or the processor can make canned tuna from frozen tuna put in inventory when prices were low. Either way, this processor is able to sell relatively low-cost canned tuna in high-price markets. Of course, this advantage is short term, and if prices continue to be high, the processor will run out of low-cost inventory, and continued shipments of canned tuna will have to be from production processed from high-priced frozen tuna. Moreover, when prices are falling, this advantage turns into a disadvantage, since current production is from low-priced frozen tuna, and inventories consist of tuna purchased and processed when prices were higher.

Another source of competitive advantage to domestic processors derived from inventories is the speed with which orders can be filled. In addition to creating a transportation-time advantage over overseas suppliers, which can be a substantial advantage for a Puerto Rican or Californian processor, inventories allow for a customer's order to be filled immediately. A supplier without inventory must wait to fill the order until the frozen tuna can be procured and the canned tuna is produced. Representatives of U.S. processors

and importers interviewed by Commission staff indicated that the time from placing the order with a foreign supplier to receiving the delivery in the United States was generally 6-8 weeks. As much as 3-4 weeks of this time was reported to be due to processing time that could have been saved by maintaining inventories; the remaining time was transportation and customs-related matters.

Exchange Rates

The role of exchange rates as a competitive factor affecting the U.S. tuna industry varies according to the tuna market sector (frozen or canned) and the countries involved. In the frozen sector, tuna is essentially a world commodity for which there is competition from several markets. The world price of tuna generally is denominated in U.S. dollars and is determined principally by demand and supply conditions in a world market relatively free of barriers as well as by conditions in the canned-market sector. Thus, exchange-rate movements involving the U.S. dollar vis-a-vis major foreign frozen tuna suppliers (such as Japan, Taiwan, Venezuela, and Panama) and competing markets (such as Japan, Thailand, and Western Europe) generally do not directly affect the price of frozen tuna to the U.S. market, but rather affect the effective price received by the foreign supplier. Depending on the direction of the exchange-rate change, the foreign supplier may decide whether to sell the tuna to the U.S. market at this price or sell to alternative markets, in which the effective price may be more advantageous depending on the exchange-rate movement of the alternative market's currency vis-a-vis the dollar. Thus, the effects of exchange-rate movements on the U.S. frozen tuna market may involve shifts in the sources of supplies rather than a change in price, since price is denominated in dollars and is affected more by changes in supply and demand than by exchange rates. Also, inasmuch as the U.S. tuna-harvesting industry sells the bulk of its production directly to U.S. processors, exchange rate effects on the harvesting industry generally are minimal.

Exchange-rate movements involving the U.S. dollar vis-a-vis the currencies of major foreign canned tuna suppliers (such as Thailand, Taiwan, Japan, and the Philippines) affect the price the foreign suppliers are able to sell canned tuna for in the U.S. market. This affects both the competitive position of a particular foreign supplier vis-a-vis U.S. producers as well as vis-a-vis competing foreign suppliers to the U.S. market. Thus, depending on the direction of the exchange-rate movement, a particular foreign supplier may gain a competitive advantage over U.S. producers or over competing foreign suppliers of canned tuna in the U.S. market. Historically, imports have held a relatively small share of the U.S. market, so the effect of exchange-rate movements was minimal. As the import-market share increased, this effect likely became greater, particularly since the U.S. dollar generally appreciated or maintained its position vis-a-vis major foreign suppliers, particularly in Asia. However, much of the increase in imports was supplied by Thailand, whose currency is loosely tied to the dollar but has still depreciated in real terms at an annual average rate of 5.8 percent. Exchange-rate movements may also influence a foreign supplier's decision to sell canned tuna in the U.S. market or in another country's market, depending

on the exchange rate between the dollar and the currency of the other market. For example, the recent depreciation of the U.S. dollar vis-a-vis major European currencies is reported to have contributed to a recent rise in exports of canned tuna to the European market by Thailand. However, relatively high European tariffs on imports of canned tuna likely has limited this exchange rate effect.

Table 83 presents nominal and real exchange-rate indexes between the U.S. dollar and the currencies of major frozen and canned tuna suppliers to the U.S. market during the period January 1981-March 1986. In general, the real value of the U.S. dollar appreciated vis-a-vis the currencies of tuna suppliers in Latin America and Asia (including Japan until 1986). During 1985-86, the dollar depreciated vis-a-vis the currencies of the major world tuna markets of Japan and Western Europe.

Quality

Quality is a factor that may affect the competitive position of suppliers in a market. Quality factors for frozen tuna generally fall under the categories of size, species, and condition. Size is a quality factor inasmuch as larger fish generally produce a greater yield to tuna processors, for which they will pay a premium. Species is a quality factor for reasons related to flesh color and size differences between species. Albacore has the lightest colored flesh of the tuna species and is marketed in canned form at a premium, which is partially passed back to the frozen tuna level. Yellowfin is generally lighter colored than skipjack, for which a slight premium may be paid. However, albacore is the only species that is differentiated in the canned market, and quality differences between the remaining species are more related to size, as yellowfin generally are significantly larger than skipjack. The condition of the fish is the only quality category that is controllable by the harvester. Quality factors related to the condition of the fish include salt content, backbone temperature, honeycomb meat, flesh bruises, and deformities. These factors are directly related to the fishing methods and handling techniques employed by harvesters, and can affect the price they receive.

There generally are no major qualitative differences between the current supplying countries of frozen tuna to the U.S. market, since, for the most part, the various international tuna fleets basically harvest the same tuna stocks using generally the same methods and technology. There are some variations from load to load caused by handling methods and by fishing methods and areas, but these variations are minor. Frozen tuna is a fungible commodity with little variation in quality between supply sources and, thus, quality is a minor factor affecting the competitiveness of the various suppliers.

For canned tuna, qualitative factors include the actual quality factors and perceived quality factors. Actual quality factors include the quality of the raw material that is canned, the wholesomeness of the final product, uniformity of taste and appearance, and, less directly, the integrity of the

container. Perceived quality factors include the species of fish (whitemeat (albacore) vs. lightmeat (yellowfin and skipjack)), the style of pack (chunk vs. solid, oil vs. water), brand label (advertised vs. private or store), and, to a lesser degree, the origin (imported vs. domestic).

Although there are standards of identity for and periodic inspection by the Food and Drug Administration (FDA) of both domestic and imported canned tuna, there is no mandatory continuous U.S. Government inspection system for the production of canned tuna or differential quality grades that are used by either the U.S. Government or the industry in the marketing of canned tuna, except for the designation for whitemeat tuna (packed from albacore) and for the type of pack (chunk vs. solid, oil vs. water). ^{1/} However, individual firms maintain their own quality-control operations, in which their production of canned tuna is extensively sampled for quality. Quality-control measures are extremely stringent since the negative impact of the marketing of even a small amount of poor quality product has been proven to be tremendous in the past.

In general, there currently are few differences in quality among the major domestic and foreign suppliers of canned tuna to the U.S. market. Most suppliers generally utilize similar technology in the production of canned tuna. Furthermore, foreign plants must be approved by the FDA to export canned tuna to the U.S. market, with approval being granted to plants whose governments certify that they employ similar production and quality-control measures to those in effect in U.S. plants. The FDA may conduct field inspections of these plants to insure compliance with this requirement. Also, some U.S. tuna-processing firms have implemented their own production and quality-control measures in foreign plants that produce canned tuna for distribution in the U.S. market by the U.S. processing firms. There are periodic quality problems that may surface from particular foreign suppliers, and the FDA monitors imports from such sources more closely. However, in general, the quality of domestic and imported canned tuna is similar, a fact that is supported both by the use of imported supplies by U.S. processing firms under their advertised brands and by the substantial share of the private-label and institutional market segments held by imported supplies.

Market Segments

A major competitive factor in the U.S. tuna market that affects participants is market segment. This is because competitive conditions may vary significantly depending on the particular market segment the participants are competing in. For frozen tuna, a dual segmentation in the U.S. market generally comprises the albacore and tropical (mainly yellowfin and skipjack) tuna categories. In the albacore segment, the U.S. tuna-harvesting industry consists principally of the west coast baitboat and troller fleet, as the purse seine fleet generally harvests a minor quantity of albacore. The major

^{1/} At one time, one U.S. firm packed tuna under voluntary continuous inspection by the U.S. Department of Commerce, for which it was so labeled. However, this is no longer being done.

competitive factor involving the albacore segment was the closing of all but one of the U.S. tuna-processing plants in southern California. These plants traditionally represented virtually the entire market for the production of the west coast albacore fleet. Thus, the closure of the great bulk of the processing-plant capacity in southern California was the major competitive condition during 1979-85 that affected the albacore segment of the U.S. frozen tuna market. The competitive conditions in this market segment negatively affected the baitboat fleet to the extent that, during 1979-85, the number and capacity of the albacore fleet declined by 68 percent and 73 percent, respectively. The number and capacity of trollers declined also, and the remaining vessels were forced to operate as far as 3,000 miles from their traditional ports in San Diego and San Pedro. Other effects on the fleet included attempts at marketing fresh albacore on the west coast and frozen albacore in export markets. The primary competitive condition in the albacore frozen market segment that affected U.S. tuna processors was the relative scarcity of the species and the increased reliance on imports owing to the closure of the processing facilities in southern California that previously obtained a significant portion of their albacore supplies from the U.S. albacore fleet. This caused U.S. processors to compete on the world market for a greater proportion of their albacore needs. However, the effect of this competitive factor varied for each processor, as their proportion of albacore usage differed significantly.

In the tropical tuna segment of the U.S. frozen tuna market, the major competitive factors that affected the market during 1979-85 were the restructuring of the U.S. tuna-processing industry, generally increasing world supplies and falling prices of frozen tropical tuna, and the emergence of foreign tuna-processing industries. The restructuring of the U.S. processing industry had a less negative impact on the U.S. purse seine fleet than on the albacore fleet because the purse seine fleet had a nearly unlimited range in which to pursue and harvest tuna. However, detrimental effects on the purse seine fleet included increased costs of delivering their production to plants that were farther from the traditional fishing grounds; fewer unloading points, which at times caused unloading delays; and, a smaller overall market for their production, as the restructuring involved a decrease in production capacity and frozen tuna demand. Increasing world supplies and falling prices of frozen tropical tuna also adversely affected the U.S. purse seine fleet, lowering gross revenues in the face of increasing costs. However, this situation was beneficial to U.S. tuna processors, as raw-material costs (the major component in their production-cost structure) declined significantly. The emergence and growth of foreign tuna-processing industries during 1979-85 generally increased the demand for frozen tuna, thus somewhat relieving some of the downward pressure on prices exerted by increasing world frozen tuna supplies during the period. This was beneficial to the U.S. tuna-harvesting sector, but increased the competition for and cost of frozen tuna to U.S. tuna processors. Also, an indirect effect of this situation was the increase in world canned tuna production and the resulting lowering of canned tuna prices during the period. This negated some of the beneficial effects to the U.S. tuna-harvesting sector, since declines in canned tuna prices generally result in declines in frozen tuna prices (assuming the supply of frozen tuna is constant).

Segmentation in the canned tuna market involves several aspects related to the type of pack. These include the packing medium (oil vs. water), the end consumer (retail vs. institutional), the species (white vs. light), and the label (advertised vs. private). Competitive conditions in these canned tuna market segments may differ greatly, and the position of domestic and imported products are affected by these conditions. The primary competitive condition related to the packing medium is the U.S. tariff structure. U.S. imports of canned tuna packed in water are subject to substantially lower tariff rates (6 percent or 12.5 percent ad valorem) than are imports of canned tuna packed in oil (35 percent ad valorem). Thus, virtually all imports are restricted to competing in the water-pack segment of the U.S. canned tuna market. However, this restriction has not severely limited imports owing mainly to another competitive condition affecting this aspect of the market, namely a growing consumer demand caused by health and dietary considerations for canned tuna packed in water. Production processes and costs are virtually identical for producing canned tuna packed in either medium. These factors have limited the detrimental effects of the high U.S. tariff on imports of canned tuna packed in oil, and actually have combined with the tariff situation to induce imports to concentrate in the water pack segment. Imports of canned tuna in oil are minor and consist mostly of specialty items destined for ethnic markets.

The principal competitive factors related to the end-consumer market segment (retail vs. institutional) is the market segment size and brand recognition. The retail segment accounts for about 90 percent of the total U.S. canned tuna market, and the institutional segment accounts for the remaining 10 percent. Brand recognition is most important in the retail segment, as the ultimate consumer in the institutional segment rarely knows the source of supply. These factors affected the competitive strategy of domestic processors and importers during 1979-85, a period when imports of canned tuna gained substantial market shares. In general, imports gained market share most prominently in the institutional sector, rising from 43 percent of this segment in 1979 to 62 percent in 1985 (table 28). This sector was easier for imports to enter in the U.S. market, as necessity for established brands is lower. Domestic processors, although retaining a share of this market, did not attempt to compete strongly with imports in this segment, choosing rather to increase competitive efforts in the retail segment.

The main competitive factors associated with the brand or label of canned tuna include market entry, product differentiation, sales premiums, and consumer preferences, all of which are interrelated. Brand designations are most important in the retail-market segment, as the end consumer may base their purchase decision, at least in part, on the brand. The market share captured by imports has been much smaller in the retail segment than in the institutional segment, rising from 2 percent in 1979 to 9 percent in 1985 (table 28). The entry was more difficult in the advertised-brand segment, where imports increased their market share from 2 percent in 1979 to 6 percent in 1985 (table 28). Market entry for a new brand of tuna is very difficult, as brand competition is intense and the current brands have been established for a long period. Also, establishing and maintaining brand recognition is costly. And, consumers generally consider a recognized brand to be of higher

quality than a private-label brand and are willing to pay a premium. The advertised-brand segment has long been the domain of domestic processors, and the increase in competition from imports has been less intense in this segment. The private-label segment is less brand oriented, as the label is usually that of the retail establishment. Consumers in this segment generally are more price oriented and may not associate brand with quality. Market entry is less difficult in this portion of the retail segment, and imports increased their market share from 2 percent in 1979 to 20 percent in 1985.

The principal competitive factors relating to the market segment by species (white vs. light) are similar to those discussed above for end-user and brand segments. The share of the U.S. canned tuna market held by whitemeat is approximately 20 percent, and the remaining share is held by lightmeat (table 26). U.S. processors hold about a 90-percent share of the U.S. whitemeat canned tuna market and about an 80-percent share of the lightmeat market.

Transportation

Transportation costs are a substantial factor in the marketing of both frozen and canned tuna. In general, world trade in frozen tuna is substantial, and frozen tuna is transported across large distances. This is due mainly to the fact that tuna are highly migratory and generally are harvested on the high seas relatively far from processing locations. As a result, a large part of world frozen tuna supplies are distributed through transshipping stations that developed relatively close to major fishing areas. Thus, necessity is a major reason for transporting frozen tuna long distances, and transportation introduces a major cost item in the marketing of frozen tuna.

Current transshipping rates given in table 35 range from \$80 per ton to \$190 per ton, depending on the origin and destination. Assuming a delivered price of frozen tuna to a processing plant of \$700 per ton (which is in the range of current prices for tropical tuna), these rates represent from 11 percent to 27 percent of the price. Transportation costs usually are borne by the seller of frozen tuna and, as these data show, are a major component of the cost of delivery (including production costs). Another effect of transportation as a competitive factor is the uncertainty it causes as a result of customarily fluctuating rates. Transportation rates for frozen tuna may vary greatly depending on a number of factors, such as seasonal demand for refrigerated cargo vessels (in which frozen tuna is transported); location of the seller in relation to major shipping routes; competition from other industries for available refrigerated cargo vessels; the ability of the transporter to backhaul cargo in conjunction with a particular shipment of frozen tuna (and vice versa); and the level of world frozen tuna supplies that are being transported. Transshipping frozen tuna imposes an additional, less obvious cost on sellers inasmuch as the product is subject to increased risk, both in terms of quality deterioration (since handling of the product increases when it is transshipped) and possible loss of the product (for which insurance expenses are incurred).

One aspect of transportation as a competitive factor that is not as apparent as transshipping costs is the cost to a tuna vessel to deliver its catch directly to a processing plant. The distance between fishing grounds and processing plants may be considerable, and, thus, the vessel's costs of delivery may be substantial, both in terms of fuel and wear on the vessel and in terms of lost fishing time.

Transshipping costs at any given time affect the competitive position of a particular seller of frozen tuna in a particular market and may affect marketing decisions. In the past, the U.S. tuna fleet enjoyed a favorable competitive position compared with foreign frozen tuna suppliers with respect to the transportation of frozen tuna to processing-plant locations in southern California. This was because the U.S. fleet traditionally harvested tuna mainly in the ETP relatively near the California processing plants. Also, foreign vessels are not permitted, by law, to directly land their catch in U.S. ports. However, this competitive advantage largely disappeared with the closure of the bulk of the processing capacity in the area. The competitive position currently held by the U.S. tuna fleet with respect to the transportation of frozen tuna differs according to the location of the market that it sells to (i.e., American Samoa, Puerto Rico, or export). With respect to American Samoa, the U.S. tuna fleet generally has no competitive advantage in terms of transportation, since foreign tuna vessels are permitted to unload there. In Puerto Rico, foreign tuna fishing vessels are not permitted to unload, thus incurring transshipping charges. U.S. tuna vessels have the option to deliver directly to the plant (the most common method used) or to transship, thus providing an advantage.

Transportation and associated costs likely have limited the U.S. tuna fleet's activity in export markets, which is evidenced by the fact that the fleet historically has delivered nearly all of its catch to U.S. processing facilities. However, recent exports to Thailand were probably influenced, in part, by the relatively low transshipping rate between Guam/Tinian and Bangkok, Thailand.

Transportation is also a factor that affects the competitive conditions in the U.S. canned tuna market, although it represents a much lower portion of marketing costs than for frozen tuna. In general, U.S. canned tuna producers hold an advantage over foreign suppliers to the U.S. market with respect to transportation. U.S. producers report that transportation costs currently average about 1-3 percent of the wholesale price of canned tuna in the U.S. market. In comparison, average import charges for U.S. imports of canned tuna from major suppliers in 1985 ranged between 5 and 8 percent of the customs value. The transportation advantage held by U.S. processors are greater in the east coast market region, since this region is supplied by U.S. plants in Puerto Rico, which are closer than foreign suppliers' production facilities. Once the product has entered the U.S. market, transportation costs are effectively identical for domestically produced and imported products.

The overall transportation advantage held by U.S. processors has declined somewhat in recent years, as production facilities have closed in southern California (which mostly affected the advantage in the west coast region) and

as some U.S. processors have recently procured a portion of their supplies from foreign producers. Also, the transportation advantage held by U.S. processors is mitigated by other competitive factors, such as generally lower production costs in major foreign supplying countries.

APPENDIX A

COPY OF LETTER TO CHAIRWOMAN STERN FROM AMBASSADOR CLAYTON YEUTTER,
THE UNITED STATES TRADE REPRESENTATIVE, REQUESTING THE INVESTIGATION

THE UNITED STATES TRADE REPRESENTATIVE
WASHINGTON
20506

OFFICE OF THE CHAIRWOMAN
USITC

1110

November 22, 85 NOV 27 P 4: 48

The Honorable Paula Stern
Chairwoman, U.S. International Trade
Commission
701 E Street, N.W.
Washington, D.C. 20436

Dear Chairwoman Stern:

The owners of some U.S. documented long-distance tuna fishing vessels based in California, Puerto Rico, American Samoa, Hawaii, and Guam have informed me that the U.S. tuna fleet is experiencing severe financial difficulties. They attribute their problem to a severe price depression in raw fish prices which they feel is caused by the large quantity of imported canned tuna. In addition, I am told that the U.S. Department of State is considering lifting an embargo on tuna products from Mexico that has been in place for almost five years. The embargo was instituted pursuant to Section 205 of the Magnuson Fishery Conservation and Management Act (16 U.S.C. Sec. 1825) after Mexico seized U.S. tuna vessels operating in the traditional eastern tropical Pacific Ocean fishing areas near that country. Because no seizures have occurred for two years, the State Department is following its usual practice of evaluating whether to lift the embargo. The tunaboat owners say lifting the embargo will lead to further economic harm to the U.S. tuna industry.

To assess the exact nature and extent of these problems and the validity of the vessel owners' concerns, I believe more information is required concerning the present conditions in the U.S. tuna industry, the factors which may be responsible for the financial difficulties of the U.S. tuna fleet, including the trends in imports of raw and canned tuna, and the future prospects of the U.S. tuna industry. Accordingly, I request, at the direction of the President and pursuant to Section 332(g) of the Tariff Act of 1930 that the U.S. International Trade Commission (USITC) conduct an investigation into the conditions of competition in the tuna industry, and in particular, the economic conditions of the tunaboat fleet. The investigation should encompass the industry as defined by the Commission in Investigation NO. TA-201-53. The general purpose of the investigation will be to update data the Commission gathered in the Section 201 investigation, and to examine additional factors affecting the industry's competitive position, such as tuna operations in Mexico and the possible impact of future imports of tuna products from Mexico on the U.S. industry if the embargo on U.S. imports of tuna products is terminated.

The Honorable Paula Stern
November 22, 1985
Page Two

In its investigation, the Commission should, to the extent possible, develop information pertinent to an evaluation of the competitive position of the harvesting and processing sectors of the U.S. and foreign industries, including, but not limited to, the following subjects:

A. The U.S. Industry

Levels and trends in technology, number of operations, employment and wages, sources of raw tuna used by the processing sector, production, capacity, major markets, inventories, costs, productivity, financial experience, changes in the structure of the industry such as shifts in locations of principal tuna fishing grounds and the transfer overseas of canned tuna production facilities, steps the U.S. fleet and processors have undertaken to adjust to import competition and the results of such measures, the availability of tuna resources, and government involvement in the industry (including U.S. government exposures resulting from defaults or potential defaults by boat operators on U.S. government-backed loans).

B. Foreign Industries

An assessment of the tuna industries in Thailand, Taiwan, the Philippines, and Japan, as well as Mexico whose tuna shipments to United States are currently embargoed. To the extent information can be readily obtained, this should include, inter alia, levels and trends in technology, number of operations, employment and wages, sources of raw tuna used by the processing sector, production, capacity, inventories, costs, productivity, financial experience, the availability of tuna resources to the foreign fleets, and government involvement in the industry (particularly export assistance programs).

C. The U.S. Market

A description of the market, channels of distribution, supply and demand factors, levels and trends in U.S. consumption, trade, and prices for domestic and foreign raw and canned tuna.

The Honorable Paula Stern
November 22, 1985
Page Three

D. Market Access Barriers Maintained by the Governments of the Major Producers and of Other Countries

Barriers encountered by U.S. exports of tuna in Thailand, Taiwan, the Philippines, Japan and Mexico, and in any other countries where the U.S. industry may be deprived of significant market opportunities because of barriers maintained by their governments.

E. Conditions of Competition in the U.S. Market

The major competitive factors affecting the performance of U.S. and major foreign suppliers of raw and canned tuna in the U.S. market, including prices, quality, resource availability, marketing, transportation, government involvement, and exchange rates, and the probable impact on the harvesting and processing sectors of the U.S. tuna industry of terminating the current embargo on U.S. imports of Mexican tuna products, including the effects on levels of employment sources of raw material, production, prices, trade, and consumption.

Where appropriate, the Commission should report data separately for cannery operations in the continental United States, Puerto Rico, and American Samoa.

The Commission should report the results of the investigation to the President no later than 10 months after receipt of this request.

Thank you for your cooperation in this matter.

Sincerely,


Clayton Yeutter

CY:rdt

APPENDIX B

NOTICE OF INSTITUTION OF INVESTIGATION NO. 332-224

for the meeting will include discussion of the 1986 draft plan. The meeting will be open to the public. Announcements of cancellation due to inclement weather will be made by radio stations WDNH, WDLC, WSUL, and WVOS.

Any member of the public may file with the council a written statement concerning agenda items. The statement should be addressed to the Upper Delaware Citizens Advisory Council, P.O. Box 84, Narrowsburg, NY 12764. Minutes of the meeting will be available for inspection four weeks after the meeting at the permanent headquarters of the Upper Delaware Scenic and Recreational River, River Road, 1 1/4 miles North of Narrowsburg, NY, Damascus Township, Pennsylvania.

Dated: February 3, 1986.

James W. Coleman, Jr.,
Regional Director, Mid-Atlantic Region
[FR Doc. 86-3081 Filed 2-11-86; 8:45 am]
BILLING CODE 4310-70-M

INTERNATIONAL TRADE COMMISSION

[Investigation No. 731-TA-254 (Final)]

Import Investigation; Heavy-Walled Rectangular Welded Carbon Steel Pipes and Tubes From Canada

Determination

On the basis of the record¹ developed in the subject investigation, the Commission determines,² pursuant to section 735(b) of the Tariff Act of 1930 (19 U.S.C. 1673d(b)), that an industry in the United States is not materially injured or threatened with material injury, and the establishment of an industry in the United States is not materially retarded, by reason of imports from Canada of heavy-walled rectangular welded carbon steel pipes and tubes, provided for in item 610.39 of the Tariff Schedules of the United States, which have been found by the Department of Commerce to be sold in the United States at less than fair value (LTFV).

Background

The Commission instituted this investigation effective November 22, 1985, following a final determination by the Department of Commerce that imports of heavy-walled rectangular welded carbon steel pipes and tubes from Canada were being sold at LTFV

within the meaning of section 731 of the Act (19 U.S.C. 1673). Notice of the institution of the Commission's investigation and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the Federal Register of December 17, 1985 (50 FR 51648). The hearing was held in Washington, DC, on January 10, 1986, and all persons who requested the opportunity were permitted to appear in person or by counsel.

The Commission transmitted its determination in this investigation to the Secretary of Commerce on February 4, 1986. The views of the Commission are contained in USITC Publication 1808 (February 1986), entitled "Heavy-Walled Rectangular Welded Carbon Steel Pipes and Tubes From Canada: Determination of the Commission in Investigation No. 731-TA-254 (Final) Under the Tariff Act of 1930, Together With the Information Obtained in the Investigation."

Issued: February 5, 1986.

By order of the Commission.

Kenneth R. Mason,

Secretary.

[FR Doc. 86-3086 Filed 2-11-86; 8:45 am]
BILLING CODE 7020-02-M

[Investigation No. 337-TA-231]

Certain Soft Sculpture Dolls Popularly Known as "Cabbage Patch Kids"—Related Literature and Packaging; Commission Decision Not To Review Initial Determination Amending Complaint and Notice of Investigation To Add Two Respondents

AGENCY: U.S. International Commission.

ACTION: Nonreview of an initial determination (ID) joining two respondents to the investigation.

SUMMARY: Notice is hereby given that the Commission has determined not to review the ID of the presiding administrative law judge (ALJ) to join two firms as respondents in the above-captioned investigation.

FOR FURTHER INFORMATION CONTACT: Stephen McLaughlin, Esq., Office of the General Counsel, U.S. International Trade Commission, telephone 202-523-0421.

SUPPLEMENTARY INFORMATION: On December 17, 1985, complaints Original Appalachian Artworks, Inc., and Coleco Industries, Inc., moved (Motion 231-7) to amend the complaint and the notice of investigation by joining as respondents:

(1) Calila, Inc., of Los Angeles, CA; and
(2) International Panasound, Inc., of New York, NY. On January 3, 1986, the ALJ issued an ID granting the motion. No petitions for review were filed, nor were any comments from other Government agencies reviewed.

Copies of the ALJ's ID and all other nonconfidential documents filed in connection with this investigation are available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 701 E Street NW., Washington, DC 20436, telephone 202-523-0161.

Hearing-impaired individuals are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on 202-724-0002.

Issued: February 3, 1986.

By order of the Commission.

Kenneth R. Mason,

Secretary.

[FR Doc. 86-3067 Filed 2-11-86; 8:45 am]
BILLING CODE 7020-02-M

[332-224]

Import Investigations; Competitive Conditions in the U.S. Tuna Industry

AGENCY: International Trade Commission.

ACTION: Institution of Investigation.

SUMMARY: The Commission instituted the investigation, No. 332-224, on January 30, 1986, under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)) for the purpose of gathering and presenting information on the competitive conditions in the U.S. tuna industry, following receipt therefor from the United States Trade Representative (USTR). USTR requested the investigation at the direction of the President.

EFFECTIVE DATE: January 30, 1986.

FOR FURTHER INFORMATION CONTACT: David L. Ingersoll or Roger L. Corey, Jr., Agriculture, Fisheries, and Forest Products Division, U.S. International Trade Commission, Washington, DC 20436, telephone (202) 724-0068 and 724-1759, respectively.

Background and Scope of Investigation

The USTR specifically requested the Commission to provide information in the following areas:

- (A) The U.S. Industry—profile the U.S. tuna harvesting and canning industry;
- (B) Foreign Industries—profile the

¹ The record is defined in section 207.2(i) of the Commission's rules of practice and procedure (19 CFR 207.2(i)).

² Commissioner Eckes dissenting.

tuna harvesting and canning industries in Thailand, Taiwan, and Philippines, Japan, and Mexico;

(C) The U.S. Market—describe the U.S. market for raw and canned tuna and discuss levels and trends in U.S. consumption, trade, and prices for domestic and foreign tuna;

(D) Market Trade Barriers—discuss barriers to U.S. tuna exports to Thailand, Taiwan, the Philippines, Japan, Mexico, and other relevant countries;

(E) Conditions of Competition in the U.S. Market—analyze the major competitive factors affecting domestic and foreign tuna suppliers in the U.S. market, including price, quality, resource availability, marketing, transportation, government involvement, exchange rates, and the probable impact of lifting the current embargo on U.S. imports of Mexican tuna products.

The Ambassador requested that the Commission report the results of its investigation no later than 10 months after receipt of the request, or by September 27, 1986.

Written Submissions

Interested persons are invited to submit written statements concerning the investigation. Commercial or financial information which a submitter desires the Commission to treat as confidential must be submitted on separate sheets of paper, each clearly marked "Confidential Business Information" at the top. All submissions requesting confidential treatment must conform with the requirements of § 201.6 of the Commission's *Rules of Practice and Procedure* (19 CFR 201.6). All written submissions, except for confidential business information, will be made available for inspection by interested persons. To be ensured of consideration by the Commission, written statements should be submitted at the earliest practicable date, but not later than July 1, 1986. All submissions should be addressed to the Secretary at the Commission's office in Washington, DC.

Hearing-impaired persons are advised that information on this matter can be obtained by contacting our TDD terminal on (202) 724-0002.

By order of the Commission.

Issued: February 3, 1986.

Kenneth R. Mason,
Secretary.

[FR Doc. 86-3065 Filed 2-11-86; 8:45 am]

BILLING CODE 7020-02-M

INTERSTATE COMMERCE COMMISSION

Rail Carriers; Release of Waybill Data for use by A Consulting Firm

The Commission has received a request from Richard J. Barber Associates, Inc. to use the Commission's 1984 Carload Waybill Sample in connection with a petition to be filed by its client later this year for the exemption from regulation of lumber, plywood, and particleboard. Specifically, they seek way bill data for these three commodities at the five-digit STCC level in order to demonstrate that portion of each commodity that is subject to regulation as well as that portion that is currently exempt from regulation.

The Commission requires rail carriers to file waybill sample information if in any of the past three years they terminated on their lines at least: (1) 4,500 revenue carloads or (2) 5 percent of revenue carloads in any one State (49 CFR Part 1244). From this waybill information, the Commission has developed a Public Use Waybill File that has satisfied the majority of all our waybill data requests while protecting the confidentiality of proprietary data submitted by the railroads. However, if confidential waybill data are requested, as in this case, we will consider releasing the data only after certain protective conditions are met and public notice is given. More specifically, under the Commission's current policy for handling waybill requests, we will not release any confidential waybill data until after: (1) certain requirements designed to protect the data's confidentiality are agreed to by the requesting party and (2) public notice is provided so affected parties have an opportunity to object. (49 FR 40328, September 6, 1983).

Accordingly, if any parties object to this request, they should file their objections (an original and 2 copies) within 14 calendar days of the date of this notice. They should also include all grounds for objection to the full or partial disclosure of the requested data. The Commission's Director of the Office of Transportation Analysis will consider these objections in determining whether to release the requested waybill data. Any parties who filed objections will be timely notified of the Director's decision. Contact: Elaine K. Kaiser (202) 275-0907.

James H. Bayne,
Secretary.

[FR Doc. 86-3042 Filed 2-11-86; 8:45 am]

BILLING CODE 7035-01-M

[Finance Docket No. 30775]

Fourteen-Eleven Corporation Exemption-Acquisition and Operation

AGENCY: Interstate Commerce Commission.

ACTION: Notice of exemption.

SUMMARY: The Interstate Commerce Commission exempts the acquisition and operation by Fourteen-eleven Corporation of a 2.5-mile rail line between milepost 37.2 and 39.7 in Lancaster County, PA, from the requirements of prior approval under 49 U.S.C. 10901.

DATES: This exemption will be effective on February 11, 1986. Petitions to reopen must be filed by March 4, 1986.

ADDRESSES: Send pleadings referring to Finance Docket No. 30775 to:

- (1) Office of the Secretary, Case Control Branch, Interstate Commerce Commission, Washington, DC 20423
- (2) Petitioner's representative: Daniel J. Sweeney, 1750 Pennsylvania Avenue NW., Washington, DC 20006.

FOR FURTHER INFORMATION CONTACT: Louis E. Gitomer (202) 275-7245.

SUPPLEMENTARY INFORMATION: Additional information is contained in the Commission's decision. To purchase a copy of the full decision, write to T.S. InfoSystems, Inc., Room 2229, Interstate Commerce Commission Building, Washington, DC 20423, or call 289-4357 (DC Metropolitan area) or toll-free (800) 424-5403.

Decided: January 31, 1986.

By the Commission, Chairman Gradison, Vice Chairman Simmons, Commissioners Sterrett, Andre, and Lamboley. Commissioner Lamboley did not participate in the disposition of this proceeding.

James H. Bayne,
Secretary.

[FR Doc. 86-3041 Filed 2-11-86; 8:45 am]
BILLING CODE 7035-01-M

[Docket No. AB-52 (Sub-No.44)]

The Atchison, Topeka and Santa Fe Railway Co.; Abandonment and Discontinuance in Neosho and Crawford Counties, KS; Notice of Findings

The Commission has issued a certificate authorizing The Atchison Topeka and Santa Fe Railway Company to: (1) Abandon its 53.26-mile line of railroad known as the Girard Subdivision of the Eastern Division, extending between milepost 0.0 at Chanute (A.U. Junction) and the end of the line at milepost 53.26 near Pittsburg

APPENDIX C
STATISTICAL TABLES

Table 1.—Tuna: U.S. landings by species and distance caught off U.S. shores and in international waters, 1979-85

Year and species	From 0 to 3 miles 2/		Between 3 and 200 miles		High seas or off foreign shores		Total	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
	pounds	dollars	pounds	dollars	pounds	dollars	pounds	dollars
1979:								
Albacore.....	-	-	14,203	9,191	1,239	797	15,442	9,988
Bigeye.....	-	-	579	1,264	2,355	1,037	2,934	2,301
Bluefin.....	303	467	4,005	3,802	11,699	5,033	16,007	9,272
Skipjack.....	73	40	6,551	3,406	188,188	68,162	194,812	71,608
Yellowfin....	229	232	2,145	2,127	275,687	119,509	278,061	121,868
All other....	67	33	87	37	742	74	896	144
Total.....	672	772	27,570	19,827	479,910	194,582	508,152	215,181
1980:								
Albacore.....	1	3/	12,575	10,297	3,335	2,453	15,911	12,750
Bigeye.....	-	-	21	35	7,029	4,040	7,050	4,075
Bluefin.....	7	7	3,675	4,451	4,434	2,702	8,116	7,160
Skipjack.....	49	37	4,902	3,364	230,061	122,584	235,012	125,985
Yellowfin....	241	303	2,268	2,847	229,108	135,264	231,617	138,414
All other....	59	13	1,294	648	979	298	2,332	959
Total.....	357	360	24,735	21,642	474,946	267,341	500,038	289,343
1981:								
Albacore.....	113	19	21,084	19,351	8,136	7,349	29,333	26,719
Bigeye.....	-	-	113	165	4,597	2,699	4,710	2,864
Bluefin.....	31	19	3,094	2,795	1,649	973	4,774	3,787
Skipjack.....	48	36	7,057	4,854	193,297	98,309	200,402	103,199
Yellowfin....	310	43	3,024	4,444	246,398	144,085	249,732	148,572
All other....	99	22	555	307	273	156	927	485
Total.....	601	139	34,927	31,916	454,350	253,571	489,878	285,626
1982:								
Albacore.....	5	1	13,252	9,155	2,072	1,442	15,329	10,598
Bigeye.....	-	-	116	173	3,377	1,873	3,493	2,046
Bluefin.....	249	471	1,650	2,225	4,598	2,418	6,497	5,114
Skipjack.....	39	29	5,299	3,476	184,062	87,539	189,400	91,044
Yellowfin....	202	280	2,196	2,780	221,475	124,251	223,873	127,311
All other....	28	9	809	837	6	1	843	847
Total.....	523	790	23,322	18,646	415,590	217,524	439,435	236,960
1983:								
Albacore.....	7	1	12,460	7,818	10,711	6,480	23,178	14,299
Bigeye.....	7	2	556	1,118	1,599	819	2,162	1,939
Bluefin.....	29	59	3,143	7,914	1,190	764	4,362	8,737
Skipjack.....	-	-	2,826	1,590	310,419	124,150	313,245	125,740
Yellowfin....	3	2	3,290	3,275	238,447	123,105	241,740	126,382
All other....	259	235	925	1,233	111	28	1,295	1,496
Total.....	305	299	23,208	22,948	562,477	255,346	585,990	278,593
1984:								
Albacore.....	3	2	21,437	13,426	8,787	5,431	30,277	18,859
Bigeye.....	1	1	885	2,387	1,539	803	2,425	3,191
Bluefin.....	27	65	3,880	9,185	104	48	4,011	9,298
Skipjack.....	300	240	2,949	2,248	319,945	121,572	323,194	124,060
Yellowfin....	272	432	2,974	4,375	217,741	106,965	220,987	111,772
All other....	138	49	1,832	3,261	105	54	2,075	3,364
Total.....	741	789	33,957	34,882	548,221	234,873	582,919	270,544
1985:								
Albacore.....	35	26	11,361	6,194	6,692	3,545	18,088	9,765
Bigeye.....	12	29	839	2,330	24	26	875	2,385
Bluefin.....	1	2	9,837	12,408	-	-	9,838	12,410
Skipjack.....	360	292	3,314	2,645	207,308	64,508	210,982	67,445
Yellowfin....	200	330	5,868	7,375	269,546	111,233	275,614	118,938
All other....	133	31	564	726	43	20	740	777
Total.....	741	710	31,783	31,678	483,613	179,332	516,137	211,720

1/ Landings reported in round (live) weight.

2/ Includes all landings in Great Lakes and other inland waters.

3/ Less than \$500.

Note.—Data include landings by U.S.-flag vessels at Puerto Rico and ports outside the 50 States; therefore, they will not agree with U.S. commercial landings.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 2.—Number and capacity of U.S. baitboats and purse seiners, selected years, 1955–85

Year	Baitboats 1/ 2/		Purse seiners 2/		Total fleet	
	Quantity	Capacity	Quantity	Capacity	Quantity	Capacity
		Short tons		Short tons		Short tons
1955.....	183	41,729	66	8,250	249	49,979
1960.....	80	15,691	111	24,971	191	40,662
1965.....	50	4,279	116	39,611	166	43,890
1970.....	45	3,852	118	55,823	163	59,675
1975.....	55	5,483	140	115,342	195	120,825
1980.....	25	2,186	117	107,734	142	109,535
1985.....	9	696	90	97,131	99	97,827

1/ Baitboats are limited to those engaged in the eastern Pacific fishery.

2/ Consists of baitboats with a minimum capacity of 50 tons and purse seiners with a minimum capacity of 101 tons.

3/ Capacity of the vessels holds in short tons.

Source: Official statistics of the Inter-American Tropical Tuna Commission; submitted to the U.S. International Trade Commission by the American Tunaboat Association.

Table 3.—U.S. tuna purse seine fleet: Fleet size, additions, idle vessels, and removals, January 1, 1978 to January 1, 1986

Year	Fleet size on January 1		Additions during year		Removals during year		Net change during year	
	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity
1978.....	124	110,665	4	4,800	6	6,356	-2	-1,556
1979.....	122	109,109	5	6,600	3	2,120	2	4,480
1980.....	124	113,589	5	6,000	12	12,240	-7	-6,240
1981.....	117	107,349	13	14,750	2	905	11	13,845
1982.....	128	121,194	11	13,250	14	10,271	-3	2,979
1983.....	125	124,173	6	7,750	7	5,759	-1	1,991
1984.....	124	126,164	0	0	17	15,179	-17	-15,179
1985.....	107	110,985	0	0	17	13,854	-17	-13,854
1986.....	90	97,131	-	-	-	-	-	-

Summary of additions by type

Year	New		Transfer from other fishery		Total additions	
	No.	Capacity	No.	Capacity	No.	Capacity
1978.....	4	4,800	0	0	4	4,800
1979.....	5	6,600	0	0	5	6,600
1980.....	5	6,000	0	0	5	6,000
1981.....	5	6,000	8	8,750	13	14,750
1982.....	6	7,200	5	6,050	11	13,250
1983.....	4	4,950	2	2,800	6	7,750
1984.....	0	0	0	0	0	0
1985.....	0	0	0	0	0	0

Summary of removals by type

Year	Lost at sea		Transfer to other fishery		Transfer to foreign flag		Total transfers	
	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity
1978.....	2	2,295	0	0	4	4,061	6	6,356
1979.....	2	1,570	0	0	1	550	3	2,120
1980.....	2	1,440	1	300	9	10,500	12	12,240
1981.....	1	355	0	0	1	550	2	905
1982.....	6	2,581	0	0	8	7,690	14	10,271
1983.....	2	678	0	0	5	5,081	7	5,759
1984.....	4	3,605	2	2,200	11	9,374	17	15,179
1985.....	2	438	6	4,831	9	8,585	17	13,854

Idle vessels as of December 31

Year	Converted		New		Total		Share (percent) of fleet	
	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity
1978.....	0	0	0	0	0	0	-	-
1979.....	0	0	0	0	0	0	-	-
1980.....	1	192	1	1,100	2	1,292	1.7	1.2
1981.....	4	1,977	7	6,610	11	8,587	8.6	7.1
1982.....	6	3,398	13	12,410	19	15,808	15.2	10.0
1983.....	11	5,523	23	23,410	34	28,933	27.4	23.0
1984.....	8	4,138	15	17,680	23	21,818	21.5	19.7
1985.....	2	1,092	19	21,330	21	22,422	23.3	23.1

Source: Data submitted by American Tunaboat Association.

Table 4.—U.S. tuna baitboats: Number and capacity, 1955–85 ^{1/}

Year	Number	Total Capacity <u>Short tons</u>	Average Capacity <u>Short tons</u>	Year	Number	Total Capacity <u>Short tons</u>	Average Capacity <u>Short tons</u>
1955..	183	41,729	228	1971...	50	3,814	76
1956..	182	41,425	228	1972...	53	4,817	91
1957..	176	40,460	230	1973...	52	4,822	93
1958..	161	38,385	238	1974...	59	5,816	99
1959..	160	34,971	219	1975...	55	5,483	100
1960..	80	15,691	196	1976...	59	5,447	92
1961..	55	9,245	168	1977...	53	4,627	87
1962..	40	4,210	105	1978...	41	3,664	89
1963..	67	4,194	63	1979...	28	2,557	91
1964..	38	3,372	89	1980...	25	2,186	87
1965..	50	4,279	86	1981...	18	1,602	89
1966..	54	4,874	90	1982...	14	1,147	82
1967..	48	4,489	94	1983...	34	2,059	61
1968..	53	4,738	89	1984...	24	1,808	75
1969..	45	4,137	92	1985...	9	696	77
1970..	45	3,852	86				

^{1/} Includes only U.S.-flag baitboats that fished any period of the year in the eastern Pacific tuna fishery.

Source: Inter-American Tropical Tuna Commission; submitted by the American Tunaboat Association.

Table 5.—Number and capacity of U.S.-flag purse seiners that fished within the eastern tropical Pacific, 1979-85

Years	Number of vessels	Total capacity	Average capacity
		<u>Short tons</u>	<u>Short tons</u>
1979.....	125	109,857	879
1980.....	117	104,237	891
1981.....	117	106,316	909
1982.....	110	102,999	936
1983.....	80	75,932	949
1984.....	49	44,408	906
1985.....	49	43,717	892

Source: Compiled from official statistics of the Annual Report to the Inter-American Tropical Tuna Commission.

Table 6.—Cannery receipts of raw tuna and domestic exports: U.S.-flag vessels domestically landed raw tuna, by species and locations of the catch, 1979-85 ^{1/}

(In thousands of pounds)							
Species and location	1979	1980	1981	1982	1983	1984 2/	1985 2/
Albacore:							
East Atlantic...	24	4	4	124	-	-	-
West Atlantic...	-	36	8	-	8	-	2
East Pacific...	13,828	15,300	27,908	10,198	18,868	26,818	12,042
West Pacific...	3,208	776	1,794	3,732	2,064	1,174	1,662
Total.....	17,060	16,196	29,714	14,054	20,940	27,992	13,706
Skipjack:							
East Atlantic...	2,768	4,916	6,654	54	42	-	-
West Atlantic...	1,002	50	216	-	6	46	62,384
East Pacific...	167,888	202,688	148,232	118,528	80,362	44,134	9,022
West Pacific...	21,506	24,516	41,142	85,092	229,826	275,356	193,236
Total.....	193,164	232,170	196,244	203,674	310,236	319,956	204,642
Yellowfin: 3/							
East Atlantic...	4,792	3,796	3,932	2,174	-	-	-
West Atlantic...	1,230	1,034	1,004	230	140	1,154	4,706
East Pacific...	285,334	233,894	220,502	193,280	131,726	119,646	197,350
West Pacific...	1,316	2,386	29,068	48,580	109,402	99,554	63,964
Total.....	292,672	241,110	254,506	244,264	241,268	220,354	266,020
All species:							
East Atlantic...	7,584	8,716	10,590	2,352	42	-	-
West Atlantic...	2,232	1,120	1,228	230	154	1,620	7,092
East Pacific...	467,050	451,962	396,642	322,006	230,956	190,598	218,414
West Pacific...	26,030	27,678	72,004	137,404	341,292	376,084	258,862
Total.....	502,896	489,476	480,464	461,992	572,444	568,302	484,368

^{1/} Includes tuna landed directly or transshipped to a foreign country; excludes tuna exported from the east coast.

^{2/} Preliminary.

^{3/} Includes bigeye, blackfin, and bluefin tuna.

Source: National Marine Fisheries Service, Industry Analysis and Information Section, Southwest Region.

Note.—These data will not match national figures as reported in "Fisheries of the United States," because the above data include direct exports.

Table 7.—U.S. tuna purse seiners: Capacity and capacity utilization, 1979–85

Jan. 1 of—	Total catch	Total fleet capacity 1/	Share of total catch	Active fleet capacity 1/	Share of total catch
	<u>Tons</u>	<u>Tons</u>	<u>Percent</u>	<u>Tons</u>	<u>Percent</u>
1979—	254,076	381,882	67	381,882	67
1980—	250,019	397,562	63	397,562	63
1981—	244,939	375,722	65	371,200	66
1982—	219,718	424,179	52	394,125	56
1983—	292,995	434,606	67	379,278	77
1984—	291,460	441,574	66	340,309	86
1985—	258,069	388,448	66	312,085	83

1/ The total fleet capacity was derived by multiplying the annual fleet capacity by 3.5; the average number of trips per year. The active fleet capacity was derived by taking the total fleet capacity minus idle vessels and then multiplying by 3.5 for the average number of trips per year.

Source: Data compiled from information provided by the American Tunaboat Association.

Table 8.—Frozen tuna: Profit-and-loss data for U.S. tuna purse seiners, average per vessel, accounting years 1979-85

Item	1979	1980	1981	1982	1983	1984	1985
Net sales of tuna.....dollars..	1,445,886	2,226,952	2,185,942	2,051,667	2,111,452	2,786,039	2,287,353
Crew cost.....do....	472,456	673,747	625,837	555,235	542,849	759,745	620,941
Fuel cost.....do....	257,557	431,241	503,419	520,510	465,269	547,196	532,686
Galley cost.....do....	31,215	43,434	50,326	52,196	49,462	61,980	59,118
License fees.....do....	8,557	11,253	10,256	12,225	17,312	23,745	23,234
Transshipment fees.....do....	671	5,663	7,140	67,020	79,774	84,098	76,255
Repairs.....do....	229,747	291,193	276,291	314,324	260,409	246,392	261,275
Gear and supplies.....do....	27,215	35,060	44,709	42,892	50,236	67,353	64,804
Insurance.....do....	85,367	100,880	129,046	141,980	143,548	198,529	267,667
Helicopter.....do....	25,456	40,566	56,128	72,510	79,258	75,490	93,451
Travel.....do....	19,582	25,084	30,744	37,471	39,140	29,608	27,647
Administration.....do....	30,696	42,566	41,965	46,206	43,204	55,784	61,941
Interest.....do....	177,202	249,843	355,640	422,549	376,140	285,294	280,000
Other costs.....do....	126,418	119,554	137,035	167,147	118,828	169,667	229,412
Total expenses excluding depreciation.....do....	1,492,139	2,070,084	2,268,535	2,452,265	2,265,430	2,604,081	2,598,431
Operating income or (loss) before depreciation.....do....	(46,253)	156,867	(82,593)	(400,598)	(153,978)	181,158	(311,078)
Depreciation.....do....	156,139	199,626	257,140	290,520	308,763	291,765	276,647
Net income or (loss) before taxes.....do....	(202,392)	(42,759)	(339,732)	(691,118)	(462,742)	(110,607)	(587,725)
As a percentage of net sales:							
Operating income (loss) before depreciation.....percent..	(3.2)	7.0	(3.8)	(19.5)	(7.3)	6.5	(13.6)
Net income (loss).....do....	(14.0)	(1.9)	(15.5)	(33.7)	(21.9)	(4.0)	(25.7)
Number of reporting vessels.....	79	83	86	102	93	51	51
Number of reporting organizations.....	56	56	56	56	56	42	42

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 9.—Frozen tuna: Individual cost items as a share of total expenses before depreciation for U.S. tuna purse seiners, accounting years 1979-85

(In percent)							
Item	1979	1980	1981	1982	1983	1984	1985
Crew cost.....percent..	31.7	32.6	27.6	22.6	24.0	28.6	23.9
Fuel cost.....do....	17.3	20.8	22.2	21.2	20.5	20.6	20.5
Galley cost.....do....	2.1	2.1	2.2	2.1	2.2	2.3	2.3
License fees.....do....	.6	.5	.5	.5	.8	.9	.9
Transshipment fees.....do....	1/	.3	.3	2.7	3.5	3.2	2.9
Repairs.....do....	15.4	14.1	12.2	12.8	11.5	9.3	10.1
Gear and supplies.....do....	1.8	1.7	2.0	1.8	2.2	2.5	2.5
Insurance.....do....	5.7	4.9	5.7	5.8	6.3	7.5	10.3
Helicopter.....do....	1.7	2.0	2.5	3.0	3.5	2.8	3.6
Travel.....do....	1.3	1.2	1.4	1.5	1.7	1.1	1.1
Administration.....do....	2.1	2.1	1.9	1.9	1.9	2.1	2.4
Interest.....do....	11.9	12.1	15.7	17.2	16.6	10.7	10.8
Other costs.....do....	8.4	5.6	5.8	6.9	5.3	8.4	8.7
Total expenses excluding depreciation.....do....	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Depreciation.....do....	10.5	9.6	11.3	11.9	13.6	11.0	10.7
Number of reporting vessels.....	79	83	86	102	93	51	51
Number of reporting organizations...	56	56	56	56	56	42	42

1/ Less than 0.05 percent.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 10.— Tuna vessels of U.S. processors: 1/ Selected profit-and-loss data, accounting years 1984-85.

Item	1984	1985
Net sales of tuna.....1,000 dollars..	85,431	75,226
Total expenses excluding depreciation.....do....	83,492	85,065
Operating income (loss) before depreciation.....do....	1,939	(9,839)
Depreciation.....do....	9,247	8,832
Corporate officers or partners' salaries.....do....	354	410
Operating income or (loss).....do....	(7,662)	(19,081)
Other income or (expense).....do....	3,190	434
Income or (loss) before taxes.....do....	(4,472)	(18,647)
Operating income (loss) before depreciation as a percentage of net sales.....percent..	2.3	(13.1)
Operating income (loss) as a percentage of net sales.....do....	(9.0)	(25.4)
Income (loss) before taxes as a percentage of net sales.....do....	(5.2)	(24.8)
Number of vessels.....	29	29
Number of vessels showing operating losses.....	16	26

1/ Data include U.S. tuna processors whose ownership of tuna vessels exceeds 33 percent.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 11.—Canned tuna: U.S. production, capacity, and capacity utilization, 1979–85, January–March 1985, and January–March 1986

Period	Production		Total	Capacity	Capacity utilization —Percent—
	In water	In oil			
	—1,000 pounds—				
1979.....	246,258	371,197	617,455	888,507	69.5
1980.....	306,450	333,450	639,900	976,394	65.5
1981.....	357,493	291,526	649,019	990,296	65.5
1982.....	351,473	217,178	568,651	983,960	57.8
1983.....	380,422	245,147	625,569	863,716	72.4
1984.....	379,171	249,199	628,370	767,364	81.9
1985.....	355,701	213,310	569,011	675,948	84.2
January–March—					
1985.....	75,762	47,241	123,003	<u>1/</u>	<u>1/</u>
1986.....	99,778	57,143	156,922	<u>1/</u>	<u>1/</u>

1/ Not available.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 12.—Canned tuna: U.S. supply packed from domestic commercial landings, imported fresh and frozen tuna, and canned imports, 1979-85

Year	U.S. pack from—		Total	Imported canned	Total supply
	Domestic commercial landings 1/	Imported fresh and frozen tuna 2/			
(Quantity 1,000 pounds, product weight)					
1979...	218,493	401,740	620,233	53,703	673,936
1980...	214,559	387,497	602,056	63,553	665,609
1981...	217,316	409,653	626,969	70,851	697,820
1982...	206,037	332,466	538,503	87,579	626,082
1983...	251,281	339,261	590,542	122,329	712,871
1984...	263,626	350,655	614,281	162,313	776,594
1985...	210,464	334,529	544,993	213,948	758,941
Percent of total					
1979...	35.2	64.7	100	8.0	3/ 100
1980...	35.6	64.3	100	9.6	3/ 100
1981...	34.6	65.3	100	10.2	3/ 100
1982...	38.2	61.7	100	14.0	3/ 100
1983...	42.5	57.4	100	17.2	3/ 100
1984...	42.9	57.0	100	20.9	3/ 100
1985...	38.6	61.4	100	28.2	3/ 100

1/ Includes pack from landings by U.S.-flag vessels in Puerto Rico and American Samoa.

2/ Includes tuna canned in American Samoa from foreign-caught fish.

3/ Total U.S. supply equals canned imports plus total U.S. pack.

Source: Compiled from official statistics of the U.S. Department of Commerce, National Marine Fisheries Service.

Note.—Because of rounding, figures may not add to the totals shown.

Table 13.—Canned tuna in water or oil: U.S. processors' domestic shipments, ^{1/} by types, 1979-85, January-March 1985, and January-March 1986

Product	1979	1980	1981	1982	1983	1984	1985	January-March—	
								1985	1986
Quantity (1,000 pounds net weight)									
Tuna in water:									
Whitemeat.....	78,034	86,809	84,153	81,867	102,549	104,733	102,661	22,630	28,776
Lightmeat.....	161,356	200,835	240,939	265,265	284,510	294,681	324,998	86,602	93,367
Total, tuna in water....	240,190	287,644	325,092	347,132	387,059	399,414	427,659	109,246	122,142
Tuna in oil:									
Whitemeat.....	51,288	43,613	35,443	30,987	35,604	28,378	28,639	6,261	8,089
Lightmeat.....	337,039	286,511	246,807	220,282	209,360	199,778	197,202	57,198	54,672
Total, tuna in oil.....	388,327	330,125	282,251	251,269	244,964	228,155	225,841	63,459	62,762
Grand total.....	628,517	617,768	607,342	598,401	632,022	627,570	653,499	172,706	184,904
Value (1,000 dollars)									
Tuna in water:									
Whitemeat.....	150,091	184,928	197,816	198,470	198,810	240,604	247,965	54,786	69,840
Lightmeat.....	238,246	358,504	447,454	457,068	445,553	394,304	425,764	143,056	153,870
Total, tuna in water....	388,337	543,432	645,270	655,538	644,363	634,908	673,729	197,842	223,710
Tuna in oil:									
Whitemeat.....	87,203	87,051	79,000	71,370	66,187	66,022	63,950	14,361	18,611
Lightmeat.....	506,487	502,554	465,105	387,099	334,090	238,021	223,972	95,697	92,194
Total, tuna in oil.....	593,690	589,605	544,105	458,469	400,277	304,043	287,916	110,058	110,805
Grand total.....	982,027	1,133,037	1,189,375	1,114,007	1,044,640	938,951	961,645	307,900	334,515
Unit value (per pound)									
Tuna in water:									
Whitemeat.....	\$1.90	\$2.13	\$2.35	\$2.42	\$1.94	\$2.30	\$2.42	\$2.42	\$2.42
Lightmeat.....	1.48	1.79	1.86	1.72	1.57	1.34	1.31	1.65	1.65
Average, tuna in water..	1.62	1.89	1.98	1.89	1.66	1.59	1.58	1.81	1.83
Tuna in oil:									
Whitemeat.....	1.70	2.00	2.23	2.30	1.86	2.33	2.23	2.29	2.30
Lightmeat.....	1.50	1.75	1.88	1.76	1.60	1.19	1.14	1.67	1.69
Average, tuna in oil....	1.53	1.79	1.93	1.82	1.63	1.33	1.27	1.73	1.77
Average, all tuna.....	1.56	1.83	1.96	1.86	1.65	1.50	1.47	1.78	1.81

^{1/} Includes canned tuna imported by some processors.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 14.—Distribution of shipments of U.S.-processed canned tuna: U.S. shipments of U.S.-processed canned tuna in retail-size containers for selected categories and total shipments of canned tuna in institutional-sized containers, 1979-85, January-March 1985, and January-March 1986

Period	Retail Processors' own brand 1/	Private label	Institutional	Total
	Quantity (1,000 pounds)			
1979.....	444,519	144,961	39,037	628,517
1980.....	437,895	136,561	43,313	617,769
1981.....	441,087	125,001	41,254	607,342
1982.....	427,866	134,098	36,437	598,401
1983.....	461,316	135,635	35,071	632,022
1984.....	488,796	107,031	31,744	627,570
1985.....	514,509	110,153	28,836	653,499
January-March—				
1985.....	140,780	24,384	7,541	172,706
1986.....	152,401	25,616	6,886	184,904
	Percent of total shipments			
1979.....	70.7	23.1	6.2	100.0
1980.....	70.9	22.1	7.0	100.0
1981.....	72.6	20.6	6.8	100.0
1982.....	71.5	22.4	6.1	100.0
1983.....	73.0	21.5	5.5	100.0
1984.....	77.9	17.1	5.1	100.0
1985.....	78.7	16.9	4.4	100.0
January-March—				
1985.....	81.5	14.1	4.4	100.0
1986.....	82.4	13.9	3.7	100.0

1/ Also referred to as "advertised retail brands."

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Note.—Because of rounding, figures may not add to the totals shown.

Table 15.—Canned tuna: U.S. processors' inventories, by types, as of Dec. 31 of 1979-85

Item	1979	1980	1981	1982	1983	1984	1985
Quantity (1,000 pounds, net weight)							
Tuna in water:							
Whitemeat.....	33,589	33,426	36,702	47,427	30,032	22,946	33,036
Lightmeat.....	45,824	65,197	93,338	71,926	75,281	94,081	81,850
Total, tuna in water....	79,413	98,623	130,040	119,353	105,313	117,026	114,886
Tuna in oil:							
Whitemeat.....	24,208	17,885	21,662	25,188	18,474	13,657	9,763
Lightmeat.....	87,521	92,856	94,317	54,934	56,693	65,080	59,999
Total, tuna in oil.....	111,729	110,741	115,979	80,122	75,167	78,737	69,762
Grand total.....	191,142	209,364	246,019	199,475	180,480	195,764	184,648
Ratio of inventories to shipments (percent)							
Tuna in water:							
Whitemeat.....	42.6	38.5	43.6	57.9	29.3	21.9	32.2
Lightmeat.....	28.4	32.5	38.7	27.1	26.5	31.9	25.2
Total, tuna in water....	33.1	34.3	40.0	34.4	27.2	29.3	26.9
Tuna in oil:							
Whitemeat.....	47.2	41.0	61.1	81.3	51.9	48.1	34.1
Lightmeat.....	26.0	32.4	38.2	24.9	27.1	32.6	30.4
Total, tuna in oil.....	28.8	33.5	41.1	31.9	30.7	34.5	30.9
Grand total.....	30.4	33.9	40.5	33.3	28.6	31.2	28.3

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Note.—Because of rounding, figures may not add to the totals shown.

Table 16.—Canned tuna: U.S. processors, location by firms and processing plants, 1985

Firm	U.S. processing plants
Bumble Bee Seafoods, Inc. San Diego, CA.	Mayaguez, PR.
C.H.B. Foods Inc.—Pan Pacific Fisheries Terminal Island, CA.	Terminal Island, CA.
Mitsubishi Foods Inc. (Caribe Tuna) Delmar, CA (a subsidiary of Mitsubishi Corp., Tokyo, Japan).	Ponce, PR.
Neptune Packing Corp. White Plains, NY (a subsidiary of Mitsui (U.S.A.), New York, NY).	Mayaguez, PR.
Star-Kist Foods, Inc. CA (a subsidiary of H.J. Heinz, Co., Pittsburgh, PA).	Mayaguez, PR; Pago Pago, American Samoa.
Van Camp Seafood Division Ralston Purina Co., St. Louis, MO.	Pago Pago, American Samoa; Ponce, PR.

Source: Compiled from information submitted in response to questionnaires of the U.S. International Trade Commission.

Table 17.—U.S. tuna canneries, by plant locations, 1979–85

Plant locations	1979	1980	1981	1982	1983	1984	1985
Continental							
United States.....	14	12	12	12	3	3	1
Hawaii.....	1	1	1	1	1	1	0
Puerto Rico.....	5	5	5	5	5	5	5
American Samoa.....	2	2	2	2	2	2	2
Total.....	22	20	20	20	11	11	8

Source: National Marine Fisheries Service.

Table 18.—Average number of workers employed in the reporting establishments producing canned tuna, hours worked by production and related workers for all products and for canned tuna, 1/ and wages and fringe benefits paid to them, 1979-85

Item	1979	1980	1981	1982	1983	1984	1985
Average number employed in the reporting establishments:							
All persons—number—	15,831	16,498	15,385	15,050	14,749	14,637	14,197
Production and related workers producing—							
All products—number—	15,299	15,902	14,863	14,556	14,239	14,029	13,393
Canned tuna—do—	14,668	14,906	14,581	13,436	13,397	13,499	12,887
Hours worked by production and related workers producing—							
All products—1,000 hours—	27,588	24,986	25,152	23,000	25,320	22,691	21,738
Canned tuna—do—	25,661	23,648	23,888	21,733	23,981	21,808	21,121
Wages paid to production and related workers producing—							
All products—1,000 dollars—	119,774	130,154	137,451	131,970	143,100	123,023	106,362
Canned tuna—do—	110,741	120,458	127,401	120,322	131,806	116,177	101,745
Value of fringe benefits provided to production and related workers Producing—							
All products—1,000 dollars—	24,220	25,499	25,936	26,470	29,147	17,772	13,630
Canned tuna—do—	-	-	-	-	-	17,002	13,037

1/ Includes operations in the continental United States, Puerto Rico, and American Samoa.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 19.—Canned tuna: U.S. industry concentration measures, 1/ by product types, 1985

Item	3-firm concentration ratio for—		
	U.S. Processors	All suppliers to the U.S. market	Herfindahl index
Domestic production:			
Lightmeat.....	81.8	<u>2/</u>	<u>2/</u>
Whitemeat.....	75.6	<u>2/</u>	<u>2/</u>
Total.....	80.3	<u>2/</u>	<u>2/</u>
Domestic shipments:			
Lightmeat <u>3/</u>	80.6	65.2	1,944
Whitemeat <u>3/</u>	74.0	66.5	1,908
Water-packed.....	78.3	50.5	1,554
Oil-packed.....	81.1	82.2	2,631
Total.....	79.2	65.2	1,848

1/ The 3-firm concentration ratio is the combined percentage share of the total accounted for by the 3 largest firms. The Herfindahl index is equal to the sum of the squared percentage shares of apparent U.S. consumption held by all domestic and foreign suppliers; foreign firms are assumed to each hold 1 percent of apparent U.S. consumption.

2/ Not applicable.

3/ Includes shipments by all U.S. processors as well as 7 importers accounting for over 75 percent of all U.S. imports of canned tuna in 1985.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 20.—Financial experience of U.S. tuna processors on the overall operations of their establishments within which canned tuna is produced, fiscal years 1979-85 and interim periods ended Mar. 31, 1985 and Mar. 31, 1986

Item	1979	1980	1981	1982	1983	1984	1985	Interim period ended Mar. 31 1/	
								1985	1986
Net sales.....1,000 dollars..	1,027,697	1,115,691	1,307,480	1,202,093	1,150,003	1,189,011	1,163,438	902,204	924,128
Cost of goods sold.....do....	852,533	917,861	1,112,889	1,071,367	990,434	991,730	962,493	732,912	730,496
Gross profit or (loss).....do....	175,164	197,830	194,591	130,726	167,569	197,281	200,945	169,292	193,632
Operating income or (loss).....do....	73,940	80,703	63,796	2,319	32,293	74,331	81,769	72,162	92,747
Net income or (loss), before income taxes.....do....	54,706	61,852	28,226	(174,316)	(6,819)	1,521	62,901	69,597	80,302
Depreciation and amortization expense included above.....do....	16,561	16,583	18,608	17,992	18,107	17,456	15,588	11,313	10,007
As a share of net sales:									
Cost of goods sold.....percent..	83.0	82.3	85.1	89.1	85.5	83.4	82.7	81.2	79.0
Gross profit.....do....	17.0	17.7	14.9	10.9	14.5	16.6	17.3	18.8	21.0
Net income or (loss) before income taxes.....do..	5.3	5.5	2.2	(14.5)	(.6)	.1	5.4	7.7	8.7
Number of firms reporting operating losses.....	2	2	3	5	3	1	2	2	1
Number of firms reporting.....	5	5	5	6	6	6	6	6	6

1/ 2 processors reported 9 months' interim data (June 30-Mar. 31); 1 processor reported 6 months interim data (Sept. 30-Mar. 31); 2 processors reported 3 months interim data (Jan. 31-Mar. 30); and 1 processor reported 12 months interim data (May 1-Apr. 30—assumed to approximate the 11-month period ending Mar. 31).

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 21.—Financial experience of U.S. tuna processors on their operations producing canned tuna for human consumption only, fiscal years 1979-85 and interim periods ended March 31, 1985 and March 31, 1986

Item	1979	1980	1981	1982	1983	1984	1985	Interim period ended Mar. 31 1/	
								1985	1986
Net sales.....1,000 dollars..	960,687	1,037,591	1,220,005	1,111,621	1,073,153	1,056,654	1,042,946	802,884	828,730
Cost of goods sold.....do....	832,909	864,265	1,040,683	996,189	942,210	885,028	866,789	655,944	657,215
Gross profit or (loss).....do....	127,778	173,326	179,322	115,432	130,943	171,626	176,157	146,940	171,515
General, selling, and administrative expenses.....do....	87,333	101,477	115,217	106,555	117,397	105,542	100,905	81,277	85,398
Operating income or (loss).....do....	40,445	71,849	64,105	8,877	13,546	66,084	75,252	65,663	86,117
Interest income or (expense).....do....	(15,160)	(19,266)	(35,367)	(39,732)	(24,598)	4,932	5,447	2,471	6,749
Other income or (expense), net.....do....	(890)	1,410	(10,336)	(30,813)	(39,341)	(65,735)	(11,873)	421	(4,463)
Net income or (loss), before income taxes.....do....	24,395	53,993	18,402	(61,668)	(50,393)	(4,583)	57,932	63,613	74,905
Depreciation and amortization expense included above.....do....	11,799	12,485	14,421	13,871	14,591	14,957	13,773	9,132	8,366
As a share of net sales:									
Cost of goods sold.....percent..	86.7	83.3	85.3	89.6	87.8	83.8	83.1	81.7	79.3
Gross profit.....do....	13.3	16.7	14.7	10.4	12.2	16.2	16.9	18.3	20.7
General, selling, and administrative expenses.....do....	9.1	9.8	9.4	9.6	10.9	10.0	9.7	10.1	10.3
Operating income.....do....	4.2	6.9	5.3	.8	1.3	6.3	7.2	8.2	10.4
Net income or (loss) before income taxes.....do....	2.5	5.2	1.5	(5.5)	(4.7)	(.4)	5.6	7.9	9.0
Number of firms reporting operating losses.....	2	0	2	4	2	1	2	2	1
Number of firms reporting.....	5	5	5	6	6	6	6	6	6

1/ 2 processors reported 9 months' interim data (June 30-Mar. 31); 1 processor reported 6 months interim data (Sept. 30-Mar. 31); 2 processors reported 3 months interim data (Jan. 31-Mar. 30); and 1 processor reported 12 months interim data (May 1-Apr. 30—assumed to approximate the 11-month period ending Mar. 31).

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 22.—Income-and-loss experience of U.S. processors ^{1/} on their operations producing tuna-based pet food ^{2/} accounting years 1984-85 and interim periods ended Mar. 31, 1985, and Mar. 31, 1986

Item	1984	1985	Interim period ended Mar. 31—3/ 1985 1986	
			1985	1986
Net sales.....1,000 dollars..	119,512	112,053	91,939	92,837
Cost of goods sold.....do....	92,875	86,370	68,789	69,354
Gross profit or (loss)..do....	26,637	25,683	23,150	23,483
General, selling, and admin- istrative expenses 1,000 dollars..	17,256	18,196	15,700	15,412
Operating income or (loss) do....	9,381	7,487	7,450	8,071
Interest expense.....do....	611	940	602	626
Other income or (expense), net.....do....	(1,522)	(593)	97	(592)
Net income before income taxes.....do....	7,248	5,954	6,945	6,853
Depreciation and amortization expense included above do....	742	532	424	358
As a share of net sales:				
Cost of goods sold percent..	77.7	77.1	74.8	74.7
Gross profit.....do....	22.3	22.9	25.2	25.3
General, selling, and administrative expenses percent..	14.4	16.2	17.1	16.6
Operating income.....do....	7.8	6.7	8.1	8.7
Net income before income taxes.....do....	6.1	5.3	7.6	7.4
Number of firms reporting operating losses.....	0	1	1	3
Number of firms reporting.....	5	5	5	5

^{1/} One firm was not able to provide income-and-loss data relating to its pet food operations.

^{2/} Elements of net sales or cost of goods sold which actually relate to tuna-based pet food production only (that is, excludes canned tuna for human consumption, and fish meal)

^{3/} 2 processors reported 9 months interim data (June 30-Mar. 31); 1 processor reported 6 months' interim data (Sept. 30-Mar. 31); 1 processor reported 3 months' interim data (Jan.-31-Mar. 31); and 1 processor reported 12 months' interim data (May 1-Apr. 30—assumed to approximate the 11-month period ending Mar. 31).

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 23.—Canned tuna: U.S. processors' cost of goods sold on operations producing canned tuna for human consumption, by cost components, fiscal years 1979-85 and interim periods ended Mar. 31, 1985 and Mar. 31, 1986 ^{1/}

								Interim period ended Mar. 31—	
Item	1979	1980	1981	1982	1983	1984	1985	1985	1986
Cost of goods sold:									
Frozen tuna.....million dollars..	460.0	481.3	603.8	544.6	491.2	421.5	366.8	284.1	290.0
Other raw materials.....do....	65.0	57.8	56.4	63.9	69.2	89.6	84.2	54.9	73.8
Dirert labor.....do....	72.8	66.2	79.5	73.0	81.0	69.3	51.5	45.5	40.1
Other factory costs.....do....	115.7	92.5	112.1	124.3	136.6	113.9	156.1	144.0	105.3
Total 2/.....do....	713.6	697.8	851.8	805.9	778.1	694.2	658.6	528.4	509.2
Cost of goods sold:									
Frozen tuna.....percent..	64.5	69.0	70.9	67.6	63.1	60.7	55.7	53.8	57.0
Other raw materials.....do....	9.1	8.3	6.6	7.9	8.9	12.9	12.8	10.4	14.5
Direct labor.....do....	10.2	9.5	9.3	9.1	10.4	10.0	7.8	8.6	7.9
Other factory costs.....do....	16.2	13.3	13.2	15.4	17.6	16.4	23.7	27.3	20.7
Total 2/.....do....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

^{1/} Data include full-period reports from 4 processors, accounting for 77 percent of U.S. industry sales in 1985.

^{2/} Because of rounding, figures may not add to the totals shown.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 24.—Tuna: Annual yellowfin quota and actual yellowfin catch inside and outside the the Commission's Yellowfin Regulatory Area, 1966-85

(In short tons, except dates)						
Year	Quota	Maximum incremental increase	Date closed	Actual catch		
				Inside CYRA	Outside CYRA	Total
1966..	79	(-)	9/15	91.5	0	91.5
1967..	85	(-)	6/24	90.0	0	90.0
1968..	93	(-)	6/18	114.5	1.2	115.7
1969..	120	(-)	4/16	126.9	19.2	146.1
1970..	120	(-)	3/23	142.6	30.7	173.3
1971..	140	(20)	4/9	113.9	22.8	136.6
1972..	120	(20)	3/5	152.5	44.8	197.3
1973..	130	(30)	3/8	177.8	49.5	227.3
1974..	175	(20)	3/18	191.6	41.0	232.6
1975..	175	(20)	3/13	176.4	47.5	223.9
1976..	175	(20)	3/27	210.7	50.7	261.4
1977..	175	(35)	7/7	203.0	17.9	220.8
1978..	175	(35)	5/6	183.4	16.0	199.4
1979..	175	(35)	7/21	195.0	15.1	210.1
1980..	165 <u>1/</u>	(45)	<u>2/</u>	147.4	29.4	176.8
1981..	160 <u>1/</u>	(-)	<u>2/</u>	175.4	26.3	201.7
1982..	160 <u>1/</u>	(-)	<u>2/</u>	119.1	19.8	138.9
1983..	170 <u>1/</u>	(-)	<u>2/</u>	90.8	13.5	104.2
1984..	162 <u>1/</u>	(-)	<u>2/</u>	142.4	18.2	160.6
1985..	174 <u>1/</u>	(-)	<u>2/</u>	<u>3/</u>	<u>3/</u>	<u>3/</u>

1/ Recommended quota. Quota not implemented.

2/ Not applicable, since no quota was actually implemented.

3/ Not available.

Source: Annual Report of the Inter-American Tropical Tuna Commission, various issues.

Table 25.—Canned tuna: Shipments, 1/ by market segments, 1979-85

	Retail		Total, retail	Institutional	Total
Year	Processors' own brand	Private label			
Quantity (1,000 pounds)					
1979.....	452,696	147,253	599,949	69,009	668,958
1980.....	451,131	138,807	589,938	82,169	672,107
1981.....	458,016	129,127	587,143	75,873	663,016
1982.....	444,825	144,026	588,851	76,027	664,878
1983.....	485,209	152,840	638,049	87,098	725,147
1984.....	501,028	132,592	633,620	75,770	709,389
1985.....	547,791	137,932	685,723	75,494	761,218
Percent of total					
1979.....	68	22	90	10	100
1980.....	67	21	88	12	100
1981.....	69	19	89	11	100
1982.....	67	22	89	11	100
1983.....	67	21	88	12	100
1984.....	71	19	89	11	100
1985.....	72	18	90	10	100

1/ Includes both domestically produced and imported canned tuna.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Note.—Because of rounding, figures may not add to the totals shown.

Table 26.—Canned tuna: U.S. shipments of whitemeat and lightmeat tuna, and share of shipments, by source, 1984 and 1985

Year	Whitemeat			Lightmeat			Total		
	Domestic	Import	Total	Domestic	Import	Total	Whitemeat	Lightmeat	Total
Quantity (1,000 pounds)									
1984.....	133,111	11,495	144,606	494,459	98,218	592,677	144,606	592,677	737,283
1985.....	131,300	14,935	146,235	522,200	123,078	645,278	146,235	645,278	791,513
Percent of total									
1984.....	92	8	100	83	17	100	20	80	100
1985.....	90	10	100	81	17	100	18	82	100

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 27.—Canned tuna: Production, beginning inventories, imports for consumption, ending inventories, and apparent consumption, by types of pack, 1979-85 ^{1/}

Item	1979	1980	1981	1982	1983	1984	1985
Quantity (1,000 pounds)							
Production:							
Tuna in water.....	246,258	306,450	357,493	351,473	380,422	379,171	355,701
Tuna in oil.....	371,197	333,450	291,526	217,178	245,147	249,198	213,310
Total.....	617,455	639,900	649,019	568,651	625,569	628,370	569,011
Beginning inventories:							
Tuna in water.....	94,000	79,413	98,623	130,040	119,353	105,313	117,027
Tuna in oil.....	130,000	111,729	110,741	115,979	80,122	75,167	78,737
Total.....	224,000	191,142	209,364	246,019	199,475	180,480	195,764
Imports:							
Tuna in water.....	53,077	63,107	70,503	87,365	122,329	162,036	213,646
Tuna in oil.....	627	446	268	213	197	277	303
Total.....	53,704	63,553	70,851	87,578	122,329	162,313	213,949
Ending inventories:							
Tuna in water.....	79,413	98,623	130,040	119,353	105,313	117,027	114,886
Tuna in oil.....	111,729	110,741	115,979	80,122	75,167	78,737	69,762
Total.....	191,142	209,364	246,019	199,475	180,480	195,764	184,648
Apparent consumption:							
Tuna in water.....	313,922	350,347	396,659	449,525	516,594	529,494	571,488
Tuna in oil.....	390,095	334,884	286,556	253,248	250,299	245,905	222,589
Total.....	704,017	685,231	683,215	702,773	766,893	775,399	794,076
Percent of total							
Production:							
Tuna in water.....	40	48	55	62	61	60	63
Tuna in oil.....	60	52	45	38	39	40	37
Total.....	100	100	100	100	100	100	100
Beginning inventories:							
Tuna in water.....	42	42	47	53	60	58	60
Tuna in oil.....	58	58	53	47	40	42	40
Total.....	100	100	100	100	100	100	100
Imports:							
Tuna in water.....	99	99	100	100	100	100	100
Tuna in oil.....	1	1	2/	2/	2/	2/	2/
Total.....	100	100	100	100	100	100	100
Ending inventories:							
Tuna in water.....	42	47	53	60	58	60	62
Tuna in oil.....	58	53	47	40	42	40	38
Total.....	100	100	100	100	100	100	100
Apparent consumption:							
Tuna in water.....	45	51	58	64	67	68	72
Tuna in oil.....	55	49	42	36	33	32	28
Total.....	100	100	100	100	100	100	100

^{1/} Exports are negligible.^{2/} Less than 0.05 percent.

Source: Production, beginning inventories, and ending inventories compiled from data submitted in response to questionnaires of the U.S. International Trade Commission; imports compiled from official statistics of the U.S. Department of Commerce.

Table 28.—Canned tuna: Market shares of shipments, by market segments and sources, 1979-85

Year	Retail		Private		Total,		Institutional Total			
	Processors' own brand		label		retail					
	Domes- tic	Im- port	Domes- tic	Im- port	Domes- tic	Im- port	Domes- tic	Im- port	Domes- tic	Im- port
1979...	98	2	98	2	98	2	57	43	94	6
1980...	97	3	98	2	97	3	53	47	92	8
1981...	96	4	97	2	96	4	54	46	92	8
1982...	96	4	93	7	95	5	48	52	90	10
1983...	95	5	89	11	94	6	40	60	87	13
1984...	98	2	81	19	94	6	42	58	88	12
1985...	94	6	80	20	91	9	38	62	86	14

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Note.—Because of rounding, figures may not add to the totals shown.

Table 29.—Frozen tuna: U.S. landings, imports, exports, and apparent consumption, 1979–85

Year	Land- ings 1/	Imports 2/	Exports	Apparent consump- tion	Ratio (per- cent) of imports to consumption	Ratio (per- cent) of exports to production
Quantity (1,000 pounds)						
1979...	502,896	698,658	11,812	1,189,742	59	2
1980...	489,476	733,830	4,514	1,218,792	60	1
1981...	480,464	717,788	2,758	1,195,494	60	1
1982...	461,992	547,654	8,626	1,001,020	55	2
1983...	572,444	492,990	1,166	1,064,268	46	3/
1984...	574,114	538,894	64,952	1,048,056	51	11
1985...	497,212	510,290	70,974	936,528	54	14
Quantity (short tons)						
1979...	251,448	349,329	5,906	594,871	4/	4/
1980...	244,738	366,915	2,257	609,396	4/	4/
1981...	240,232	358,894	1,379	597,747	4/	4/
1982...	230,996	273,826	4,313	500,510	4/	4/
1983...	286,222	246,495	583	532,134	4/	4/
1984...	287,057	269,447	32,476	524,028	4/	4/
1985...	248,606	255,145	35,487	468,264	4/	4/

1/ Includes landings in Puerto Rico, American Samoa, and other domestic and foreign ports by U.S.-flag vessels.

2/ Includes direct unloadings in American Samoa by foreign-flag vessels.

3/ Less than 0.05 percent.

4/ Not applicable.

Source: Compiled from official statistics of the National Marine Fisheries Service.

Note.—Data represent actual receipts of frozen tuna by U.S. processors at their cannery locations, and, as such, import data will differ from that of the Bureau of Census.

Table 30.—Frozen tropical 1/ tuna: U.S. landings, imports, exports, and apparent consumption, 1979–85

Year	Landings <u>2</u> /	Imports <u>3</u> /	Exports	Apparent consumption	Ratio (per-cent) of imports to consumption	Ratio (per-cent) of exports to landings
Quantity (1,000 pounds)						
1979...	485,836	524,780	11,812	998,804	53	2
1980...	471,660	566,208	4,514	1,033,354	55	1
1981...	450,750	543,194	2,758	991,186	55	1
1982...	447,938	358,456	8,502	797,892	45	2
1983...	551,504	347,280	1,166	897,618	39	<u>4</u> /
1984...	546,122	353,206	64,736	834,592	42	12
1985...	483,506	319,986	69,594	733,898	44	14
Quantity (short tons)						
1979...	242,918	262,390	5,906	499,402	<u>5</u> /	<u>5</u> /
1980...	235,830	283,104	2,257	516,677	<u>5</u> /	<u>5</u> /
1981...	225,375	271,597	1,379	495,593	<u>5</u> /	<u>5</u> /
1982...	223,969	179,228	4,251	398,946	<u>5</u> /	<u>5</u> /
1983...	275,752	173,640	583	448,809	<u>5</u> /	<u>5</u> /
1984...	273,061	176,603	32,368	417,296	<u>5</u> /	<u>5</u> /
1985...	241,753	159,993	34,797	366,949	<u>5</u> /	<u>5</u> /

1/ Includes mainly yellowfin and skipjack tuna.

2/ Includes landings in Puerto Rico, American Samoa, and other domestic and foreign ports by U.S.-flag vessels.

3/ Includes direct unloadings by foreign-flag vessels at U.S. processing facilities in American Samoa.

4/ Less than 0.05 percent.

5/ Not applicable.

Source: Compiled from official statistics of the U.S. Department of Commerce, National Marine Fisheries Service.

Note.—The data in this table represent actual receipts of raw tuna by U.S. tuna processors and, as such, import data presented here may differ from import data released by the Bureau of the Census.

Table 31.—Frozen albacore tuna: U.S. landings, imports, exports, and apparent consumption, 1979–85

Year	Landings 1/	Imports 2/	Exports	Apparent consumption	Ratio (per-cent) of imports to consumption	Ratio (per-cent) of exports to landings
Quantity (1,000 pounds)						
1979...	17,060	173,878	0	190,938	91	0
1980...	17,816	167,622	0	185,438	90	0
1981...	29,714	174,594	0	204,308	85	0
1982...	14,054	189,196	124	203,126	93	1
1983...	20,940	145,710	0	166,650	87	0
1984...	27,992	185,688	216	213,464	87	1
1985...	13,706	190,304	1,380	202,630	94	10
Quantity (short tons)						
1979...	8,530	86,939	0	95,469	3/	3/
1980...	8,908	83,811	0	92,719	3/	3/
1981...	14,857	87,297	0	102,154	3/	3/
1982...	7,027	94,598	62	101,563	3/	3/
1983...	10,470	72,855	0	83,325	3/	3/
1984...	13,996	92,844	108	106,732	3/	3/
1985...	6,853	95,152	690	101,315	3/	3/

1/ Includes landings in Puerto Rico, American Samoa, and other domestic and foreign ports by U.S. flag vessels.

2/ Includes direct unloadings by foreign flag vessels at U.S. processing facilities in American Samoa.

3/ Not applicable.

Source: Compiled from official statistics of the U.S. Department of Commerce, National Marine Fisheries Service.

Note.—The data in this table represent actual receipts of raw tuna by U.S. tuna processors and, as such, import data presented here may differ from import data released by the Bureau of the Census.

Table 32.—Canned tuna: U.S. production, beginning inventories, imports for consumption, exports of domestic merchandise, ending inventories, and apparent consumption, 1979-85

(Quantity in thousands of pounds; value in thousands of dollars; unit value per pound)								
Year	Production 1/	Beginning inventories	Imports	Exports	Ending inventories	Apparent consumption	Ratio (percent) of imports to consumption	Ratio (percent) of ending inventories to production
Quantity								
1979...	617,455	224,000	53,704	2/	191,142	704,017	8	31
1980...	639,900	191,142	63,553	2/	209,364	685,231	9	33
1981...	649,019	209,364	70,852	2/	246,019	683,216	10	38
1982...	568,651	246,019	87,579	2/	199,475	702,774	12	35
1983	625,569	199,475	122,329	2/	180,480	766,893	16	29
1984...	628,370	180,480	162,313	2/	195,764	775,399	21	31
1985...	569,011	195,764	213,949	2/	184,648	794,076	27	32
Value								
1979...	963,230	349,440	65,071	2/	298,182	1,079,559	6	31
1980...	1,171,017	349,790	97,254	2/	383,136	1,234,925	8	33
1981...	1,272,077	410,353	110,358	2/	482,197	1,310,591	8	38
1982...	1,057,691	457,595	113,347	2/	371,024	1,257,610	9	35
1983	1,032,189	329,134	137,323	2/	297,792	1,200,854	11	29
1984...	942,555	270,720	167,270	2/	293,646	1,086,899	15	31
1985...	836,446	287,773	209,140	2/	271,433	1,061,927	20	32
Unit value								
1979...	\$1.56	\$1.56	\$1.21	2/	\$1.56	\$1.53	3/	3/
1980...	1.83	1.83	1.53	2/	1.83	1.80	3/	3/
1981...	1.96	1.96	1.56	2/	1.96	1.92	3/	3/
1982...	1.86	1.86	1.29	2/	1.86	1.79	3/	3/
1983	1.65	1.65	1.12	2/	1.65	1.57	3/	3/
1984...	1.50	1.50	1.03	2/	1.50	1.40	3/	3/
1985...	1.47	1.47	.98	2/	1.47	1.34	3/	3/

1/ Includes production by U.S. firms in American Samoa and Puerto Rico.

2/ Negligible.

3/ Not applicable.

Source: Production, beginning inventories, and ending inventories compiled from data submitted in response to questionnaires of the U.S. International Trade Commission; imports compiled from official data of the U.S. Department of Commerce.

Table 33.—Canned tuna: 1/ Percentage distribution of the quantity of U.S. imports, by markets, 1979-85

Country	1979	1980	1981	1982	1983	1984	1985
Thailand.....	9.0	10.1	14.6	21.3	32.6	55.3	57.3
Philippines.....	13.0	21.7	30.3	31.6	26.2	13.7	14.4
Japan.....	52.8	39.0	30.0	30.2	16.7	16.5	11.1
Taiwan.....	22.9	25.1	22.3	12.2	15.3	11.0	11.0
Ecuador.....	.0	.0	.0	.0	.0	.5	2.4
Malaysia.....	.5	<u>2/</u>	1.0	.9	2.5	1.0	1.8
Indonesia.....	.0	.0	.2	.7	2.2	1.4	.6
Venezuela.....	.0	.0	.0	.0	.0	<u>2/</u>	.4
Singapore.....	.0	<u>2/</u>	.1	.1	.3	<u>2/</u>	.3
All other.....	1.8	4.1	1.6	3.0	4.3	.5	.6
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0

1/ TSUS items 112.30, 112.34, and 112.90.

2/ Less than 0.05 percent.

Source: Calculated based on official statistics of the U.S. Department of Commerce.

Note.—Because of rounding, figures may not add to the totals shown.

Table 34.—Canned tuna: Food and Drug Administration detentions, by countries, fiscal years 1982-85

(In pounds)				
Country	1982	1983	1984	1985
Thailand.....	90,680	391,353	1,040,277	882,397
Japan.....	27,300	122,889	73,063	446,381
American Samoa.....	0	0	0	303,030
Philippines.....	599,983	305,650	0	224,984
Malaysia.....	0	0	54,600	222,529
Taiwan.....	327,796	196,722	102,389	160,050
Hong Kong.....	0	0	0	87,912
West Germany.....	0	0	0	5,069
Spain.....	2,109	1,250	2,600	2,656
Canada.....	0	0	0	720
Israel.....	0	0	4,758	0
Singapore.....	29,250	33,665	3,593	0
Portugal.....	0	0	261	0
United States.....	10,857	0	0	0
Australia.....	175,500	0	0	0
China.....	225	0	0	0
Republic of Korea.....	17,456	0	0	0
Total.....	1,281,156	1,051,529	1,281,541	2,335,728

Source: Compiled from data supplied by the Food and Drug Administration.

Note.—Because of rounding, figures may not add to the totals shown.

Table 35.—Frozen tuna: Transshipping rates, by origin and destination, August 1986

Origin	Puerto Rico		American Samoa		Bangkok, Thailand		Italy	
	Per ton	Per pound	Per ton	Per pound	Per ton	Per pound	Per ton	Per pound
Guam/Tinian...	\$118	\$0.059	\$85	\$0.0425	\$80	\$0.04	—	—
Panama.....	118.50	.05925	—	—	—	—	—	—
Venezuela.....	100	.05	—	—	—	—	\$130	\$0.09
Ivory Coast...	180	.09	—	—	—	—	—	—
South Africa..	190	.095	—	—	—	—	—	—
Mauritius.....	190	.095	—	—	—	—	—	—
Brazil.....	180	.09	—	—	—	—	—	—

Source: Personal communication with Mr. Edward A. Ryan, vice president, Star Kist Foods, Inc., Aug. 19, 1986.

Note.—Rates are quoted in short tons (2,000 pounds) on a "berth-term" basis, which includes loading and unloading costs. The origins and destinations given above are representative of major trade routes for frozen tuna.

Table 36.—Frozen tuna: American Tuna Sales Association contract ex-vessel prices, by types and sizes, November 1978–September 1986

(Dollars per short ton)

Item	Skipjack					Yellowfin								7.5 lb. and over	20 lb. and over	60 lb. and over
	Under 3 lb.	3-4 lb.	4-7.5 lb.	4	7.5	Under 3 lb.	Under 4 lb.	Under 7.5 lb.	3-4 lb.	4-7.5 lb.	7.5-20 lb.	7.5-60 lb.				
				lb. and over	lb. and over											
Nov. 13, 1978-Feb. 28, 1979.....	400	590	1/	740	1/	1/	1/	700	1/	1/	1/	1/	840	1/	1/	
Mar. 1, 1979-Apr. 30, 1979.....	420	610	1/	760	1/	1/	1/	720	1/	1/	1/	1/	860	1/	1/	
May 1, 1979-Aug. 15, 1979.....	505	655	1/	805	1/	1/	1/	765	1/	1/	1/	1/	905	1/	1/	
Aug. 16, 1979-Nov. 30, 1979.....	545	700	1/	850	1/	1/	1/	810	1/	1/	1/	1/	950	1/	1/	
Dec. 1, 1979-Sept. 30, 1981.....	800	1000	1/	1100	1/	1/	1/	1100	1/	1/	1/	1/	1200	1/	1/	
Dec. 29, 1981-Feb. 15, 1982 2/ 3/...	800	1000	1/	1100	1/	1/	1/	1100	1/	1/	1/	1200			1210	
Feb. 16, 1982-Feb. 28, 1983: 2/																
Puerto Rico/American Samoa.....	500	700	1/	840	1/	1/	1/	890/800	1/	1/	1050/1025	1/	1/	1170/1100	1/	
Mar. 1, 1983-June 30, 1983: 4/							1/	1/	1/	1/	1/	1/	1/	1/	1/	
Puerto Rico/American Samoa.....	420/370	700/650	850/800	1/	950/900	420/370		1/	700/650	850/800	1050/1000	1/	1/	1230/1180	1/	
July 1, 1983-Jan. 31, 1984: 5/ 6/																
Puerto Rico/American Samoa.....	420/375	620/575	770/725	1/	870/825	1/	620/575	1/	1/	770/725	1105/925	1/	1/	1155/1085	1/	
California.....	440	640	800	1/	900	1/	640	1/	1/	800	990	1/	1/	1125	1/	
Transshipment f.o.b. Samoa.....	295	500	650	1/	750		510	1/	1/	660	860	1/	1/	1015	1/	
Feb. 1, 1984-May 31, 1984 7/																
Puerto Rico/American Samoa.....	250	500/420	730/650	1/	830/750	1/	250 1/	1/	500/420	730/650	950/840	1/	1/	1085/975	1/	
June 1, 1984-Aug. 31, 1984: 8/																
Puerto Rico/American Samoa.....	250	500/420	730/640	1/	830/740	1/	250 1/	1/	500/420	730/640	950/840	1/	1/	1065/940	1/	
Sept. 1, 1984-Nov. 30, 1984: 8/																
Puerto Rico/American Samoa.....	200	420/340	650/560	1/	750/660	1/	200 1/	1/	420/340	650/560	875/760	1/	1/	955/845	1/	
Dec. 1, 1984-Mar. 31, 1985: 9/																
Puerto Rico/American Samoa.....	280	480	580/610	1/	640/680	1/	280 1/	1/	480	580/610	705/695	1/	1/	805/795	1/	
April 1, 1985-Jan. 5, 1986: 9/																
All ports.....	280	480	610	1/	680	1/	280 1/	1/	480	610	705	1/	1/	805	1/	
Jan. 6, 1986-Mar. 31, 1986: 9/																
Puerto Rico/American Samoa.....	280	480	610	1/	680	1/	280 1/	1/	480	610	680/705	1/	1/	760/805	1/	
April 1, 1986-May 31, 1986: 9/																
Puerto Rico/American Samoa.....	280	480	610	1/	680	1/	280 1/	1/	480	610	680/705	1/	1/	740/805	1/	
June 1, 1986-Sept. 19, 1986: 9/																
Puerto Rico/American Samoa.....	265	465	595	1/	665	1/	265 1/	1/	465	595	665/680	1/	1/	745/760	1/	

See footnotes on next page.

Footnotes to table 36.

1/ Not applicable.

2/ Grade 1 fish only. Grade 2 fish is \$60/ton lower. Grade 1 fish has temperature of no more than 14°F; salt content no more than 2.5 percent; no deformity. Grade 2 is all other.

3/ Star-Kist price in American Samoa was \$100/ton lower for all categories.

4/ Standard-grade fish only. Premium-grade fish is \$30/ton higher; minimum-grade fish is \$60/ton lower. Standard grade: average temperature of 14°F (no individual fish more than 16°F); salt content higher than 1.5 percent but less than 2.5 percent; 10 percent allowance for deformities. Premium grade: average temperature of 14°F (no individual fish more than 16°F); salt content no higher than 1.5 percent; 5 percent allowance for deformities. Minimum grade: average temperature over 14°F; salt content between 2.5 and 3.6 percent; or more than 10 percent deformities.

5/ Standard-grade fish only. Premium-grade fish is \$40/ton higher; minimum-grade fish is \$40/ton lower. Slight changes in quality specifications were made for this contract period.

6/ During Nov. 1, 1983-Jan. 31, 1984, the skipjack prices in Puerto Rico were reduced by \$40/ton for all sizes.

7/ Standard-grade fish only. During this period, premium-grade fish had the following adjustments added to the standard price, while minimum-grade fish had these adjustments deducted from the standard price:

8/ Standard-grade fish only. During this period, minimum-grade fish had \$40/ton deducted from the standard price, while premium-grade fish had the following adjustments added to the standard price:

Species	Size	Price adjustment
Yellowfin	20+ lbs.	\$30
Yellowfin	7.5-20 lbs.	\$30
Skipjack	7.5+ lbs.	\$30
YF and SJ	4-7.5 lbs.	\$60
YF and SJ	3-4 lbs.	\$60
YF and SJ	Under 3 lbs.	\$60

Species	Size	Price adjustment
Yellowfin	20+ lbs.	\$20
Skipjack	7.5+ lbs.	\$20
All other		\$30

9/ Standard-grade fish only. Premium-grade fish is \$20/ton higher; minimum-grade fish is \$40/ton lower.

Source: American Tuna Sales Association.

Table 37.—Frozen tuna: Average unit values for U.S.-landed tuna delivered to U.S. processors, by species, 1979-85

(Per short ton)			
Year	Albacore	Yellowfin	Skipjack
1979	1,286	863	728
1980	1,659	1,180	1,063
1981	1,880	1,170	1,040
1982	1,393	1,123	967
1983	1,268	1,032	791
1984	1,252	982	760
1985	1,080	860	640

Source: National Marine Fisheries Service.

Table 38.—Frozen tuna—Distribution of the catch of yellowfin and skipjack by all nations in the eastern tropical Pacific, by sizes, 1980-85

(In percent)						
Size 1/	1980	1981	1982	1983	1984	1985
Yellowfin:						
60 pounds and over...	22.9	24.7	27.3	37.9	33.0	45.8
20 pounds and over...	47.1	50.3	59.5	60.0	65.5	87.4
7.5 pounds and over..	79.6	84.3	75.5	78.8	90.1	97.8
7.5-60 pounds.....	56.7	59.6	48.2	40.9	57.1	52.0
7.5-20 pounds.....	32.5	34.0	16.0	18.8	24.6	10.4
4-7.5 pounds.....	13.9	11.1	13.0	17.0	8.6	1.7
3-4 pounds.....	3.9	3.0	6.2	2.2	1.1	0.3
under 7.5 pounds.....	20.4	15.7	24.5	20.9	10.2	2.1
under 4 pounds.....	6.5	4.6	11.5	3.9	1.6	0.4
under 3 pounds.....	2.6	1.6	5.3	1.7	0.5	0.1
Skipjack:						
7.5 pounds and over..	20.3	18.2	27.4	23.9	41.3	69.3
4 pounds and over....	67.0	58.0	72.6	66.9	83.3	97.4
4-7.5 pounds.....	46.7	39.8	45.2	43.0	42.0	28.1
3-4 pounds.....	20.4	21.4	15.9	20.0	12.4	1.7
under 3 pounds.....	12.7	20.2	11.4	12.6	4.4	0.6

1/ Size categories according to the price schedule of the American Tuna Sales Association.

Source: Calculated by Commission staff from unpublished official statistics of the Inter-American Tropical Tuna Commission.

Table 39.—Canned whitemeat and lightmeat tuna in water and oil, packed in retail-sized containers, private-label brands: Price per case 1/, by pack and quarters, January–March 1984–86

Period	Whitemeat, chunk, in water		Lightmeat, chunk, in water		Lightmeat, chunk, in oil
	Domestic	Imported	Domestic	Imported	Domestic
1984:					
January–March	\$38.92	\$37.56	\$26.46	\$25.46	\$27.32
April–June	39.37	38.17	26.26	26.47	26.26
July–September	37.45	38.04	26.42	25.61	26.71
October–December	37.69	39.43	26.14	26.33	26.24
1985:					
January–March	37.54	42.66	25.59	26.39	25.63
April–June	40.00	40.96	25.42	25.75	24.98
July–September	38.61	42.02	23.11	26.71	24.63
October–December	37.84	39.90	20.94	25.89	23.13
1986: January–March	36.94	34.64	23.06	24.25	24.10

1/ One case contains 48 cans of 6.5 oz., or 312 oz.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 40.—Canned whitemeat and lightmeat tuna in water and oil, packed in institutional-sized containers, private-label brands: Price per case, 1/ by pack and quarters, January–March 1984–86

Period	Whitemeat, chunk, in water		Lightmeat, chunk, in water		Lightmeat, chunk, in oil
	Domestic	Imported	Domestic	Imported	Domestic
1984:					
January–March	\$47.10	\$40.77	\$30.00	\$28.01	<u>2/</u>
April–June	45.65	43.88	28.92	29.59	<u>2/</u>
July–September	46.91	42.24	28.64	28.13	\$30.50
October–December	47.20	41.45	29.27	27.85	30.50
1985:					
January–March	48.21	43.77	27.32	27.26	30.50
April–June	40.87	47.67	28.36	26.01	30.50
July–September	47.91	45.47	27.45	26.33	<u>2/</u>
October–December	47.82	45.55	28.36	26.61	30.50
1986: January–March	48.25	42.66	28.02	25.68	30.50

1/ 1 case contains 6 cans of 66.5 oz., or 399 oz.

2/ No sales were reported during January–June 1984 and July–September 1985.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 41.—Canned whitemeat and lightmeat tuna in water and oil, packed in retail-sized containers, advertised-label brands: Price per case, 1/ by pack and quarters, January–March 1984–86

Period	Whitemeat, chunk, in water		Lightmeat, chunk, in water		Lightmeat, chunk, in oil
	Domestic	Imported	Domestic	Imported	Domestic
1984:					
January–March	\$41.75	\$43.12	\$29.31	\$25.78	\$29.57
April–June	41.42	47.34	29.10	25.84	29.74
July–September	42.32	46.88	28.47	27.33	28.93
October–December	43.30	47.07	29.42	24.92	29.49
1985:					
January–March	43.74	<u>2/</u> 51.20	27.03	25.50	27.24
April–June	43.37	45.79	24.47	25.30	24.33
July–September	42.99	44.82	24.99	25.34	25.12
October–December	40.08	44.82	25.18	24.94	25.85
1986: January–March	39.86	44.99	24.56	25.59	24.85

1/ 1 case contains 48 cans of 6.5 oz., or 312 oz.

2/ The prices for the period January–March 1985–86 are based on a report of one importer.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 42.—Canned whitemeat and lightmeat tuna in water and oil, packed in institutional-sized containers, advertised-label brands: Price per case, 1/ by types and quarters, January–March 1984–86

Period	Whitemeat, chunk, in water		Lightmeat, chunk, in water		Lightmeat, chunk, in oil
	Domestic	Imported	Domestic	Imported	Domestic
1984:					
January–March	\$39.94	\$40.76	\$27.98	\$28.10	\$33.54
April–June	41.14	43.49	27.70	28.14	33.54
July–September	44.42	44.92	28.60	28.09	33.54
October–December	46.21	45.00	30.70	28.67	34.98
1985:					
January–March	44.67	45.35	26.03	26.23	<u>2/</u>
April–June	46.71	43.99	26.99	25.92	34.77
July–September	46.95	44.36	28.80	25.78	34.84
October–December	47.08	44.07	27.25	25.90	34.81
1986: January–March	44.68	45.18	27.55	24.50	<u>2/</u>

1/ 1 case contains 6 cans of 66.5 oz., or 399 oz.

2/ No sales were reported during January–March 1985 and January–March 1986.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 43.—Canned tuna: Retail prices at 5 metropolitan Washington area food stores, by types, sizes, packing medium, and brands 1/

Type	Size	Packing medium	Brand	Price				
				Nationwide supermarket chainstore A	Nationwide supermarket chainstore B	Nationwide supermarket chainstore C	Regional convenience chainstore	Independent grocery store
Solid White	12.5 oz.	Oil	Bumble Bee	-	2.87	3.29	-	-
Solid White	12.5 oz.	Water	Star-Kist	\$2.99	\$3.29	\$3.29	-	-
Solid White	12.5 oz.	Water	Bumble Bee	3.29	2.87	3.29	-	-
Solid White	12.5 oz.	Water	"House"	2.59	-	-	-	-
Chunk Light	12.5 oz.	Oil	Ch./Sea 2/	1.99	-	1.88	-	-
Chunk Light	12.5 oz.	Oil	Star-Kist	2.99	1.68	1.88	-	-
Chunk Light	12.5 oz.	Oil	Bumble Bee	1.85	1.68	1.88	-	-
Chunk Light	12.5 oz.	Oil	"House"	1.79	1.39	1.59	-	-
Chunk Light	12.5 oz.	Water	Star-Kist	2.29	1.39	1.88	-	-
Chunk Light	12.5 oz.	Water	Ch./Sea	1.99	1.68	1.88	-	-
Chunk Light	12.5 oz.	Water	Bumble Bee	-	1.48	1.88	-	-
Chunk Light	12.5 oz.	Water	"House"	-	1.39	1.59	-	-
Solid Light	12.5 oz.	Water	Deep Blue	-	1.08	-	-	-
Chunk Light	9.5 oz.	Oil	Ch./Sea	1.59	-	-	-	-
Chunk Light	9.5 oz.	Oil	Star-Kist	-	1.25	1.49	-	-
Chunk Light	9.5 oz.	Oil	"House"	-	1.17	-	-	-
Chunk Light	9.5 oz.	Water	Ch./Sea	1.59	-	-	-	-
Chunk Light	9.5 oz.	Water	Star-Kist	-	-	1.49	-	-
Solid White	6.5 oz.	Oil	Star-Kist	-	1.46	-	-	-
Solid White	6.5 oz.	Oil	Ch./Sea	1.85	1.79	1.79	-	-
Solid White	6.5 oz.	Oil	Bumble Bee	-	1.50	1.79	\$1.99	-
Solid White	6.5 oz.	Oil	"House"	-	1.27	-	-	-
Solid White	6.5 oz.	Water	Star-Kist	-	1.46	1.79	-	\$1.99
Solid White	6.5 oz.	Water	Ch./Sea	-	1.79	1.79	-	1.99
Solid White	6.5 oz.	Water	Bumble Bee	-	1.50	1.79	-	-
Solid White	6.5 oz.	Water	Deep Blue	-	1.39	-	-	-
Solid White	6.5 oz.	Water	"House"	-	1.27	1.49	-	-
Chunk White	6.5 oz.	Oil	Bumble Bee	1.49	1.49	1.49	-	-
Chunk White	6.5 oz.	Water	Bumble Bee	1.49	1.49	1.49	-	-
Solid Light	6.5 oz.	Water	Star-Kist	-	1.39	-	-	-
Solid Light	6.5 oz.	Water	Ch./Sea	1.85	-	-	-	-
Solid Light	6.5 oz.	Water	Deep Blue	-	0.98	1.15	-	-
Chunk Light	6.5 oz.	Oil	Star-Kist	1.25	0.88	0.98	-	-
Chunk Light	6.5 oz.	Oil	Ch./Sea	0.68	0.88	0.98	-	-
Chunk Light	6.5 oz.	Oil	Bumble Bee	0.98	0.78	0.98	-	1.39
Chunk Light	6.5 oz.	Oil	Br./Ch. 3/	0.93	-	-	-	-
Chunk Light	6.5 oz.	Oil	"House"	0.83/0.85 4/	-	0.50 5/	-	-
Chunk Light	6.5 oz.	Oil	American	-	-	-	-	0.89
Chunk Light	6.5 oz.	Water	Star-Kist	0.98	0.88	0.98	1.39	-
Chunk Light	6.5 oz.	Water	Ch./Sea	0.98	0.88	0.98	-	-
Chunk Light	6.5 oz.	Water	Bumble Bee	0.98	0.78	0.98	-	-
Chunk Light	6.5 oz.	Water	Br./Ch.	0.93	-	-	-	-
Chunk Light	6.5 oz.	Oil	"House"	0.83	0.73	0.50 5/	-	-
Solid White	3.5 oz.	Oil	Bumble Bee	-	-	1.00	-	-
Solid White	3.5 oz.	Water	Bumble Bee	0.90	-	1.00	-	-
Solid White	3.5 oz.	Water	Deep Blue	-	1.00	-	-	-
Chunk Light	3.5 oz.	Oil	Bumble Bee	-	-	1.00	-	-
Chunk Light	3.5 oz.	Oil	Star-Kist	-	0.75	-	-	-
Chunk Light	3.5 oz.	Water	Bumble Bee	-	0.99	0.79	-	-
Chunk Light	3.5 oz.	Water	Star-Kist	-	0.75	0.79	-	-
Chunk Light	3.5 oz.	Water	Deep Blue	-	1.00	-	-	-

1/ Domestic only; no imported canned tuna was found in the survey.

2/ Chicken of the Sea.

3/ Breast of Chicken.

4/ 2 "house" brands are marketed by this chain.

5/ Sale price.

Source: Compiled by the staff of the U.S. International Trade Commission.

Table 44.—Frozen and fresh tuna: Exports and imports by principal nations, 1979-84

(In thousands of short tons)

Market/Source	1979	1980	1981	1982	1983	1984
Exports						
Japan.....	65	100	51	45	62	98
Korea.....	168	130	118	89	207	95
France.....	15	19	25	41	51	41
Solomon Islands....	25	24	26	17	31	36
Mexico 1/.....	2/	2/	24	17	13	35
Singapore.....	12	24	26	21	31	32
Spain.....	30	23	50	58	50	29
Philippines.....	39	54	40	20	21	15
Ghana.....	42	31	35	34	23	18
Indonesia.....	11	12	15	21	22	17
All other.....	88	100	139	115	101	83
Total.....	495	517	549	478	612 3/	498 3/
Imports						
United States.....	315	297	302	245	219	202
Japan.....	123	101	111	140	157	122
Thailand 1/.....	2/	2/	2/	2/	29	121
Italy.....	83	85	78	85	82	91
Ivory Coast.....	9	15	17	28	31	29
Singapore.....	8	15	17	10	20	22
France.....	12	12	13	22	21	21
Senegal.....	13	15	22	15	25	18
Spain.....	9	13	31	47	24	17
Ghana.....	43	31	30	19	22	17
All other.....	31	35	33	36	4	22
Total.....	646	619	654	647	634 3/	681 3/

1/ Estimate of the Food and Agriculture Organization of the United Nations.

2/ Not available.

3/ Incomplete total owing to missing reports from some countries.

Source: INFOFISH, Food and Agriculture Organization of the United Nations.

Table 45.—Canned tuna: Exports and imports by principal countries, 1979-85

(In thousands of short tons)

Market/Source	1979	1980	1981	1982	1983	1984	1985
Exports							
Thailand 1/.....	2/	2/	9	17	31	65	93
Japan.....	42	42	39	40	41	51	39
Philippines.....	4	12	20	21	26	25	24
Ivory Coast.....	15	20	19	21	26	25	25
Senegal.....	13	13	17	18	22	22	3/
Taiwan.....	2/	2/	15	12	17	14	13
Spain.....	8	9	13	2	4	4	4
All other.....	18	20	22	23	25	21	3/
Total.....	100	116	154	154	192	227	3/
Imports							
United States.....	26	32	35	44	61	82	107
France.....	25	28	31	33	37	36	42
United Kingdom.....	11	12	21	14	20	26	25
West Germany.....	17	17	15	17	18	21	22
Canada.....	11	10	11	8	12	13	3/
Sweden.....	3	3	3	3	3	4	3/
Italy.....	3	3	2	3	3	4	7
Australia.....	2	3	2	1	1	3	3/
Belgium.....	4	4	6	4	6	2	3/
Denmark.....	1	1	1	1	2	2	3/
Netherlands.....	1	2	1	1	1	2	3/
All other.....	17	12	9	10	9	6	3/
Total.....	121	127	137	139	173	201	3/

1/ Estimate of the Food and Agriculture Organization of the United Nations.

2/ Indicates less than 500 metric tons.

3/ Not available.

Source: INFOFISH, Food and Agriculture Organization of the United Nations.

Table. 46—Frozen tuna: U.S. imports for consumption, by type and species, 1979–85, January–March 1985, and January–March, 1986

Type and species	1979	1980	1981	1982	1983	1984	1985	January–March—	
								1985	1986
Quantity (1,000 pounds)									
Frozen:									
Skipjack.....	325,162	352,565	349,989	249,397	263,855	204,804	171,240	63,307	31,206
Yellowfin.....	118,344	102,389	112,246	84,295	55,825	44,545	86,866	25,003	23,753
Albacore.....	178,774	127,406	126,577	145,144	114,886	153,581	141,594	32,111	22,542
Other.....	9,369	9,921	14,484	6,217	4,514	1,295	4,283	2,498	424
Loins.....	5,842	3,686	2,511	1,986	774	3	1,530	15	201
Total.....	637,491	595,967	605,807	487,039	439,853	404,228	405,513	122,934	78,127
Value (1,000 dollars)									
Frozen:									
Skipjack.....	95,917	166,840	180,345	113,591	97,945	72,113	54,534	15,304	12,346
Yellowfin.....	45,503	54,153	69,926	49,188	27,431	22,475	42,974	11,871	12,330
Albacore.....	121,601	115,094	127,951	134,441	76,545	119,872	114,051	27,739	17,588
Other.....	3,368	5,251	9,356	4,491	2,805	1,467	2,584	1,382	580
Loins.....	5,706	5,344	5,497	4,177	945	7	1,973	14	103
Total.....	272,095	346,682	393,075	305,888	205,671	215,934	216,115	56,310	43,026
Unit value (per pound)									
Frozen:									
Skipjack.....	\$0.29	\$0.47	\$0.52	\$0.46	\$0.37	\$0.35	\$0.32	\$0.24	\$0.40
Yellowfin.....	.38	.53	.62	.58	.49	.50	.49	.47	.52
Albacore.....	.68	.90	1.01	.93	.67	.78	.81	.86	.78
Other.....	.36	.53	.65	.72	.62	1.13	.60	.55	1.37
Loins.....	.98	1.45	2.19	2.10	1.22	2.30	1.29	.90	.91
Average.....	.43	.58	.65	.63	.47	.53	.53	.46	.55

Source: Compiled from official statistics of the U.S. Department of Commerce.

Note.—Because of rounding, figures may not add to totals shown.

Table. 47—Frozen tuna 1/: U.S. imports for consumption, by principal sources, 1979-85, January-March 1985, and January-March, 1986

Source	1979	1980	1981	1982	1983	1984	1985	January-March—	
								1985	1986
Quantity (1,000 pounds)									
Japan.....	116,697	158,916	108,472	87,354	106,291	117,876	53,832	15,640	4,381
Taiwan.....	44,156	22,462	36,033	60,598	47,376	53,224	38,124	7,302	6,726
Venezuela.....	11,169	8,955	21,982	21,198	20,630	17,815	53,484	6,999	11,607
Panama.....	56,626	35,719	31,520	47,830	24,893	34,022	39,151	16,028	10,875
South Africa.....	10,149	19,071	18,842	14,635	940	7,315	15,386	858	5,621
France.....	8,891	24,109	43,795	52,515	37,242	23,430	30,264	11,053	7,873
Ecuador.....	37,774	26,114	0	4	1,906	13,896	55,602	33,106	1,601
Brazil.....	869	10,458	13,859	31,134	29,825	13,415	30,558	5,508	1,940
Ghana.....	8,233	12,878	26,201	29,417	46,828	35,628	19,949	0	10,109
Spain.....	9,828	12,115	35,025	21,356	9,771	28,762	7,992	2,152	2,423
All other.....	333,099	265,170	270,078	120,999	114,151	58,044	61,172	24,289	14,971
Total.....	637,491	595,967	605,807	487,039	439,853	404,228	405,513	122,934	78,127
Value (1,000 dollars)									
Japan.....	54,327	97,754	75,462	59,281	52,264	70,041	43,770	13,791	3,435
Taiwan.....	18,813	17,627	33,635	52,862	29,645	38,025	31,461	6,015	6,934
Venezuela.....	2,711	3,069	12,794	10,940	8,708	7,351	23,055	3,037	4,850
Panama.....	23,410	18,799	18,271	25,833	11,124	11,756	14,705	5,296	4,378
South Africa.....	7,252	19,016	18,257	12,808	680	6,031	12,902	837	4,348
France.....	1,611	10,231	24,141	29,734	16,122	8,989	12,302	4,540	3,340
Ecuador.....	12,185	11,137	-	2	678	4,263	12,239	4,731	663
Brazil.....	288	5,206	7,441	15,709	12,145	6,041	11,288	2,037	776
Ghana.....	1,688	5,141	13,030	14,969	19,271	14,418	8,541	-	4,282
Spain.....	998	4,604	19,519	11,601	4,718	17,881	7,361	2,092	2,018
All other.....	148,811	154,099	170,525	72,147	50,315	31,137	38,492	13,934	8,000
Total.....	272,094	346,683	393,075	305,888	205,671	215,934	216,115	56,310	43,026
Unit value (per pound)									
Japan.....	\$0.47	\$0.62	\$0.70	\$0.68	\$0.49	\$0.59	\$0.81	\$0.88	\$0.78
Taiwan.....	.43	.78	.93	.87	.63	.71	.83	.82	1.03
Venezuela.....	.24	.34	.58	.52	.42	.41	.43	.43	.42
Panama.....	.41	.53	.50	.54	.45	.34	.38	.33	.40
South Africa.....	.71	1.00	.97	.88	.72	.82	.84	.98	.77
France.....	.18	.42	.55	.57	.43	.38	.41	.41	.42
Ecuador.....	.32	.43	-	.58	.36	.31	.22	.14	.41
Brazil.....	.33	.50	.54	.50	.41	.45	.37	.37	.40
Ghana.....	.21	.40	.50	.51	.41	.40	.43	-	.42
Spain.....	.10	.38	.56	.54	.48	.62	.92	.97	.83
All other.....	.45	.58	.63	.60	.44	.54	.63	.57	.53
Average.....	.43	.58	.65	.63	.47	.53	.53	.46	.55

1/ Includes cooked loins.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table. 48—Frozen albacore tuna: U.S. imports for consumption, by principal sources, 1979–85, January–March 1985, and January–March, 1986

Source	1979	1980	1981	1982	1983	1984	1985	January-March-	
								1985	1986
Quantity (1,000 pounds)									
Japan.....	45,298	35,816	33,017	42,616	45,651	70,196	50,808	15,588	3,465
Taiwan.....	37,827	21,122	33,269	54,068	35,659	35,546	34,061	4,773	4,786
South Africa.....	10,149	17,404	17,964	9,686	822	7,312	15,386	858	5,621
Spain.....	34	1/	948	1,045	3,591	14,545	7,951	2,120	2,423
Netherlands									
Antilles.....	276	3,065	3,151	0	300	491	7,669	1,546	0
Singapore.....	5,546	5,520	5,912	3,980	4,228	7,464	5,050	3,842	234
Vanuatu.....	10,650	10,427	8,745	1,914	2,427	0	4,698	0	0
Malaysia.....	602	211	271	0	0	224	2,110	0	0
Mauritius.....	11,421	5,763	2,260	3,938	0	2,049	1,688	1,688	1,393
St. Lucia.....	0	0	0	0	0	0	2,199	0	793
All other.....	56,971	28,078	21,042	26,297	22,208	15,756	9,974	1,696	3,828
Total.....	178,774	127,406	126,577	145,144	114,886	153,581	141,594	32,111	22,542
Value (1,000 dollars)									
Japan.....	34,545	33,868	36,142	40,156	30,414	54,717	41,373	13,706	2,512
Taiwan.....	17,255	16,682	31,694	49,132	23,272	27,857	24,928	3,173	3,925
South Africa.....	7,252	18,024	17,399	10,141	645	6,027	12,902	837	4,348
Spain.....	7	2/	864	2,035	2,007	12,084	7,197	1,969	2,018
Netherlands									
Antilles.....	202	3,068	3,520	-	120	453	6,366	1,410	-
Singapore.....	4,200	5,107	6,573	3,787	2,925	6,237	4,737	3,708	187
Vanuatu.....	8,524	9,759	9,140	2,091	2,148	-	4,272	-	-
Malaysia.....	429	203	303	-	-	202	1,947	-	-
Mauritius.....	7,936	5,832	2,202	3,323	-	1,924	1,490	1,490	1,097
St. Lucia.....	-	-	-	-	-	-	1,319	-	476
All other.....	41,251	22,551	20,115	23,776	14,935	10,372	7,519	1,447	3,024
Total.....	121,601	115,094	127,951	134,441	76,545	119,872	114,051	27,739	17,588
Unit value (per pound)									
Japan.....	\$0.76	\$0.95	\$1.09	\$0.94	\$0.67	\$0.78	\$0.81	\$0.88	\$0.73
Taiwan.....	.46	.76	.95	.90	.65	.70	.73	.66	.82
South Africa.....	.71	1.04	.97	1.05	.78	.82	.84	.98	.77
Spain.....	.20	.80	.91	1.10	.50	.83	.91	.93	.83
Netherlands									
Antilles.....	.73	1.00	1.12	-	.40	.92	.83	.91	-
Singapore.....	.76	.93	1.11	.95	.69	.84	.94	.97	.80
Vanuatu.....	.80	.94	1.05	1.09	.88	-	.91	-	-
Malaysia.....	.71	.96	1.12	-	-	.91	.92	-	-
Mauritius.....	.64	1.01	.97	.84	-	.94	.80	.80	.79
St. Lucia.....	-	-	-	-	-	-	.60	-	.60
All other.....	.72	.80	.96	.90	.67	.66	.75	.85	.79
Average.....	.68	.90	1.01	.93	.67	.78	.81	.86	.78

1/ Less than 500 pounds.

2/ Less than \$500.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 49—Frozen tropical tuna: U.S. imports for consumption, by principal sources, 1979-85, January-March 1985, and January-March, 1986

Source	1979	1980	1981	1982	1983	1984	1985	January-March—	
								1985	1986
Quantity (1,000 pounds)									
Venezuela.....	11,169	8,955	21,982	21,198	20,630	17,815	50,828	6,999	11,603
Panama.....	55,680	35,719	31,520	47,828	24,893	34,822	38,901	16,028	10,875
France.....	8,891	24,109	43,795	47,039	35,653	23,409	30,264	11,053	7,024
Ecuador.....	37,056	25,642	0	0	1,800	13,896	54,613	33,099	1,401
Brazil.....	477	10,234	13,610	29,916	28,587	10,538	30,267	5,457	1,940
Ghana.....	8,233	12,689	26,098	29,351	46,789	35,504	18,624	0	10,109
Seychelles.....	0	0	0	0	0	0	11,654	5,710	6,050
Taiwan.....	6,329	1,340	2,763	5,634	11,474	17,250	3,068	2,524	1,941
Ivory Coast.....	4,913	1,256	5,014	2,926	2,193	0	7,250	7,250	0
Solomon Islands...	9,178	18,147	33,415	0	6,611	0	6,810	0	0
All other.....	310,949	326,784	297,782	154,643	145,235	96,857	6,710	2,687	4,441
Total.....	452,875	464,875	475,970	338,535	323,864	250,091	258,989	90,807	55,384
Value (1,000 dollars)									
Venezuela.....	2,711	3,069	12,794	10,940	8,708	7,351	21,814	3,037	4,848
Panama.....	22,744	18,799	18,271	25,832	11,124	11,756	14,505	5,296	4,378
France.....	1,611	10,231	24,141	24,543	14,546	8,976	12,302	4,540	2,831
Ecuador.....	11,365	10,481	-	-	573	4,263	11,205	4,721	484
Brazil.....	210	5,019	7,169	14,641	11,199	4,170	11,043	1,983	776
Ghana.....	1,688	4,984	12,930	14,911	19,232	14,306	7,746	-	4,282
Seychelles.....	-	-	-	-	-	-	4,132	1,679	2,420
Taiwan.....	1,558	945	1,940	3,502	5,788	8,952	3,363	2,836	3,010
Ivory Coast.....	2,579	691	3,087	1,519	623	-	3,040	3,040	-
Solomon Islands...	3,224	10,118	18,820	-	2,814	-	2,724	-	-
All other.....	97,097	161,908	159,867	70,376	52,874	34,779	3,449	1,425	2,227
Total.....	144,787	226,245	259,019	166,264	127,481	94,554	95,323	28,557	25,256
Unit value (per pound)									
Venezuela.....	\$0.24	\$0.34	\$0.58	\$0.52	\$0.42	\$0.41	\$0.43	\$0.43	\$0.42
Panama.....	.41	.53	.58	.54	.45	.34	.37	.33	.40
France.....	.18	.42	.55	.52	.41	.38	.41	.41	.40
Ecuador.....	.31	.41	-	-	.32	.31	.21	.14	.35
Brazil.....	.44	.49	.53	.49	.39	.40	.36	.36	.40
Ghana.....	.21	.39	.50	.51	.41	.40	.42	-	.42
Seychelles.....	-	-	-	-	-	-	.35	.29	.40
Taiwan.....	.25	.71	.70	.62	.50	.52	1.10	1.12	1.55
Ivory Coast.....	.53	.55	.62	.52	.28	-	.42	.42	-
Solomon Islands...	.35	.56	.56	-	.43	-	.40	-	-
All other.....	.31	.50	.54	.46	.36	.36	.51	.53	.50
Average.....	.32	.49	.54	.49	.39	.38	.37	.31	.46

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 50.—Frozen yellowfin tuna: U.S. imports for consumption, by principal sources, 1979-85,
January-March 1985, and January-March, 1986

Source	1979	1980	1981	1982	1983	1984	1985	January-March—	
								1985	1986
Quantity (1,000 pounds)									
Venezuela.....	4,562	3,658	9,175	9,484	8,267	9,795	31,853	2,044	8,303
Panama.....	12,081	16,047	17,975	25,366	14,436	8,393	23,842	7,237	9,542
Taiwan.....	1,226	907	1,128	1,535	3,952	5,519	3,448	2,042	1,384
Ecuador.....	18,862	15,158	0	0	1,369	5,254	13,189	8,050	1,401
Ghana.....	402	1,151	2,300	2,131	2,325	1,301	3,891	0	1,446
France.....	0	3,097	17,092	9,141	8,265	4,493	2,616	1,490	423
Seychelles.....	0	0	0	0	0	0	2,315	1,375	0
Brazil.....	0	375	73	831	586	545	1,940	41	0
Ivory Coast.....	176	0	791	88	617	0	1,755	1,755	0
Japan.....	5,518	7,841	8,735	5,805	1,688	2,033	498	11	81
All other.....	74,717	54,155	54,978	29,915	14,320	7,212	1,519	957	1,174
Total.....	118,344	102,389	112,246	84,295	55,825	44,545	86,866	25,003	23,753
Value (1,000 dollars)									
Venezuela.....	1,354	1,546	5,775	5,656	3,939	4,429	14,470	927	3,622
Panama.....	5,311	8,775	11,003	15,044	7,339	3,634	10,345	2,928	3,093
Taiwan.....	517	678	1,087	1,605	3,510	5,356	6,201	2,630	2,432
Ecuador.....	6,323	6,452	-	-	452	1,597	4,366	2,693	483
Ghana.....	77	582	1,350	1,300	1,131	624	1,852	-	817
France.....	-	1,709	10,673	5,561	3,652	2,061	1,222	715	190
Seychelles.....	-	-	-	-	-	-	1,003	551	-
Brazil.....	-	239	50	501	280	297	849	18	-
Ivory Coast.....	93	-	558	50	210	-	843	843	-
Japan.....	1,966	4,855	5,169	3,085	783	1,000	562	30	212
All other.....	29,862	29,317	34,261	16,386	6,136	3,476	1,261	536	679
Total.....	45,503	54,153	69,926	49,188	27,431	22,475	42,974	11,871	12,330
Unit value (per pound)									
Venezuela.....	\$0.30	\$0.42	\$0.63	\$0.60	\$0.48	\$0.45	\$0.45	\$0.45	\$0.44
Panama.....	.41	.55	.61	.59	.51	.43	.43	.40	.41
Taiwan.....	.42	.75	.96	1.05	.89	.97	1.80	1.29	1.76
Ecuador.....	.34	.43	-	-	.33	.30	.33	.33	.35
Ghana.....	.19	.51	.59	.61	.49	.48	.48	-	.57
France.....	-	.55	.62	.61	.44	.46	.47	.48	.45
Seychelles.....	-	-	-	-	-	-	.43	.40	-
Brazil.....	-	.64	.69	.60	.48	.54	.44	.43	-
Ivory Coast.....	.53	-	.70	.57	.34	-	.48	.48	-
Japan.....	.36	.62	.59	.53	.46	.49	1.13	2.70	2.63
All other.....	.40	.54	.62	.55	.43	.48	.83	.56	.58
Average.....	.38	.53	.62	.58	.49	.50	.49	.47	.52

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 51.—Frozen skipjack tuna: U.S. imports for consumption, by principal sources, 1979–85,
January–March 1985, and January–March, 1986

Source	1979	1980	1981	1982	1983	1984	1985	January-March— 1985	1986
Quantity (1,000 pounds)									
France.....	8,891	20,939	26,701	37,568	27,270	18,680	27,239	9,562	6,601
Brazil.....	477	9,856	13,537	29,079	27,992	9,819	28,331	5,416	1,940
Venezuela.....	6,607	5,297	9,900	10,964	11,294	8,019	18,189	2,551	3,300
Ecuador.....	18,192	10,468	0	0	431	8,643	40,938	25,049	0
Ghana.....	7,508	11,238	23,798	27,204	44,397	34,196	14,733	0	8,664
Panama.....	38,281	13,203	11,091	20,643	9,456	26,429	15,059	8,791	1,333
Seychelles.....	0	0	0	0	0	0	9,339	4,335	6,050
Solomon Islands...	8,999	17,731	33,004	0	6,611	0	6,810	0	0
Ivory Coast.....	4,737	1,256	4,222	2,838	1,576	0	5,495	5,495	0
Japan.....	62,379	113,495	66,321	38,825	58,900	45,600	1,871	15	828
All other.....	169,091	149,082	161,415	82,278	75,928	53,420	3,236	2,093	2,491
Total.....	325,162	352,565	349,989	249,397	263,855	204,804	171,240	63,307	31,206
Value (1,000 dollars)									
France.....	1,611	8,490	13,466	18,784	10,838	6,849	10,895	3,825	2,640
Brazil.....	210	4,778	7,118	14,122	10,913	3,768	10,203	1,965	776
Venezuela.....	1,358	1,523	5,277	4,924	4,257	2,921	6,966	956	1,226
Ecuador.....	5,041	4,019	—	—	121	2,666	6,619	2,028	—
Ghana.....	1,488	4,259	11,581	13,602	18,062	13,678	5,893	—	3,465
Panama.....	15,569	6,484	5,787	9,761	3,255	8,122	4,160	2,367	484
Seychelles.....	—	—	—	—	—	—	3,130	1,128	2,420
Solomon Islands...	3,144	9,884	18,591	—	2,814	—	2,724	—	—
Ivory Coast.....	2,487	691	2,530	1,469	414	—	2,198	2,198	—
Japan.....	16,119	57,349	33,251	15,761	20,900	14,195	677	11	693
All other.....	48,890	69,363	82,745	35,168	26,372	19,914	1,068	826	641
Total.....	95,917	166,840	180,345	113,591	97,945	72,113	54,534	15,304	12,346
Unit value (per pound)									
France.....	\$0.18	\$0.41	\$0.50	\$0.50	\$0.40	\$0.37	\$0.40	\$0.40	\$0.40
Brazil.....	.44	.40	.53	.49	.39	.38	.36	.36	.40
Venezuela.....	.21	.29	.53	.45	.38	.36	.38	.37	.37
Ecuador.....	.28	.38	—	—	.28	.31	.16	.08	—
Ghana.....	.20	.38	.49	.50	.41	.40	.40	—	.40
Panama.....	.41	.49	.52	.47	.34	.31	.28	.27	.36
Seychelles.....	—	—	—	—	—	—	.34	.26	.40
Solomon Islands...	.35	.56	.56	—	.43	—	.40	—	—
Ivory Coast.....	.53	.55	.60	.52	.26	—	.40	.40	—
Japan.....	.26	.51	.50	.41	.35	.31	.36	.73	.84
All other.....	.29	.47	.51	.43	.35	.37	.33	.39	.26
Average.....	.29	.47	.52	.46	.37	.35	.32	.24	.40

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table. 52—Canned tuna: U.S. imports for consumption, by principal sources, 1979-85, January-March 1985, and January-March, 1986

Source	1979	1980	1981	1982	1983	1984	1985	January-March—	
								1985	1986
Quantity (1,000 pounds)									
Thailand.....	4,844	6,405	10,315	18,667	39,930	89,685	122,666	40,902	54,508
Taiwan.....	12,282	15,947	15,771	10,704	18,710	17,935	23,472	5,908	9,924
Japan.....	28,366	24,794	21,271	26,481	20,387	26,855	23,703	11,681	4,749
Philippines.....	6,998	13,777	21,451	27,631	32,018	22,225	30,797	7,379	9,473
Ecuador.....	1	0	0	0	0	890	5,175	1,367	1,297
Malaysia.....	292	66	696	755	3,083	1,608	3,878	1,186	1,128
Indonesia.....	0	0	146	595	2,634	2,222	1,388	578	201
Venezuela.....	0	0	0	0	0	3	923	0	2,363
Singapore.....	0	28	65	120	332	59	729	63	390
Spain.....	336	146	170	120	133	214	336	47	51
All other.....	585	2,390	967	2,506	5,102	617	882	292	1,282
Total.....	53,704	63,553	70,852	87,579	122,329	162,313	213,949	69,403	85,366
Value (1,000 dollars)									
Thailand.....	5,135	8,875	15,400	22,711	43,259	89,253	111,852	38,355	51,250
Taiwan.....	14,103	23,316	24,631	14,366	22,772	22,475	29,801	7,866	11,590
Japan.....	37,055	42,015	36,453	38,561	24,643	29,186	28,142	12,477	6,619
Philippines.....	7,319	20,043	30,504	31,085	32,291	20,396	25,930	6,267	8,141
Ecuador.....	1	-	-	-	-	837	4,676	1,170	1,189
Malaysia.....	314	76	1,230	1,242	4,068	1,893	4,498	1,321	1,539
Indonesia.....	-	-	209	699	2,679	2,102	1,186	542	174
Venezuela.....	-	-	-	-	-	7	851	-	1,989
Singapore.....	-	38	91	141	386	44	671	54	342
Spain.....	501	367	402	300	268	376	560	88	117
All other.....	643	2,254	1,438	4,242	6,958	701	972	323	1,012
Total.....	65,071	97,254	110,358	113,347	137,324	167,270	209,139	68,463	84,232
Unit value (per pound)									
Thailand.....	\$1.06	\$1.39	\$1.49	\$1.22	\$1.08	\$1.00	\$0.91	\$0.94	\$0.94
Taiwan.....	1.15	1.46	1.56	1.34	1.22	1.25	1.27	1.33	1.17
Japan.....	1.31	1.69	1.71	1.46	1.21	1.09	1.19	1.07	1.39
Philippines.....	1.05	1.45	1.42	1.12	1.01	.92	.84	.85	.86
Ecuador.....	1.51	-	-	-	-	.94	.90	.86	.92
Malaysia.....	1.08	1.14	1.77	1.64	1.32	1.18	1.16	1.11	1.36
Indonesia.....	-	-	1.43	1.18	1.02	.95	.85	.94	.87
Venezuela.....	-	-	-	-	-	2.30	.92	-	.84
Singapore.....	-	1.36	1.41	1.17	1.16	.76	.92	.86	.88
Spain.....	1.49	2.52	2.36	2.50	2.02	1.75	1.67	1.87	2.29
All other.....	1.10	.94	1.49	1.69	1.36	1.14	1.10	1.11	.79
Average.....	1.21	1.53	1.56	1.29	1.12	1.03	.98	.99	.99

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 53.—Canned tuna: U.S. imports for consumption, by pack, 1979–85, January–March 1985, and January–March, 1986

Pack	1979	1980	1981	1982	1983	1984	1985	January–March—	
								1985	1986
Quantity (1,000 pounds)									
In water.....	53,077	63,107	70,583	87,365	122,132	162,035	213,646	69,342	84,992
In oil.....	627	446	268	213	197	277	303	62	374
Total.....	53,704	63,553	70,852	87,579	122,329	162,313	213,949	69,403	85,366
Value (1,000 dollars)									
In water.....	64,330	96,685	109,783	112,853	136,906	166,776	208,580	68,347	83,656
In oil.....	741	569	576	493	418	494	560	116	576
Total.....	65,071	97,254	110,358	113,347	137,324	167,270	209,139	68,463	84,232
Unit value (per pound)									
In water.....	\$1.21	\$1.53	\$1.56	\$1.29	\$1.12	\$1.03	\$0.98	\$0.99	\$0.98
In oil.....	1.18	1.28	2.15	2.31	2.12	1.78	1.85	1.87	1.54
Average.....	1.21	1.53	1.56	1.29	1.12	1.03	.98	.99	.99

Source: Compiled from official statistics of the U.S. Department of Commerce.

Note.—Because of rounding, figures may not add to the totals shown.

Table 54.—Frozen tuna: U.S. imports by major sources, share of imports by sources, rates of growth, and suppliers' rank, 1979 and 1985

Source	U.S. imports		Share of imports		Rank		Rate of growth, 1985 over 1979 Percent
	1979	1985	1979	1985	1979	1985	
	1,000 pounds		Percent				
Ecuador.....	37,773	55,602	6	14	7	1	47
Japan.....	116,697	53,832	18	13	1	2	-54
Venezuela.....	11,169	53,487	2	13	1/	3	379
Panama.....	56,626	39,151	9	10	4	4	-31
Taiwan.....	44,156	38,124	7	9	6	5	-14
Brazil.....	869	30,558	1/	8	1/	6	342
France.....	8,891	30,264	1	7	1/	7	240
Total.....	276,182	301,015	43	74	-	-	9
All other.....	361,309	104,498	57	26	-	-	-71
Grand total...	637,491	405,513	100	100	-	-	-36

1/ Less than tenth

Source: Compiled from official statistics of the U.S. Department of Commerce.

Note.—Because of rounding, figures may not add to the totals shown.

Table 55.—Canned tuna: U.S. imports from major suppliers, share of imports by supplier, rate of growth, and suppliers' rank, 1979 and 1985

Source	U.S. imports		Share of imports		Rank		Rate of growth, 1985 over 1979
	1979	1985	1979	1985	1979	1985	
	1,000 pounds		Percent				Percent
Thailand.....	4,844	122,666	9	57	4	1	2,432
Philippines...	6,998	30,797	13	14	3	2	340
Japan.....	28,366	23,703	53	11	1	3	-16
Taiwan.....	12,282	23,472	23	11	2	4	91
Ecuador.....	0	5,175	1/	2	1/	5	2/
Malaysia.....	292	3,879	1	2	6	6	1,224
Indonesia.....	0	1,338	1/	1	1/	7	2/
Total.....	52,783	211,079	98	99	—	—	300
All other.....	921	2,870	2	1	—	—	212
Grand total...	53,704	213,949	100	100	—	—	298

1/ Less than tenth.

2/ Not meaningful.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Note.—Because of rounding, figures may not add to the totals shown.

Table 56.—Frozen tuna: Thai imports, by major sources, 1981-85

(In thousands of tons)					
Source	1981	1982	1983	1984	1985
United States.....	0	0	0	33	42
Japan.....	0	17	17	55	39
France.....	0	0	0	0	17
Indonesia.....	2	6	7	9	15
Maldives.....	3	7	10	13	14
All other.....	0	0	3	0	6
Total.....	5	30	37	110	133

Source: Estimates by Thai processors, submitted by Thai Food Processors' Association.

Table 57.—Frozen tuna: Philippine production, imports, exports, and apparent consumption, 1979-85

Year	Production	Imports	Exports	Apparent consumption
		1,000 tons		
1979.....	104	<u>1/</u>	39 <u>2/</u>	<u>1/</u>
1980.....	87	<u>1/</u>	54 <u>2/</u>	<u>1/</u>
1981.....	105	3	40	68
1982.....	114	2	20	96
1983.....	131	0	21	110
1984.....	115	2	15	101
1985 <u>2/</u>	117	0	13	104

1/ Not available.

2/ Estimate.

Source: Food and Agriculture Organization of the United Nations

Table 58.—Canned tuna: Philippine production, imports, exports, and apparent consumption, 1979-85

(In thousands of tons)

Year	Production	1/ Imports	Exports	Apparent consumption
1979.....	4	<u>2/</u>	4	0
1980.....	12	<u>2/</u>	12	0
1981.....	20	0	20	0
1982.....	21	0	21	0
1983.....	26	<u>2/</u>	26	0
1984.....	25	<u>2/</u>	25	0
1985.....	24	<u>2/</u>	24	0

1/ Estimated by the Food and Agriculture Organization of the United Nations.

2/ Less than 55 tons.

Source: U.S. Department of State; official statistics of the Government of the Philippines, except as noted.

Table 59.—Frozen tuna: Philippine imports and exports, by sources or markets, 1979-85

(In thousands of tons)

Source/market	1979	1980	1981	1982	1983	1984	1985
Imports:							
Indonesia.....	<u>1/</u>	<u>1/</u>	<u>1/</u>	0.3	0	1.3	0
Total <u>2/</u>	<u>1/</u>	<u>1/</u>	3.3	2.2	0	2.2	0
Exports:							
Japan.....	2.2	2.2	3.4	4.6	4.5	6.5	6.8
Italy.....	3.9	13.8	9.4	5.3	6.8	6.7	1.9
United States.....	26.3	29.0	20.4	4.4	3.9	.6	.1
Total.....	39.1	53.7	39.1	16.4	15.6	13.9	13.1

1/ Not available.2/ Source: Food and Agriculture Organization of the United Nations.

Source: U.S. Department of State; official statistics of the Government of the Philippines, except as noted.

Table 60.—Canned tuna: Philippine imports and exports, by sources or markets

1979-85

(In thousands of tons)

Source/market	1979	1980	1981	1982	1983	1984	1985
Imports:							
Canada.....	0	0	0	0	0	0	14
United States.....	.3	9	0	0	2	3	2
Total.....	.3	9	0	0	3	3	16
Exports:							
United States.....	3,539	9,055	11,791	14,604	14,998	11,267	16,670
W. Germany.....	148	2,100	3,295	2,994	3,650	5,249	4,372
United Kingdom.....	1/	215	1,462	1,508	3,360	3,361	2,635
Canada.....	15	14	1,859	1,397	1,973	2,266	2,786
Other.....	793	904	1,465	888	1,957	2,757	1,602
Total.....	4,495	12,288	19,872	21,391	25,938	24,900	28,065

1/ Less than 0.5 ton.

Source: U.S. Department of State; official statistics of the Government of the Philippines, except as noted.

Table 61.—Tuna: Taiwan catch, by species, 1979-84

Species	1979	1980	1981	1982	1983	1984
Quantity (tons)						
Albacore.....	65,040	62,343	55,063	73,437	64,321	61,802
Yellowfin.....	37,614	35,177	28,133	25,975	29,804	29,715
Bigeye.....	13,289	15,481	11,563	10,550	16,822	15,300
Young 1/.....	5,766	7,746	5,444	8,627	9,666	11,353
Bluefin.....	229	197	285	403	356	669
Skipjack.....	3,966	3,772	3,006	3,972	3,355	2,097
Total.....	125,904	124,716	103,494	122,964	124,324	120,936
Quantity (1,000 pounds)						
Albacore.....	130,080	124,686	110,126	146,874	128,642	123,604
Yellowfin.....	75,228	70,354	56,266	51,950	59,608	59,430
Bigeye.....	26,578	30,962	23,126	21,100	33,644	30,600
Young 1/.....	11,532	15,492	10,888	17,254	19,332	22,706
Bluefin.....	458	394	570	806	712	1,338
Skipjack.....	7,932	7,544	6,012	7,944	6,710	4,194
Total.....	251,808	249,432	206,988	245,928	248,648	241,872
Value (1,000 dollars)						
Albacore.....	90,007	108,391	109,994	116,097	85,247	97,409
Yellowfin.....	58,409	57,407	60,787	61,025	67,644	72,022
Bigeye.....	18,312	25,280	22,994	18,172	31,744	37,160
Young 1/.....	4,693	7,288	6,300	6,970	8,282	9,904
Bluefin.....	204	216	426	592	719	2,487
Skipjack.....	1,982	2,606	2,687	3,517	2,794	1,554
Total.....	173,517	201,138	203,188	206,373	196,430	220,536
Unit value (per ton)						
Albacore.....	\$1,384	\$1,738	\$1,998	\$1,581	\$1,325	\$1,576
Yellowfin.....	1,553	1,632	2,161	2,349	2,270	2,424
Bigeye.....	1,378	1,633	1,989	1,722	1,887	2,429
Young 1/.....	814	941	1,157	808	857	872
Bluefin.....	891	1,096	1,495	1,469	2,020	3,717
Skipjack.....	477	691	894	885	833	741
Average....	1,378	1,613	1,963	1,678	1,580	1,824
Unit value (per pound)						
Albacore.....	\$0.69	\$0.87	\$1.00	\$0.79	\$0.66	\$0.79
Yellowfin.....	.78	.82	1.08	1.17	1.13	1.21
Bigeye.....	.69	.82	.99	.86	.94	1.21
Young 1/.....	.14	.47	.58	.40	.43	.44
Bluefin.....	.45	.55	.75	.73	1.01	1.86
Skipjack.....	.24	.35	.45	.44	.42	.37
Average....	.69	.81	.98	.84	.79	.91

1/ This category is believed to include small tuna of various species.

Source: Fisheries Yearbook, Taiwan Area, various issues, Taiwan Fisheries Bureau.

Note.—Data converted from metric tons and New Taiwan dollars. Exchange rates used in value conversions were obtained from the Central Bank of China, Financial Statistics, various issues, and are as follows (NTD/US): 1979—36.048; 1980—36.015; 1981—36.849; 1982—39.124; 1983—40.065; 1984—39.597.

Table 62.—Tuna: Taiwan catch, by sector, 1979-84

Sector	1979	1980	1981	1982	1983	1984
Quantity (1,000 pounds)						
Deepsea.....	182,174	168,202	1/	190,610	192,646	185,636
Inshore.....	67,066	52,742	1/	53,684	53,492	53,710
Coastal.....	2,506	1,492	1/	1,572	2,444	2,456
Total.....	251,746	235,860	1/	245,866	248,582	241,802
Quantity (tons)						
Deepsea.....	91,087	84,101	1/	95,305	96,323	92,818
Inshore.....	33,533	26,373	1/	26,842	26,746	26,855
Coastal.....	1,253	746	1/	786	1,222	1,228
Total.....	125,873	111,220	1/	122,933	124,291	
Value (1,000 dollars)						
Deepsea.....	122,230	142,557	1/	149,563	139,255	156,581
Inshore.....	50,410	40,609	1/	55,944	55,854	61,421
Coastal.....	869	895	1/	866	1,321	1,031
Total.....	173,517	184,061	1/	206,373	196,430	219,033

1/ Not available.

Source: Fisheries Yearbook, Taiwan Area, various issues, Taiwan Fisheries Bureau.

Note.—Data converted from metric tons and New Taiwan dollars. Exchange rates used in value conversions were obtained from the Central Bank of China, Financial Statistics, various issues, and are as follows (NTD/US): 1979—36.048; 1980—36.015; 1981—36.849; 1982—39.124; 1983—40.065; 1984—39.597.

Table 63.—Cantered tuna: Taiwan production, by type, 1979–84

Type	1979	1980	1981	1982	1983	1984
Quantity (1,000 pounds)						
Tunas.....	11,878	11,878	1/	10,602	25,201	9,610
Bonitos and skipjacks.....	9,683	5,187	1/	3,898	4,777	8,503
Total.....	21,561	17,065	1/	14,500	29,978	18,113
Quantity (1,000 standard cases)						
Tunas.....	609	609	1/	544	1,292	493
Bonitos and skipjacks.....	497	266	1/	200	245	436
Total.....	1,106	875	1/	744	1,537	929
Value (1,000 dollars)						
Tunas.....	8,535	9,844	1/	16,029	13,535	14,678
Bonitos and skipjacks.....	4,506	3,257	1/	1,470	1,283	3,670
Total.....	13,041	13,101	1/	17,499	14,818	18,348
Unit value (per pound)						
Tunas.....	\$0.72	\$0.83	1/	\$1.51	\$0.54	\$1.53
Bonitos and Skipjacks.....	.47	.63	1/	.38	.27	.43
Total.....	.60	.77	1/	1.21	.49	1.01
Unit value (per standard case)						
Tunas.....	\$14.01	\$16.16	1/	\$29.47	\$10.48	\$29.77
Bonitos and Skipjacks.....	9.07	12.24	1/	7.35	5.24	8.42
Total.....	11.79	14.97	1/	23.52	9.64	19.75

1/ Not available.

Source: Fisheries Yearbook, Taiwan Area, various issues, Taiwan Fisheries Bureau.

Note.—Data converted from metric tons and New Taiwan dollars. Exchange rates used in value conversions were obtained from the Central Bank of China, Financial Statistics, various issues, and are as follows (NTD/US): 1979—36.048; 1980—36.015; 1981—36.849; 1982—39.124; 1983—40.065; 1984—39.597.

Table 64.—Japanese tuna harvesting vessels: Fleet size, by gear type and tonnage class, selected years, 1970–83.

	Tonnage class (gross tons)					
Gear type/year	20-30	30-50	50-100	100-200	200-500	Total
Pole-and-line:						
1970.....	2	218	91	140	61	512
1975.....	9	86	283	39	279	696
1980.....	0	13	350	9	197	569
1981.....	0	9	353	6	178	546
1982.....	0	10	320	6	137	437
1983.....	0	12	296	10	115	433
Longline:						
1970.....	5	379	381	183	601	1549
1975.....	4	102	577	88	640	1411
1980.....	0	56	715	103	641	1515
1981.....	0	55	706	100	657	1428
1982.....	0	43	634	90	587	1354
1983.....	0	38	589	93	547	1267
Purse seine: 1/						
1970.....	2/	2/	2/	2/	2/	10
1975.....	2/	2/	2/	2/	2/	10
1980.....	2/	2/	2/	2/	2/	13
1981.....	2/	2/	2/	2/	2/	24
1982.....	2/	2/	2/	2/	2/	33
1983.....	2/	2/	2/	2/	2/	33

1/ Excludes coastal vessels and "group" vessels; a group purse seiner actually consists of four vessels: a harvesting vessel, a netting boat, and two fish carriers.

2/ Not available; the average Japanese purse seiner is of 500 gross tons.

Source: Norio Fujinami, Japanese Ministry of Agriculture, Forestry, and Fisheries, "Tuna Fisheries Development of Japan" (a paper presented to the INFOFISH Tuna Trade Conference, Bangkok, February 27, 1986), tables 5, 6, and 7.

Table 65.—Profit-and-loss data for an average Japanese tuna longliner, 1983.

Item	Yen	Dollars 1/
Gross revenue.....	425,585,000	1,788,172
Operating expenses:		
Labor.....	159,697,000	670,996
Vessel.....	24,307,000	102,130
Gear.....	9,320,000	39,160
Oil.....	102,976,000	432,672
Bait.....	30,408,000	127,765
Ice.....	99,000	416
Fish containers.....	7,000	29
Food and provisions....	3,690,000	15,504
Charterage, etc.....	6,870,000	28,866
Marketing charge.....	12,636,000	53,092
Communications.....	12,619,000	53,021
Other operating expenses.....	48,258,000	202,765
Total.....	410,887,000	1,726,416
Fixed expenses:		
Vessel depreciation....	34,501,000	144,962
Gear depreciation.....	3,885,000	16,324
Other.....	1,049,000	4,408
Total.....	39,435,000	165,693
Total expenses.....	450,322,000	1,892,109
Net income.....	(24,737,000)	(103,937)
As share of sales.....	(5.8 percent)	
Average gross tons.....	305	
Trip days.....	400	
Fishing days.....	254	
Number of crew.....	20	

1/ Assumes a 1983 exchange rate of 238 yen to 1 dollar.

Source: U.S. Embassy, Tokyo, cablegram 12075, June 20, 1986; official data of the Government of Japan.

Table 66.—Tuna: Japanese landings, by types and species, 1981-85

(In thousands of pounds)					
Type and species	1981	1982	1983	1984	1985 1/
Frozen.....	1,036,162	833,339	1,097,891	1,194,893	1,102,300
Fresh:					
Skipjack.....	112,435	145,504	154,763	259,922	102,734
Yellowfin.....	41,887	30,864	40,124	43,431	54,674
Albacore.....	41,887	59,524	32,849	42,769	29,101
Bigeye.....	22,046	22,046	21,826	28,660	23,810
Bluefin.....	46,297	44,092	25,573	5,071	5,512
Total,					
fresh.....	264,552	302,030	275,355	379,853	215,830
Grand total...	1,300,714	1,135,369	1,373,245	1,574,746	1,318,130

1/ Preliminary. Data for fresh tuna cover the period January–November.

Source: Food and Agriculture Organization of the United Nations, Infofish.

Note.—Because of rounding, figures may not add to the totals shown.

Table 67.—Fresh tuna: Japanese production, imports, exports, and apparent consumption, 1981-85

Year	Production (landings)	Imports	Exports	Apparent consumption	Ratio of imports to consumption	Ratio of exports to production
		—1,000 pounds—			—Percent—	
1981...	264,552	0	22,046	242,506	0	8
1982...	302,032	0	2,205	299,827	0	1
1983...	275,355	0	26,455	248,900	0	10
1984...	379,853	0	33,069	346,784	0	9
1985...	215,830	1/	1/	1/	1/	1/

1/ Not available.

Source: Food and Agriculture Organization of the United Nations, Infofish.

Note.—Because of rounding, figures may not add to the totals shown.

Table 68.—Frozen tuna: Japanese production, imports, exports, and apparent consumption, 1981-85

Year	Production (landings)	Imports	Exports	Apparent consumption	Ratio of imports to consumption	Ratio of exports to production
		—1,000 pounds—			—Percent—	
1981...	1,036,162	222,665	79,366	1,179,461	19	8
1982...	833,339	279,984	88,184	1,025,139	27	11
1983...	1,097,891	313,053	97,002	1,313,942	24	9
1984...	1,194,893	244,711	163,140	1,276,464	19	14
1985...	1,102,300	326,281	88,184	1,340,397	24	8

Source: Food and Agriculture Organization of the United Nations, Infofish.

Note.—Because of rounding, figures may not add to the totals shown.

Table. 69—Fresh, chilled, or frozen tuna: Japanese imports, by principal sources, 1979-85

Source	1979	1980	1981	1982	1983	1984	1985
Quantity (1,000 pounds)							
Republic of							
Korea.....	128,515	104,057	110,118	109,647	132,084	98,227	104,732
Taiwan.....	53,600	51,247	51,873	60,108	76,873	62,173	69,395
United States.....	1,927	1,036	1,017	997	2,422	2,343	24,694
Panama.....	10,975	11,664	9,073	9,741	8,421	12,490	18,362
All other.....	30,289	18,990	36,364	90,141	77,845	62,633	101,463
Total.....	225,306	186,994	208,445	270,634	297,645	237,866	318,646
Value (1,000 dollars)							
Republic of							
Korea.....	163,698	114,646	148,315	144,152	132,035	143,924	132,084
Taiwan.....	72,875	78,257	86,292	94,039	105,341	101,590	108,567
United States.....	6,551	4,164	3,916	3,180	8,438	11,713	25,493
Panama.....	14,620	13,707	12,715	11,958	8,127	15,545	23,239
All other.....	20,627	18,055	32,239	60,584	65,674	146,194	100,495
Total.....	278,371	228,829	283,477	313,913	319,615	353,292	389,878

Source: Compiled from statistics published by the Japan Tariff Association.

Table 70.—Canned tuna: Japanese production, imports, exports, and apparent consumption, 1981-85

Year	Production	Imports	Exports	Apparent consumption	Ratio of	Ratio of
					imports to consumption	exports to production
			<u>1,000 pounds</u>		<u>Percent</u>	
1981...	244,711	2,205	77,161	169,755	1	32
1982...	249,120	4,409	79,366	174,163	3	32
1983...	257,938	4,409	81,570	180,777	2	32
1984...	273,370	2,205	101,412	174,163	1	37
1985...	251,324	2,205	77,161	176,368	1	30

Source: Food and Agriculture Organization of the United Nations, Infofish.

Note.—Because of rounding, figures may not add to the totals shown.

Table. 71—Canned tuna: Japanese exports, by principal markets, 1979-85

Market	1979	1980	1981	1982	1983	1984	1985
Quantity (1,000 pounds)							
United States.....	27,361	27,559	18,944	29,273	19,000	29,469	18,869
Canada	9,495	7,236	6,047	7,329	9,301	11,393	9,120
United Kingdom....	8,714	8,524	10,923	7,643	4,217	15,201	4,594
All other.....	38,504	40,919	40,984	34,398	48,842	44,428	42,225
Total.....	84,074	84,238	76,898	78,643	81,360	100,491	74,808
Value (1,000 dollars)							
United States.....	35,929	46,910	32,490	40,747	22,690	31,447	28,782
Canada.....	16,566	14,162	13,086	13,371	14,812	17,234	16,408
United Kingdom....	13,027	15,652	19,454	10,362	6,983	16,135	6,099
All other.....	55,570	76,570	80,020	53,101	66,211	56,745	63,367
Total.....	121,092	153,294	145,050	117,581	110,696	121,561	114,656

Source: Compiled from statistics published by the Japan Tariff Association.

Table 72.—Mexican eastern tropical Pacific tuna fleet: Number of vessels, by gear types and size class, and total carrying capacity, 1979–85

Year and gear type	Size class 1/						Total vessels	Total carrying capacity
	1	2	3	4	5	6		
1979:								
Seiners.....	0	0	1	4	5	15	25	14,622
Baitboats.....	0	1	1	1	0	0	3	405
Total.....	0	1	2	5	5	15	28	15,027
1980:								
Seiners.....	0	0	1	5	4	36	46	35,162
Baitboats.....	1	1	3	1	0	0	6	705
Total.....	1	1	4	6	4	36	52	35,867
1981:								
Seiners.....	0	1	2	3	4	35	45	33,358
Baitboats.....	1	3	5	1	0	0	10	1,133
Total.....	1	4	7	4	4	35	55	34,491
1982:								
Seiners.....	0	0	0	3	4	36	43	33,900
Baitboats.....	3	4	5	1	0	0	13	1,310
Total.....	3	4	5	4	4	36	56	35,210
1983:								
Seiners.....	5	1	0	2	3	38	49	36,891
Baitboats.....	1	2	5	1	0	0	9	1,045
Total.....	6	3	5	3	3	38	58	37,936
1984:								
Seiners.....	0	1	1	1	2	42	47	41,110
Baitboats.....	0	1	6	0	0	0	7	900
Total.....	0	2	7	1	2	42	54	42,010
1985:								
Seiners.....	0	0	0	1	2	50	53	50,645
Baitboats.....	0	2	9	1	0	0	12	1,608
Total.....	0	2	9	2	2	50	65	52,253

1/ Size categories are based on tuna carrying capacity and are as follows: class 1, less than 51 tons; class 2, 51–100 tons; class 3, 101–200 tons; class 4, 201–300 tons; class 5, 301–400 tons; class 6, 401 or more tons.

Source: Various annual reports of the Inter-American Tropical Tuna Commission.

Table 73.—Selected Mexican economic indicators, 1979-85

Item	1979	1980	1981	1982	1983	1984	1985
Producer Price Index (1979=100)...	100.0	124.5	154.9	241.8	501.4	854.2	1,237.3 <u>1/</u>
Interest rate (lending, percent per annum)...	19.9	28.1	36.6	46.0	63.0	54.7	<u>2/</u>
External debt (disbursed, billions of dollars).....	36.7	49.3	74.9	84.9	90.6	93.7	96.4
Real exchange rate index (U.S. dollars per peso)...	100.0	108.4	115.7	76.9	74.0	88.1	83.8 <u>1/</u>

1/ January-September.

2/ Not available.

Source: Producer price index, interest rates, and real exchange rate index from International Financial Statistics; external debt from the Inter-American Development Bank and the U.S. International Trade Commission, OTAP report, various issues.

Table 74.—Mexican frozen tuna: Catch, by state, 1983 and 1984

State	1983		1984	
	Catch	Share of total	Catch	Share of total
	<u>1,000</u> <u>pounds</u>	<u>Percent</u>	<u>1,000</u> <u>pounds</u>	<u>Percent</u>
Baja California.....	34,286	42	84,282	49
Sinaloa.....	7,765	9	33,226	19
Baja California Sur.....	8,316	10	19,991	12
Veracruz.....	1,310	2	2,269	1
All other.....	955	1	619	1/
Foreign ports 2/.....	29,211	36	31,837	18
Total.....	81,843	100	172,224	100

1/ Less than 0.5 percent.

2/ Represents tuna landed by Mexican vessels in foreign ports.

Source: Derived from data contained in various issues of Anuario Estadísticos de Pesca, Secretaría de Pesca.

Note.—Because of rounding, figures may not add to the totals shown.

Table 75.—Mexican frozen tuna: Catch, by species, 1979-84

Species	1979	1980	1981	1982	1983	1984
Quantity (1,000 pounds)						
Yellowfin.....	57,897	45,011	103,056	50,699	54,059	126,588
Skipjack.....	14,870	29,240	56,903	40,185	27,758	45,745
Total.....	72,767	74,251	159,959	90,884	81,817	172,333
Value (1,000 dollars)						
Yellowfin.....	24,656	24,871	55,431	14,131	22,900	44,142
Skipjack.....	5,425	13,252	30,931	10,249	7,934	12,302
Total.....	30,081	38,123	86,362	24,380	30,834	56,444
Unit value (per pound)						
Yellowfin.....	\$0.43	\$0.55	\$0.54	\$0.28	\$0.42	\$0.35
Skipjack.....	.36	.45	.54	.26	.29	.27
Total.....	.41	.51	.54	.27	.38	.33
Unit value (per ton)						
Yellowfin.....	\$852	\$1,105	\$1,076	\$557	\$847	\$697
Skipjack.....	730	906	1,087	510	572	538
Average....	827	1,027	1,080	537	754	655

Source: Derived from data contained in various issues of Anuario Estadísticos de Pesca, Secretaría de Pesca.

Note.—Unit values calculated using unrounded data.

Table 76.—Mexican frozen tuna: Catch, by sectors, 1979-84

Sector	1979	1980	1981	1982	1983	1984
Quantity (1,000 pounds)						
Private.....	30,159	32,860	118,775	55,003	62,714	116,024
Public.....	7,943	11,790	12,033	17,165	7,048	31,116
Cooperative....	34,661	29,601	29,154	18,717	12,079	25,194
Total.....	71,763	74,251	159,962	90,885	81,841	172,334
Share of total (percent)						
Private.....	41	44	74	61	77	67
Public.....	11	16	8	19	9	18
Cooperative....	48	40	18	21	15	15
Total.....	100	100	100	100	100	100

Source: Derived from data contained in various issues of Anuario Estadísticos de Pesca, Secretaría de Pesca.

Table 77.—Mexican canned tuna: Total plants, operating plants, raw material used, and production, by sectors, 1979-84

Sector and year	Total plants		Operating plants		Raw material	Production	
	Number	Capacity 1/	Number	Capacity 1/	used		
		Tons		Tons	Tons	Tons	1,000 pounds
Public:							
1979...	2/	2/	2/	2/	18,479	8,942	17,884
1980...	8	309.7	8	309.7	24,198	11,113	22,226
1981...	9	316.4	9	316.4	35,606	15,713	31,426
1982...	9	272.3	9	272.3	23,124	9,991	19,982
1983...	11	289.1	10	282.5	20,390	8,972	17,994
1984...	10	335.1	10	335.1	37,314	16,045	32,090
Private:							
1979...	2/	2/	2/	2/	14,846	7,241	14,482
1980...	9	133.4	8	132.8	9,950	4,896	9,792
1981...	9	133.4	9	133.4	15,014	6,626	13,252
1982...	7	179.7	6	177.5	10,634	4,667	9,334
1983...	7	179.7	4	166.4	6,103	2,625	5,250
1984...	10	323.0	8	295.4	19,935	8,574	17,148
Total:							
1979...	2/	2/	2/	2/	33,325	16,183	32,366
1980...	17	443.1	16	442.5	34,148	16,009	32,018
1981...	18	449.8	18	449.8	50,620	22,339	44,678
1982...	17	452.0	16	449.8	33,758	14,658	29,316
1983...	18	468.8	14	448.9	26,493	11,597	23,194
1984...	20	658.1	18	630.5	57,249	24,619	49,238

1/ Per 8 hours.

2/ Not available.

Source: Derived from data contained in various issues of Anuario Estadísticos de Pesca, Secretaría de Pesca.

Table 78.—Mexican canned tuna: Number of operating plants, operating capacity, and production, by State, 1979-84

State	1979	1980	1981	1982	1983	1984
Number of operating plants						
Baja California.....	1/	6	7	6	6	8
Sinaloa.....	1/	3	3	3	3	4
Baja California Sur...	1/	2	2	2	4	4
Veracruz.....	1/	3	3	2	1	1
Sonora.....	1/	1	1	1	0	1
Nayarit.....	1/	0	1	1	0	0
Campeche.....	1/	1	1	0	0	0
Total.....	1/	16	18	16	14	18
Operating capacity (short tons of frozen tuna) 2/						
Baja California.....	1/	287.1	287.7	309.7	309.7	306.4
Sinaloa.....	1/	30.9	30.9	30.9	30.9	111.3
Baja California Sur...	1/	88.2	88.2	77.2	94.0	181.9
Veracruz.....	1/	28.7	28.7	19.8	14.3	8.8
Sonora.....	1/	5.5	5.5	5.5	0	22.0
Nayarit.....	1/	0	6.6	6.6	0	0.0
Campeche.....	1/	2.2	2.2	2.2	0	0.0
Total.....	1/	442.6	449.7	449.7	449.0	630.5
Production (1,000 pounds, product weight)						
Baja California.....	12,232	11,981	14,532	9,069	7,213	13,492
Sinaloa.....	1,425	1,515	4,062	3,407	1,835	5,671
Baja California Sur...	2,076	2,037	2,883	1,372	2,078	4,626
Veracruz.....	396	238	748	785	470	825
Sonora.....	10	205	87	18	0	4
Nayarit.....	0	0	24	8	0	0
Campeche.....	44	34	3	0	0	0
Average.....	16,183	16,009	22,339	14,658	11,597	24,619

1/ Not available.

2/ Per 8 hours.

Source: Derived from data contained in various issues of Anuario Estadísticos de Pesca, Secretaría de Pesca.

Note.—Because of rounding, figures may not add to totals shown.

Table 79.—Mexican canned tuna: Production, and share of production, by sector, 1979-84

Year	Production			Share of production		
	Public sector	Private sector	Total	Public sector	Private sector	Total
	—Short tons—			—Percent—		
1979.....	8,942	7,241	16,183	55	45	100
1980.....	11,113	4,896	16,009	69	31	100
1981.....	15,713	6,626	22,339	70	30	100
1982.....	9,991	4,667	14,658	68	32	100
1983.....	8,972	2,625	11,597	77	23	100
1984.....	16,045	8,574	24,619	65	35	100
—1,000 pounds—						
1979.....	17,884	14,482	32,366			
1980.....	22,226	9,792	32,018			
1981.....	31,426	13,252	44,678			
1982.....	19,982	9,334	29,316			
1983.....	17,944	5,250	23,194			
1984.....	32,090	17,148	49,238			

Source: Derived from data contained in various issues of Anuario Estadísticos de Pesca, Secretaría de Pesca.

Table 80.—Mexican canned tuna: Operating plants' capacity, raw material used, and capacity utilization, by sector, 1980-84

Sector and year	Operating plants' capacity 1/ <u>Short tons</u>	Raw material used <u>Short tons</u>	Capacity utilization <u>Percent</u>
Public:			
1980.....	77,425	24,198	31
1981.....	79,100	35,606	45
1982.....	68,075	23,124	34
1983.....	70,625	20,390	29
1984.....	83,775	37,314	45
Private:			
1980.....	33,200	9,950	30
1981.....	33,350	15,014	45
1982.....	44,375	10,634	24
1983.....	41,600	6,103	15
1984.....	73,850	19,935	27
Total:			
1980.....	110,625	34,148	31
1981.....	112,450	50,620	45
1982.....	112,450	33,758	30
1983.....	112,225	26,493	24
1984.....	157,625	57,249	36

1/ Calculated by multiplying tons of raw tuna used per one 8-hour shift per day by 250 work days.

Source: Derived from data contained in various issues of Anuario Estadísticos de Pesca, Secretaría de Pesca.

Table 81.—Credit granted by the Mexican banking system to the fisheries, by types of banks, fisheries sectors, and fisheries activities, 1979-84 ^{1/}

(In millions of dollars ^{2/})								
Year and banking system ^{3/}	Fisheries sector			Fisheries activity				Total
	Private and cooperatives	Public	Total	Fisheries development	Marine products industrial-ization	Vessel construction and repair	Other ^{4/}	
1979:								
Commercial..	76.0	48.1	124.1	98.6	20.5	4.7	0.2	124.1
National....	86.4	56.1	142.5	91.3	3.6	47.7	0	142.6
Total.....	162.4	104.2	266.6	189.9	24.1	52.4	.2	266.7
1980:								
Commercial..	108.7	76.0	184.7	139.0	35.0	10.2	.4	184.6
National....	78.8	26.2	105.0	77.4	1.0	26.6	0	105.0
Total.....	187.5	102.2	289.7	216.4	36.0	36.8	.4	289.6
1981:								
Commercial..	96.8	71.8	168.6	116.7	45.5	6.0	.4	168.6
National....	5/	5/	5/	5/	5/	5/	5/	5/
Total.....	5/	5/	5/	5/	5/	5/	5/	5/
1982:								
Commercial..	81.5	145.7	227.2	166.2	38.4	22.3	.3	227.2
National....	2.4	50.7	53.1	0.3	16.1	36.7	0	53.1
Total.....	83.9	196.4	280.3	166.5	54.5	59.0	.3	280.3
1983:								
Commercial..	55.3	120.9	176.2	29.1	114.0	32.8	.3	176.2
National....	1.4	27.5	28.9	.3	2.0	26.6	0	28.9
Total.....	56.7	148.4	205.1	29.4	116.0	59.4	.3	205.1
1984:								
Commercial..	80.5	121.0	201.5	38.4	128.0	34.9	.3	201.6
National....	1.7	35.4	37.1	.2	14.7	22.1	0	37.0
Total.....	82.2	156.4	238.6	38.6	142.7	57.0	.3	238.6

^{1/} As of the last day of the year.

^{2/} Pesos were converted to dollars using the following exchange rates (from International Financial Statistics):

1979—22.31; 1980—22.95; 1981—24.51; 1982—56.40; 1983—120.09; 1984—167.83.

^{3/} Commercial refers to private and mixed banks and National refers to government banks, including Banpesca, Nacional Financiera, and Banco Nacional de Comercio Exterior.

^{4/} Includes mainly the construction of ice plants.

^{5/} Not available.

Source: Derived from data contained in various issues of Anuario Estadísticos de Pesca.

Note: Because of rounding, figures may not add to the totals shown.

Table 82.—Mexican tuna craft: Number of craft under construction, carrying capacity, and estimated cost, by type of craft and country of construction, as of January, 1982

Country of construction	Type of craft	Number of craft	Carrying	Estimated
			capacity	cost
			<u>Short</u>	<u>Million</u>
			<u>tons</u>	<u>dollars</u>
Spain.....	Seiner.....	21	25,200	225.0
Mexico.....	Seiner.....	14	13,200	147.8
Mexico.....	Baitboat.....	16	2,400	16.0
Italy.....	Seiner.....	7	8,400	64.5
United States.....	Seiner.....	4	5,200	32.8
Norway.....	Seiner.....	2	2,400	23.2
Canada.....	Seiner.....	<u>2</u>	<u>2,600</u>	<u>16.0</u>
Total.....		66	59,400	525.3

Source: National Marine Fisheries Service.

Table 83.—Nominal-exchange-rate equivalents of selected currencies in U.S. dollars; real-exchange-rate equivalents 1/, and producer price indicators in specified countries 2/ indexed by quarters, January 1981-March 1986 3/

Period	(January-March 1981=100)												
	U.S.	Brazil			Ecuador			France			Japan		
	Pro- ducer Price Index	Pro- ducer Price Index	Nominal- exchange- rate index	Real- exchange- rate index	Pro- ducer Price Index	Nominal- exchange- rate index	Real- exchange- rate index	Pro- ducer Price Index	Nominal- exchange- rate index	Real- exchange- rate index	Pro- ducer Price Index	Nominal- exchange- rate index	Real- exchange- rate index
1981:													
Jan.-Mar.—	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Apr.-June—	102.2	119.7	84.5	98.9	101.3	100.0	99.1	104.5	89.7	91.7	101.1	93.5	92.4
July-Sept.—	102.9	138.2	71.0	95.4	107.4	100.0	104.4	109.0	83.7	88.6	102.4	88.7	88.2
Oct.-Dec.—	102.8	160.5	60.2	94.0	108.4	100.0	105.4	111.3	86.0	93.1	102.1	91.5	90.9
1982:													
Jan.-Mar.—	103.7	188.4	51.4	93.4	114.1	100.0	110.0	114.4	81.1	89.4	102.5	88.1	87.0
Apr.-June—	103.8	227.5	44.4	97.2	117.8	86.8	98.5	117.3	77.4	87.4	102.8	84.2	83.3
July-Sept.—	104.3	269.1	37.4	96.4	126.7	75.3	91.5	119.5	70.0	80.2	103.8	79.4	79.0
Oct.-Dec.—	104.4	310.8	30.9	91.9	129.9	75.3	93.7	120.8	68.7	79.5	103.7	79.2	78.6
1983:													
Jan.-Mar.—	104.5	388.0	21.8	80.9	123.0	73.7	86.8	123.7	70.6	83.6	101.7	87.2	84.9
Apr.-June—	104.8	512.9	14.9	73.0	137.4	57.5	75.4	128.6	65.1	79.9	100.7	86.6	83.2
July-Sept.—	105.8	734.7	11.1	77.3	148.0	53.0	74.1	133.5	61.1	77.0	100.9	84.8	80.9
Oct.-Dec.—	106.4	1,035.5	8.2	79.7	151.5	48.3	68.7	138.3	59.5	77.4	100.3	87.8	82.8
1984:													
Jan.-Mar.—	107.5	1,365.1	6.2	79.0	159.5	44.3	65.8	143.1	58.5	77.9	100.4	89.0	83.1
Apr.-June—	108.2	1,813.4	4.7	78.6	165.4	41.1	62.7	147.2	58.4	79.4	100.5	89.5	83.2
July-Sept.—	107.9	2,419.7	3.5	79.4	177.4	38.1	62.6	150.4	54.2	75.6	101.1	84.4	79.1
Oct.-Dec.—	107.7	3,381.5	2.6	81.6	186.8	37.2	64.5	152.8	51.9	73.7	100.8	83.6	78.2
1985:													
Jan.-Mar.—	107.5	4,660.3	1.9	81.8	203.0	37.2	70.3	155.3	48.8	70.5	101.2	79.8	75.1
Apr.-June—	107.6	5,960.8	1.4	75.2	215.4	37.2	74.5	156.7	51.7	75.2	100.5	82.0	76.6
July-Sept.—	106.8	7,828.8	1.0	76.5	223.0	37.2	77.7	154.5	55.9	80.9	99.4	86.2	80.2
Oct.-Dec.—	107.5	11,088.4	.8	81.3	227.4	32.6	69.0	151.0	61.6	86.6	97.1	99.3	89.7
1986:													
Jan.-Mar.—	105.9	16,542.3	.6	87.2	4/	23.7	4/	4/	67.4	4/	94.8	109.4	98.0
Apr.-June—	103.8	4/	.5	4/	4/	22.9	4/	4/	68.0	4/	91.2	120.9	106.2

See footnotes at end of table.

Table 83.—Nominal-exchange-rate equivalents of selected currencies in U.S. dollars, real-exchange-rate equivalents ^{1/}, and producer price indicators in specified countries ^{2/} indexed by quarters, January 1981-March 1986 ^{3/}—Continued

Period	(January-March 1981=100)												
	U.S. Pro- ducer Price Index	Mexico Pro- ducer Price Index	Nominal- exchange- rate index	Real- exchange- rate index	Panama Pro- ducer Price Index	Nominal- exchange- rate index	Real- exchange- rate index	Philippines Pro- ducer Price Index	Nominal- exchange- rate index	Real- exchange- rate index	Taiwan Pro- ducer Price Index	Nominal- exchange- rate index	Real- exchange- rate index
1981:													
Jan.-Mar.—	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Apr.-June—	102.2	106.2	97.5	101.3	101.2	100.0	99.0	103.2	97.7	98.6	100.7	99.1	97.5
July-Sept.—	102.9	111.6	94.8	102.7	102.5	100.0	99.6	105.6	96.4	98.9	94.8	97.0	89.4
Oct.-Dec.—	102.8	118.4	91.4	105.3	104.5	100.0	101.6	107.8	94.8	99.4	97.5	95.3	90.3
1982:													
Jan.-Mar.—	103.7	132.3	68.5	87.3	107.3	100.0	103.5	110.9	92.6	98.9	100.3	95.1	91.9
Apr.-June—	103.8	152.8	50.2	73.9	111.2	100.0	107.1	113.9	91.2	100.1	100.7	93.1	90.2
July-Sept.—	104.3	181.9	33.0	57.6	111.3	100.0	106.7	117.4	89.8	101.0	100.4	90.8	87.4
Oct.-Dec.—	104.4	213.8	32.1	65.6	112.2	100.0	107.4	119.1	86.3	98.4	99.9	89.7	85.9
1983:													
Jan.-Mar.—	104.5	276.7	23.0	61.0	111.8	100.0	107.0	122.7	81.2	95.3	98.1	90.3	84.8
Apr.-June—	104.8	335.7	20.6	65.9	113.5	100.0	108.3	122.9	76.1	89.3	98.9	90.0	85.0
July-Sept.—	105.8	378.9	18.6	66.7	113.5	100.0	107.3	134.1	69.8	88.4	99.2	89.8	84.2
Oct.-Dec.—	106.4	420.6	17.0	67.3	113.6	100.0	106.8	162.1	55.2	84.1	99.4	89.7	83.8
1984:													
Jan.-Mar.—	107.5	501.1	15.7	73.0	111.1	100.0	103.4	188.5	54.8	96.2	99.6	89.8	83.2
Apr.-June—	108.2	579.5	14.5	77.7	113.8	100.0	105.2	206.2	50.7	96.6	100.2	90.7	84.0
July-Sept.—	107.9	628.4	13.5	78.8	116.0	100.0	107.4	242.8	42.6	95.9	99.5	92.0	84.8
Oct.-Dec.—	107.7	695.9	12.7	81.8	116.0	100.0	107.8	269.0	39.1	97.6	99.0	91.6	84.2
1985:													
Jan.-Mar.—	107.5	785.1	11.7	85.6	115.9	100.0	107.8	270.3	41.3	103.9	98.0	91.7	83.6
Apr.-June—	107.6	877.0	10.3	87.6	115.7	100.0	107.5	267.5	41.5	103.3	97.3	90.6	81.9
July-Sept.—	106.8	950.3	8.6	76.1	121.5	100.0	113.8	265.5	41.3	102.6	96.6	89.4	80.9
Oct.-Dec.—	107.5	1,080.4	7.0	70.8	121.3	100.0	112.9	267.8	40.9	101.9	96.1	90.1	80.6
1986:													
Jan.-Mar.—	105.9	1,313.3	5.5	68.8	4/	100.0	4/	272.4	38.2	98.3	95.2	91.8	82.6
Apr.-June—	103.8	4/	4.5	4/	4/	100.0	4/	264.8	37.4	95.4	4/	4/	4/

See footnotes at end of table.

Table 83.—Nominal-exchange-rate equivalents of selected currencies in U.S. dollars, real-exchange-rate equivalents ^{1/}, and producer price indicators in specified countries ^{2/} indexed by quarters, January 1981–March 1986 ^{3/}—Continued

Period	(January–March 1981=100)						
	U.S. Pro- ducer Price Index	Thailand Pro- ducer Price Index	Nominal- exchange- rate index	Real- exchange- rate index	Venezuela Pro- ducer Price Index	Nominal- exchange- rate index	Real- exchange- rate index
1981:							
Jan.–Mar.—	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Apr.–June—	102.2	102.1	99.0	98.8	103.8	100.0	101.5
July–Sept.—	102.9	103.1	91.0	91.2	107.4	100.0	104.4
Oct.–Dec.—	102.8	103.9	89.9	90.9	107.3	100.0	104.3
1982:							
Jan.–Mar.—	103.7	103.5	89.9	89.6	111.2	100.0	107.2
Apr.–June—	103.8	103.1	89.9	89.2	112.7	100.0	108.5
July–Sept.—	104.3	102.5	89.9	88.4	116.5	100.0	111.7
Oct.–Dec.—	104.4	103.6	89.9	89.2	114.2	100.0	109.4
1983:							
Jan.–Mar.—	104.5	103.7	89.9	89.2	116.2	100.0	111.2
Apr.–June—	104.8	104.5	89.9	89.6	118.9	99.9	113.4
July–Sept.—	105.8	106.4	89.9	90.4	123.3	99.8	116.3
Oct.–Dec.—	106.4	106.5	89.9	90.0	125.6	99.8	117.9
1984:							
Jan.–Mar.—	107.5	103.2	89.9	86.3	130.0	77.1	93.2
Apr.–June—	108.2	102.1	89.9	84.8	136.1	57.2	72.0
July–Sept.—	107.9	101.8	89.9	84.7	146.7	57.2	77.8
Oct.–Dec.—	107.7	101.1	80.9	76.0	155.7	57.2	82.8
1985:							
Jan.–Mar.—	107.5	100.8	74.4	69.8	161.4	57.2	85.9
Apr.–June—	107.6	101.8	75.3	71.3	166.1	57.2	88.4
July–Sept.—	106.8	102.4	76.7	73.6	169.8	57.2	91.0
Oct.–Dec.—	107.5	103.0	78.1	74.8	175.0	57.2	93.2
1986:							
Jan.–Mar.—	105.9	102.2	78.0	75.3	182.3	57.2	98.5
Apr.–Jun.—	103.8	4/	78.4	4/	4/	57.2	4/

^{1/} The real value of a currency is the nominal value adjusted for the difference between inflation rates as measured here by the Producer Price Index in the United States and the respective foreign country.

^{2/} Producer price indicators—intended to measure final product prices—are based on average quarterly indexes presented in line 63 of International Financial Statistics.

^{3/} Exchange rates expressed in U.S. dollars per unit of foreign currency.

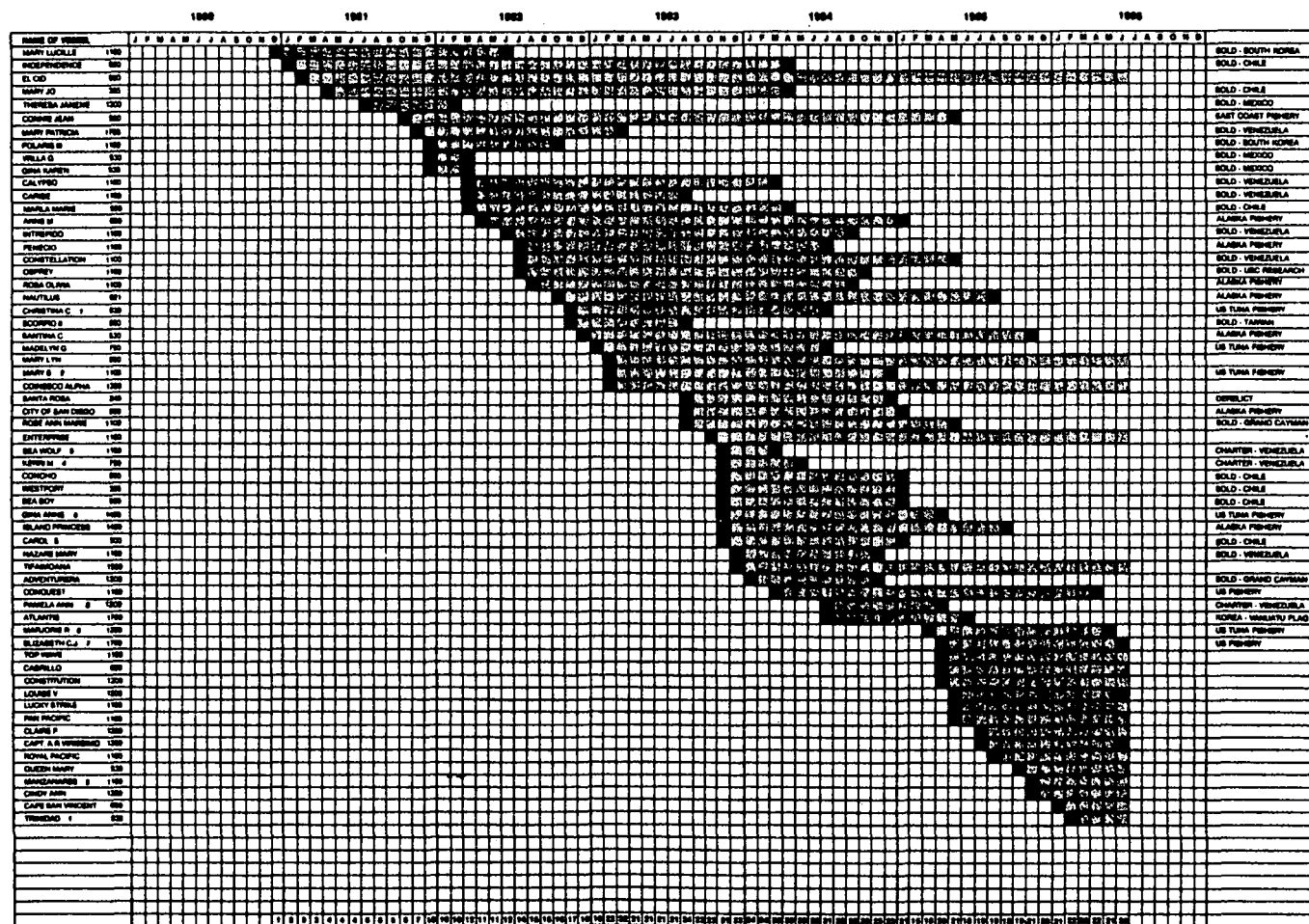
^{4/} Not available.

Source: International Monetary Fund, International Financial Statistics, June 1986.

APPENDIX D

FIGURES

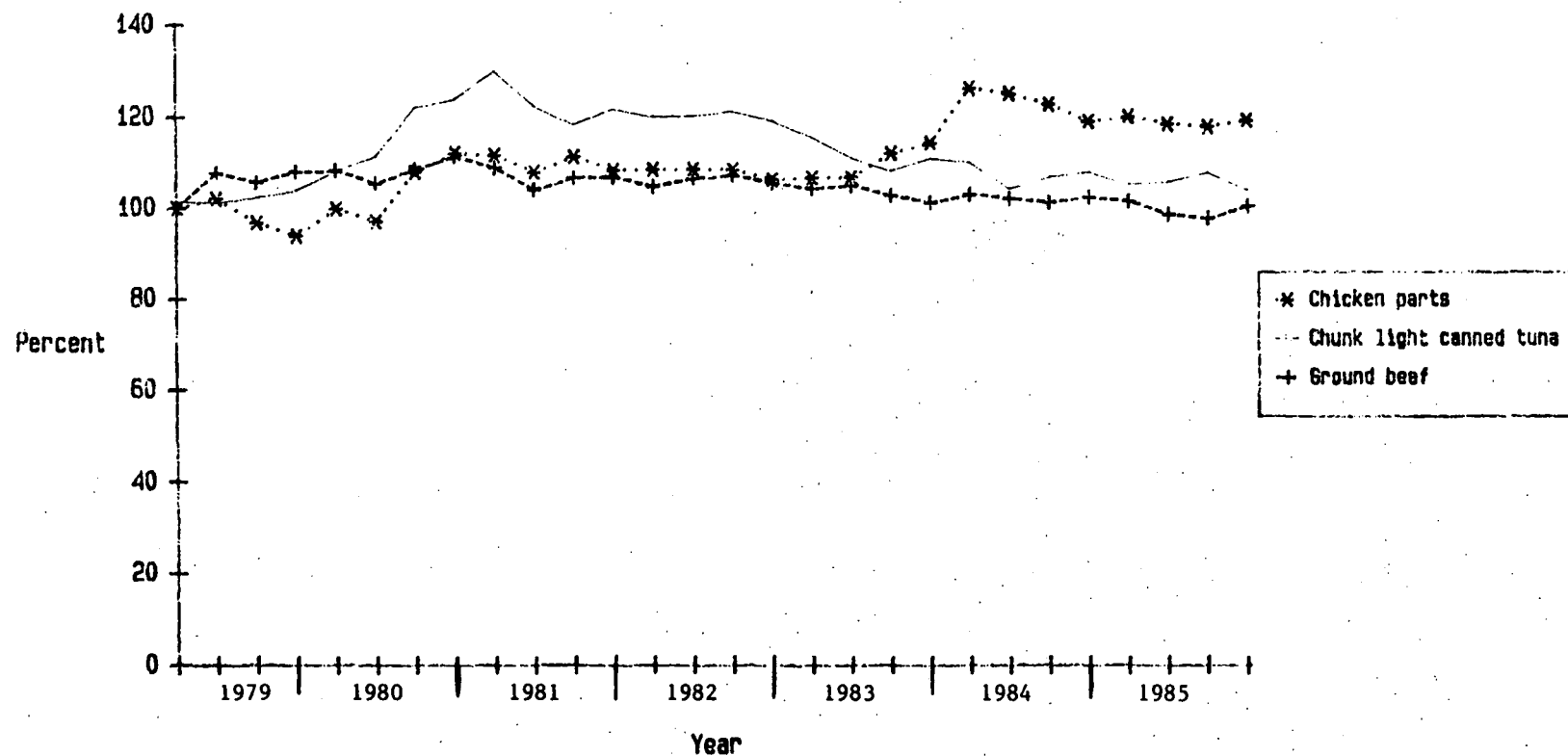
Figure 1.--U.S. tuna purse seiners: Status of idle vessels, January 1980-June 1986.



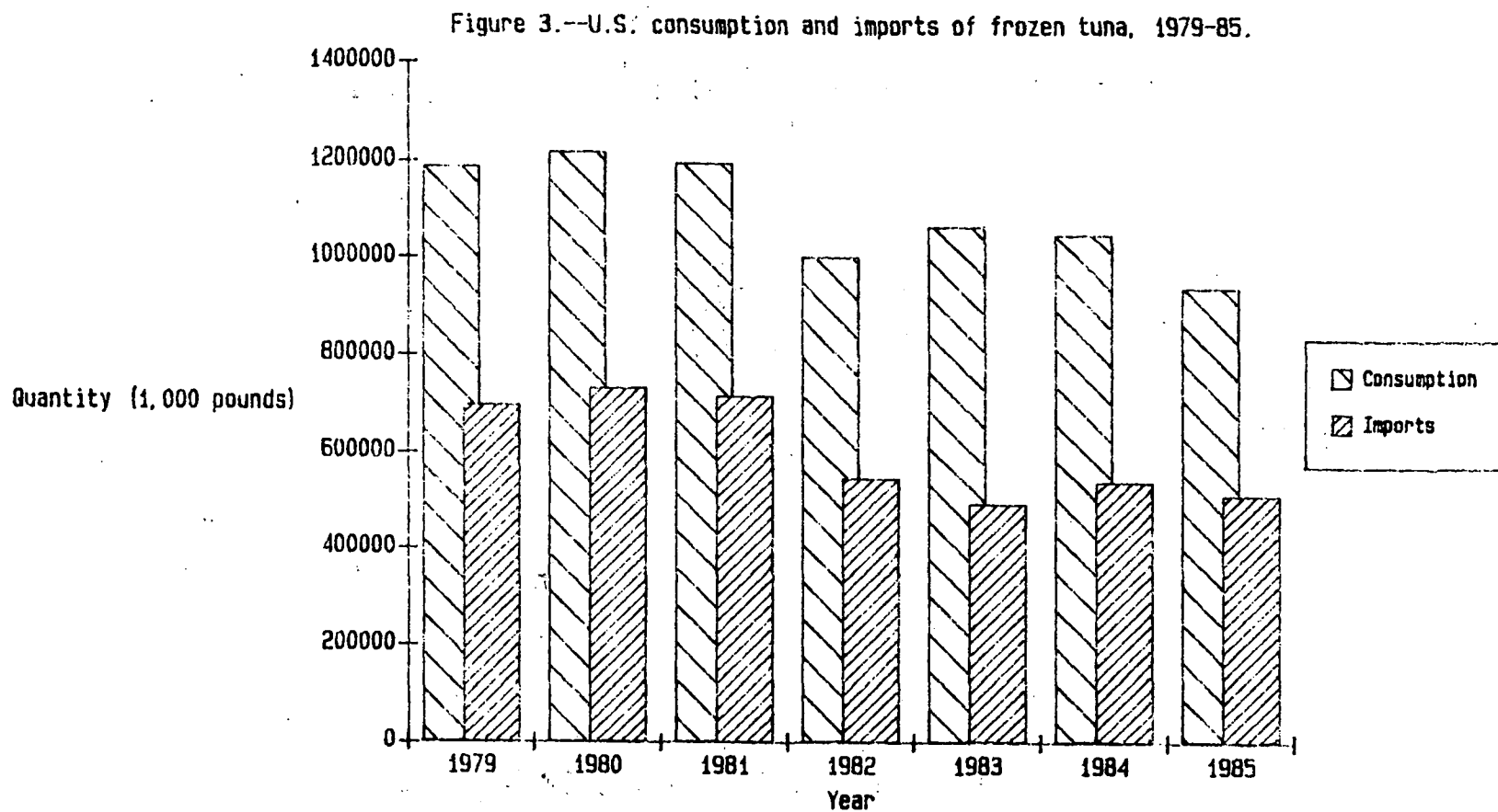
1. Christina C sold and renamed Trinidad
2. Mary S sold and renamed South Seas
3. Sea Wolf sold and renamed Manzanera
4. Kerri M sold to Venezuela March 1986
5. Gine Anne sold and renamed Yolanda Z
6. Marjorie R sold and renamed Larry Z
7. Elizabeth C.J. sold and renamed Big Z
8. Pamela Ann sold and renamed Olympia

Source: American Tunaboat Association.

Figure 2.—Retail price index of chicken parts, chunk light canned tuna, and ground beef, 1979-85.

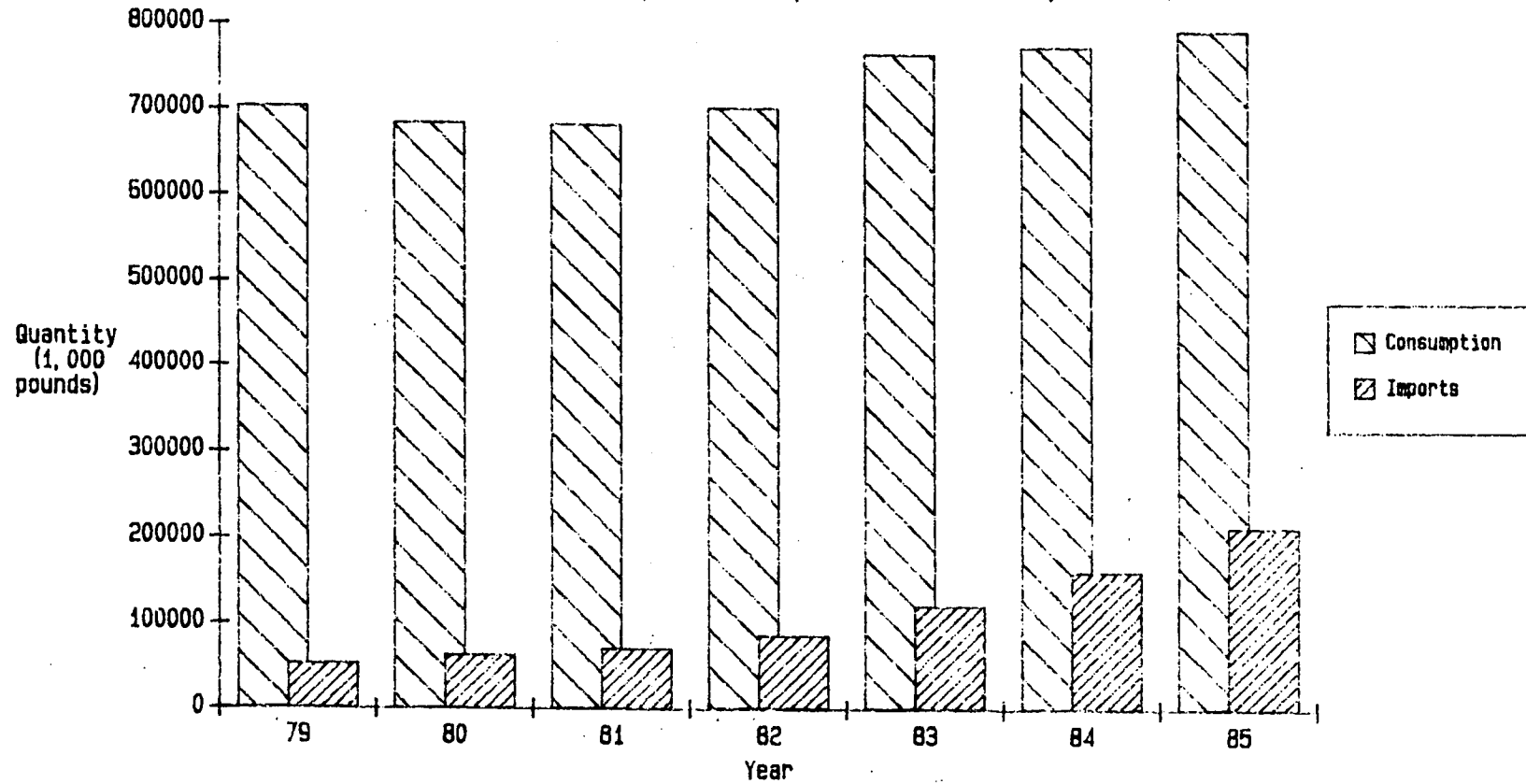


Source: Derived from official statistics of the U.S. Department of Commerce and the U.S. Department of Labor.



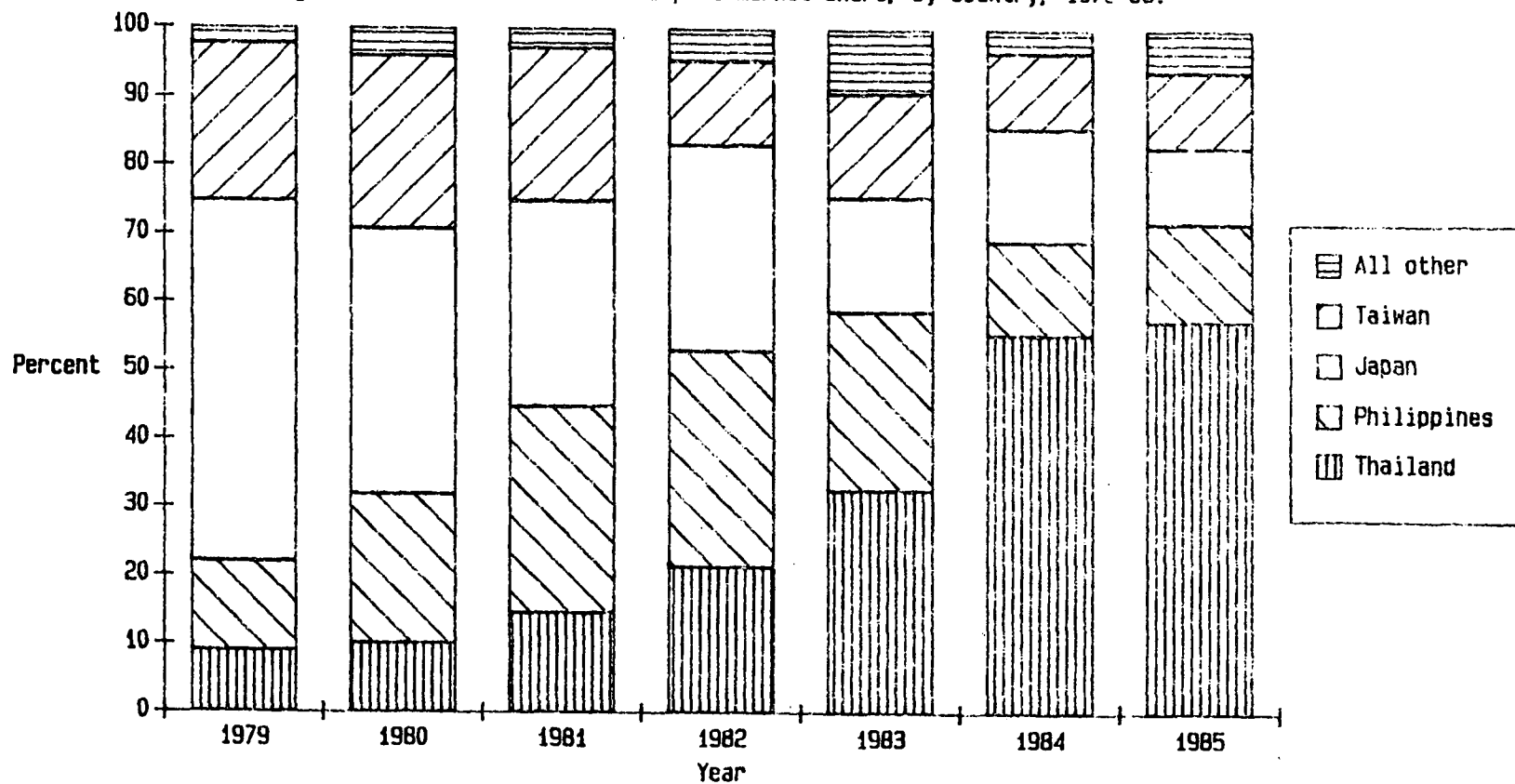
Source: Derived from official statistics of the U.S.
Department of Commerce.

Figure 4.--U.S. consumption and imports of canned tuna, 1979-85.



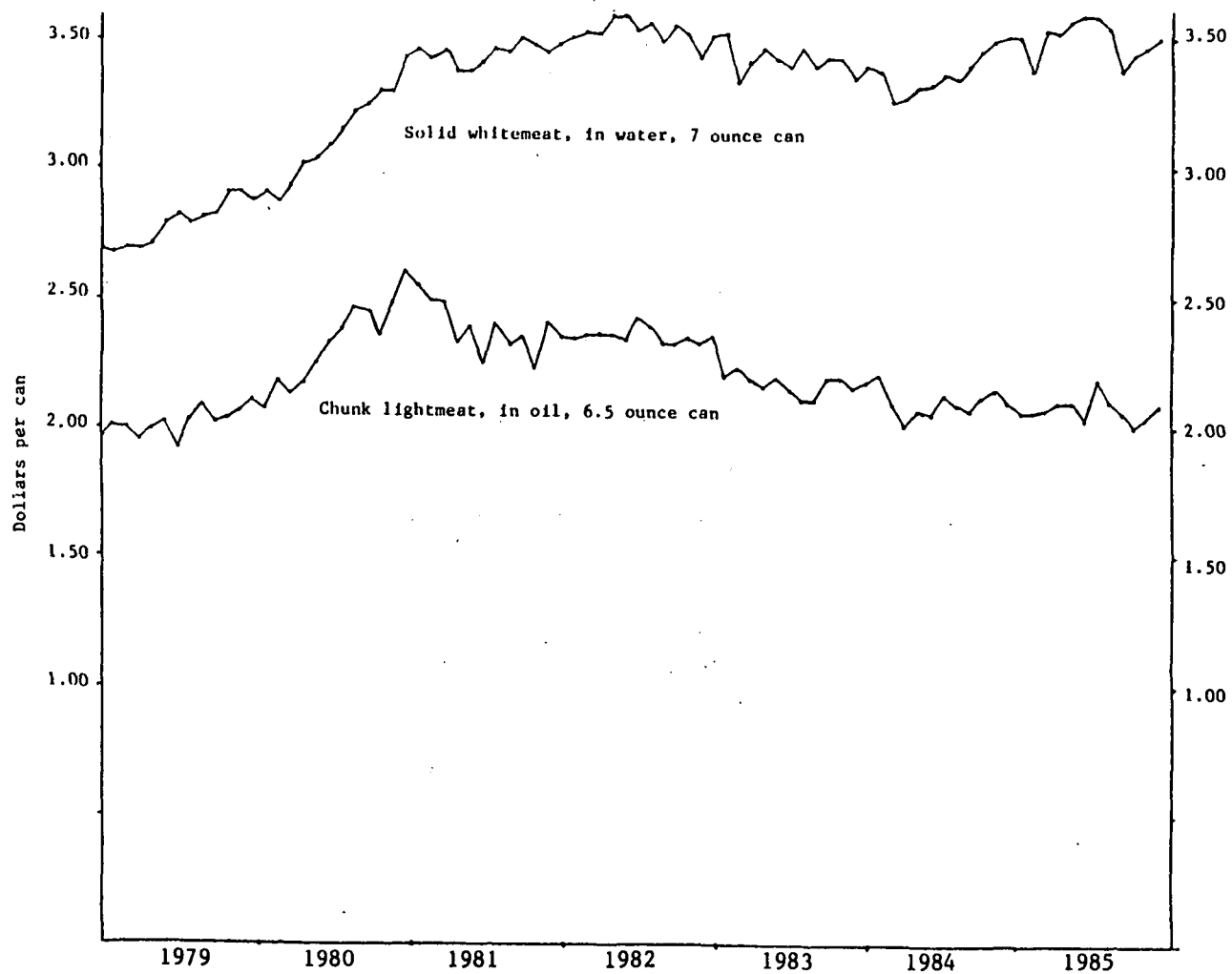
Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure 5.--Canned tuna: U.S. import market share, by country, 1979-85.



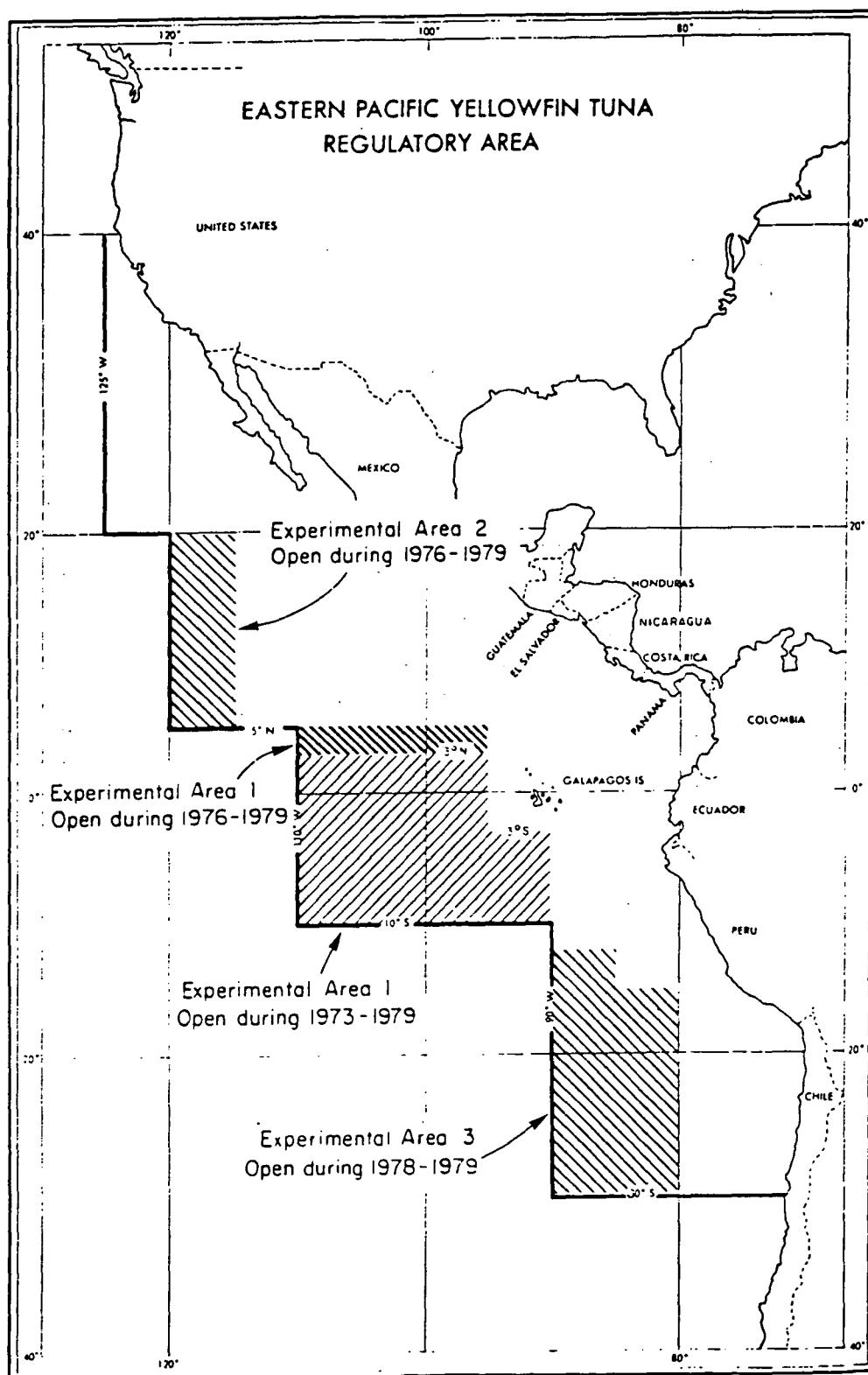
Source: Derived from official statistics of the U.S. Department of Commerce.

Figure 6.--Canned tuna: Retail prices for solid whitemeat and chunk lightmeat, U.S. average, monthly, 1979-85



Source: Compiled from official statistics of the U.S. Department of Commerce.

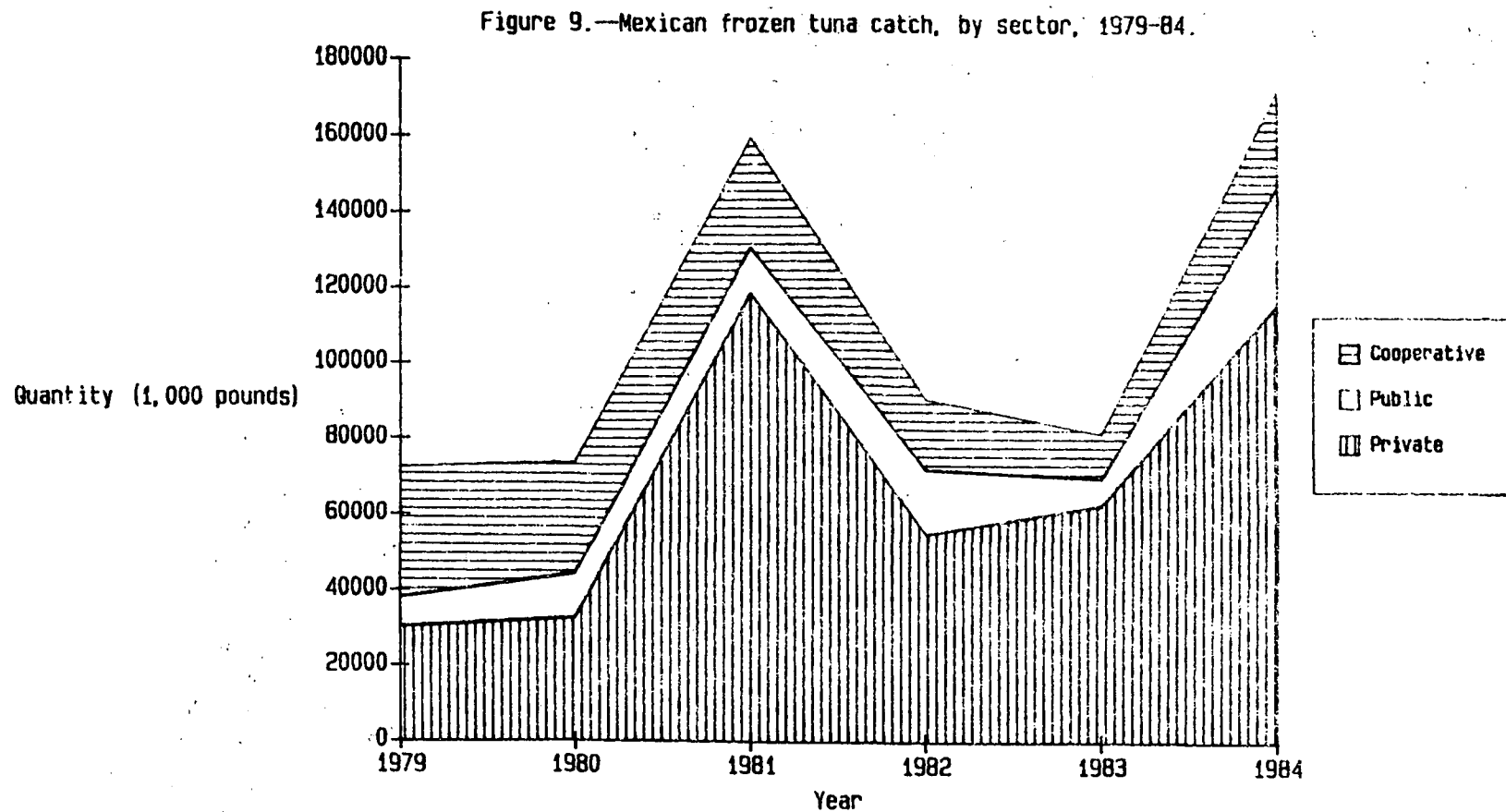
Figure 7.--The Inter-American Tropical Tuna Commission's Yellowfin Regulatory Area (CYRA).



Source: The Inter-American Tropical Tuna Commission.

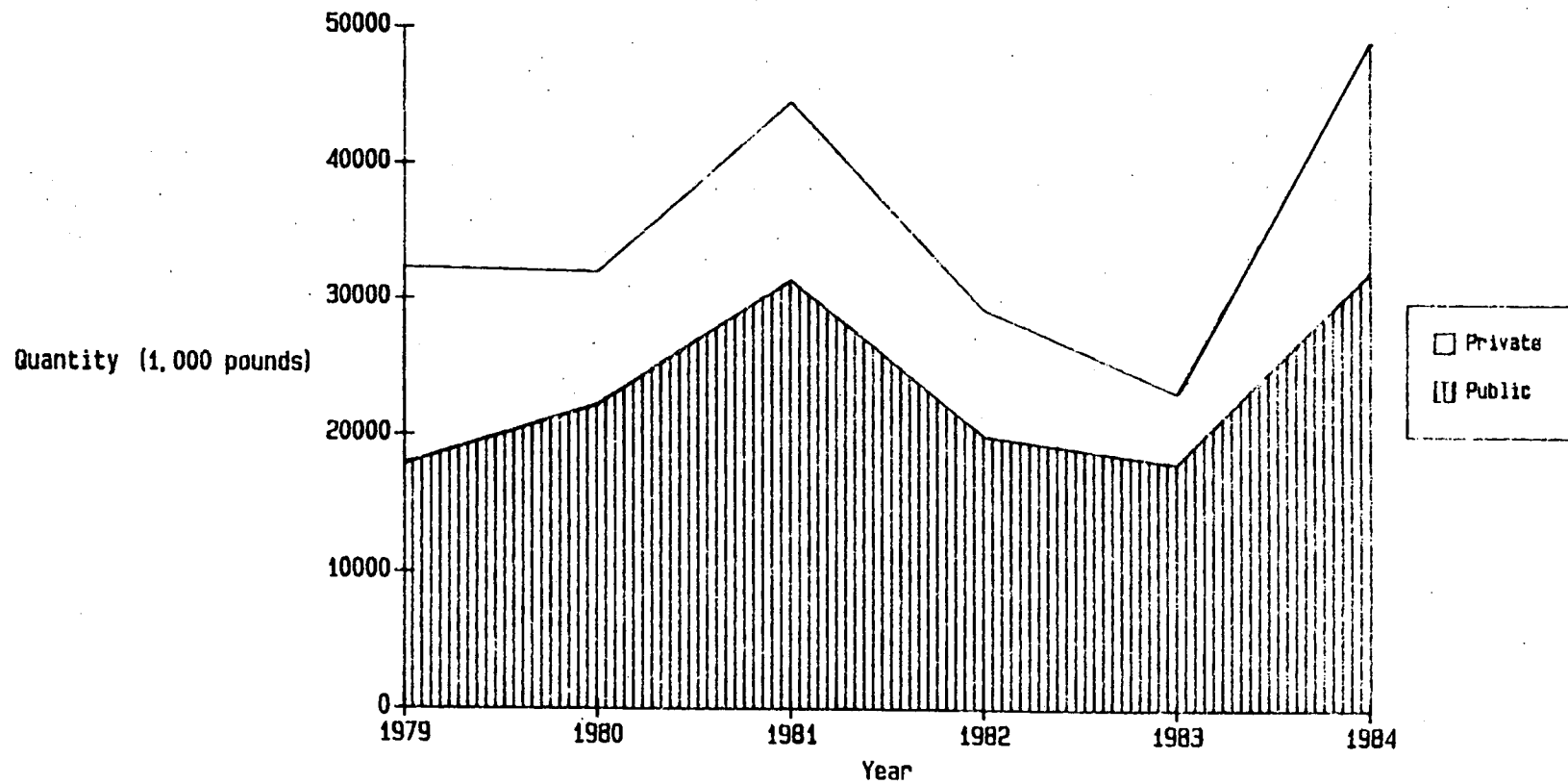
Figure 8.--Major Mexican tuna ports.





Source: Derived from official statistics of the Mexican government.

Figure 10.--Mexican canned tuna production, by sector, 1979-84.



Source: Derived from official statistics of the Mexican Government.

APPENDIX E

EXPLANATION OF THE RATES OF DUTY APPLICABLE TO TUNA AND SELECTED
PORTIONS OF THE TARIFF SCHEDULES OF THE UNITED STATES, ANNOTATED (1986)

Explanation of the rates of duty applicable to tuna

The rates of duty in column 1 are most-favored-nation (MFN) rates, and are applicable to imported products from all countries except those Communist countries and areas enumerated in general headnote 3(d) of the Tariff Schedules of the United States (TSUS). The Peoples' Republic of China, Hungary, Romania, and Yugoslavia are the only Communist countries currently eligible for MFN treatment. However, MFN rates do not apply if preferential tariff treatment is sought and granted to products of developing countries under the Generalized System of Preferences (GSP) of the Caribbean Basin Economic Recovery Act (CBERA), or to products of Israel or of least developed developing countries (LDDC's), as provided under the Special rates of duty column.

Preferential rates of duty in the Special column followed by the code "D" column reflect the full U.S. MTN concession rates implemented without staging for particular products of LDDC's enumerated in general headnote 3 (e) (vi) of the TSUS. Where no rate of duty is provided for LDDC's in the Special column for a particular tariff item, the rate of duty in column 1 applies.

The 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, was implemented by Executive Order No. 11888 of November 24, 1975, and renewed in title V of the Trade and Tariff Act of 1984. It applies to merchandise imported on or after January 1, 1976, and is scheduled to remain in effect through July 4, 1993. It provides duty-free entry to eligible articles imported directly from designated beneficiary developing countries. Eligible articles are identified in the Special column with the duty rates of "Free" followed by an "A" or "A*." The designation "A" means that products of all beneficiary developing countries are eligible for benefits of the GSP, and "A*" indicates that products of certain developing countries, specified in general headnote 3(e)(v)(D) of the TSUS, are not eligible.

The 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 and implemented by Presidential Proclamation 5133 of November 30, 1983, applies to merchandise entered, or withdrawn from warehouse for consumption, on or after January 1, 1984, and it is scheduled to remain in effect until September 30, 1995. It provides duty-free entry to eligible articles imported directly from designated Basin countries, as reflected by the rate of duty "Free" followed by the code "E" in the Special column. (See general headnote 3(e)(i) and (vii) of the TSUS.)

Preferential rates of duty in the Special column followed by the code "I" reflect the rates of duty applicable to products of Israel under the United States-Israel Free Trade Area Implementation Act of 1985, as provided in general headnote 3(e)(viii) of the TSUS. Where no rate of duty is provided for products of Israel in the Special column for a particular tariff item, the rate of duty in column 1 applies.

TARIFF SCHEDULES OF THE UNITED STATES ANNOTATED (1986)

GENERAL HEADNOTES AND RULES OF INTERPRETATION

Page 3

1. **Tariff Treatment of Imported Articles.** All articles imported into the customs territory of the United States from outside thereof are subject to duty or exempt therefrom as prescribed in general headnote 3.

2. **Customs Territory of the United States.** The term "customs territory of the United States", as used in the schedules, includes only the States, the District of Columbia, and Puerto Rico.

3. **Rates of Duty.** The rates of duty in the "Rates of Duty" columns numbered 1 and 2 and the column designated Special of the schedules apply to articles imported into the customs territory of the United States as hereinafter provided in this headnote:

(a) **Products of Insular Possessions.**

(i) Except as provided in headnote 6 of subpart E of part 2 of schedule 7, and except as provided in headnote 3 of subpart A of part 7 of schedule 7, articles imported from insular possessions of the United States which are outside the customs territory of the United States are subject to the rates of duty set forth in column numbered 1 of the schedules, except that all such articles the growth or product of any such possession, or manufactured or produced in any such possession from materials the growth, product, or manufacture of any such possession or of the customs territory of the United States, or of both, which do not contain foreign materials to the value of more than 70 percent of their total value (or more than 50 percent of their total value with respect to articles described in section 213(b) of the Caribbean Basin Economic Recovery Act), coming to the customs territory of the United States directly from any such possession, and all articles previously imported into the customs territory of the United States with payment of all applicable duties and taxes imposed upon or by reason of importation which were shipped from the United States, without remission, refund, or drawback of such duties or taxes, directly to the possession from which they are being returned by direct shipment, are exempt from duty.

(ii) In determining whether an article produced or manufactured in any such insular possession contains foreign materials, to the value of more than 70 percent, no material shall be considered foreign which either—

- (A) at the time such article is entered, or
- (B) at the time such material is imported into the insular possession,

may be imported into the customs territory from a foreign country, other than Cuba or the Philippine Republic, and entered free of duty; except that no article containing material to which (B) of this subdivision applies shall be exempt from duty under subdivision (i) unless adequate documentation is supplied to show that the material has been incorporated into such article during the 18-month period after the date on which such material is imported into the insular possession.

(iii) Subject to the limitations imposed under section 503(b) and 504(c) of the Trade Act of 1974, articles designated eligible articles under section 503 of such Act which are imported from an insular possession of the United States shall receive duty treatment no less favorable than the treatment afforded such articles imported from a beneficiary developing country under title V of such Act.

(iv) Subject to the provisions in section 213 of the Caribbean Basin Economic Recovery Act, articles which are imported from insular possessions of the United States shall receive duty treatment no less favorable than the treatment afforded such articles when they are imported from a beneficiary country under such Act.

(b) **Products of Cuba.** Products of Cuba imported into the customs territory of the United States, whether imported directly or indirectly, are subject to the rates of duty set forth in column numbered 1 of the schedules. Preferential rates of duty for such products apply only as shown in the said column 1. ^{1/}

(c) **Products of Canada**

(i) **Products of Canada** imported into the customs territory of the United States, whether imported directly or indirectly, are subject to the rates of duty set forth in column numbered 1 of the schedules. The rates of duty for a Canadian article, as defined in subdivision (e)(ii) of this headnote, apply only as shown in the said column numbered 1.

(ii) The term "Canadian article", as used in the schedules, means an article which is the product of Canada, but does not include any article produced with the use of materials imported into Canada which are products of any foreign country (except materials produced within the customs territory of the United States), if the aggregate value of such imported materials when landed at the Canadian port of entry (that is, the actual purchase price, or, if not purchased, the export value, of such materials, plus, if not included therein, the cost of transporting such materials to Canada but exclusive of any landing cost and Canadian duty) was --

(A) with regard to any motor vehicle or automobile truck tractor entered on or before December 31, 1967, more than 60 percent of the appraised value of the article imported into the customs territory of the United States; and

(B) with regard to any other article (including any motor vehicle or automobile truck tractor entered after December 31, 1967), more than 50 percent of the appraised value of the article imported into the customs territory of the United States.

(d) **Products of Communist Countries.** Notwithstanding any of the foregoing provisions of this headnote, the rates of duty shown in column numbered 2 shall apply to products, whether imported directly or indirectly, of the following countries and areas pursuant to section 401 of the Tariff Classification Act of 1962, to section 231 or 257(e)(2) of the Trade Expansion Act of 1962, or to action taken by the President thereunder or pursuant to Presidential Proclamation 4991, dated October 27, 1982: ^{2/}

^{1/} By virtue of section 401 of the Tariff Classification Act of 1962, the application to products of Cuba of either a preferential or other reduced rate of duty in column 1 is suspended. See general headnote 3(f), *infra*.

^{2/} In Proclamation 4697, dated October 23, 1979, the President, acting under authority of section 404(a) of the Trade Act of 1974 (88 Stat. 1978) amended general headnote 3(f) by deleting "China (any part of which may be under Communist domination or control)" and "Tibet", effective February 1, 1980, the date on which written notices of acceptance were exchanged, following adoption on January 24, 1980 by the Congress of a concurrent resolution of approval extending nondiscriminatory treatment to the products of the People's Republic of China.

TARIFF SCHEDULES OF THE UNITED STATES ANNOTATED (1986)

SCHEDULE 1. - ANIMAL AND VEGETABLE PRODUCTS
Part 3. - Fish and Shellfish

Page 1-13

1 - 3 - A

Item	Stat. Suf- fix	Articles	Units of Quantity	Rates of Duty		
				1	Special	2
		<p align="center">PART 3. - FISH AND SHELLFISH</p> <p><u>Part 3 headnotes:</u></p> <p>1. The term "fish", as used in this part, does not include shellfish, or whales or other mammals. This part covers only fish and shellfish, live or dead, fit for human consumption.</p> <p>2. In subparts A and B of this part, the term "whether or not whole" means if whole, or if processed by removal of heads, fins, viscera, scales, skins, or bones, or by filleting, division into pieces, or other cutting or slicing operations, but not minced or ground.</p> <p>3. In subparts C and D of this part, the term "in oil" means packed in added oil or fat, or in added oil or fat and other substances, whether such oil or fat was introduced at the time of packing or prior thereto.</p> <p>4. Live fish and shellfish imported to be used for purposes other than human consumption are covered by item 190.45 (see part 15F of schedule 1) and certain other fish and shellfish products are covered by parts 14 and 15 of schedule 1.</p> <p align="center">-----</p> <p align="center">Subpart A. - Fish, Fresh, Chilled, or Frozen</p> <p><u>Subpart A headnote:</u></p> <p>1. In item 110.50 of this subpart, "apparent consumption" shall be the sum of (a) the production in the United States of fresh and frozen fillets, steaks, and sticks of the named fish as defined on October 30, 1947, and as reported, by the United States Fish and Wildlife Service, (b) the quantity of such fillets, steaks, and sticks entered into the United States, free of duty under the provisions for "products of American fisheries" in part 15 of schedule 1, and (c) the quantity of the named fish entered into the United States and provided for in items 110.50 or 110.55.</p> <p align="center">-----</p>				

TARIFF SCHEDULES OF THE UNITED STATES ANNOTATED (1986)

Page 1-14

SCHEDULE 1. - ANIMAL AND VEGETABLE PRODUCTS
Part 3. - Fish and Shellfish

1 - 3 - A

110.10 - 110.33

Item	Stat. Suf- fix	Articles	Units of Quantity	Rates of Duty		
				1	Special	2
110.10		Fish, fresh, chilled, or frozen, whether or not whole, but not otherwise prepared or preserved: Sea herring, smelts, and tuna.....		Free		Free
		Smelts:				
	07	Fresh or chilled.....	Lb.			
	09	Frozen.....	Lb.			
		Tuna:				
	12	Albacore.....	Lb.			
		Yellowfin:				
	20	Whole fish.....	Lb.			
		Eviscerated fish:				
	25	Head-on.....	Lb.			
	30	Head-off.....	Lb.			
	37	Other.....	Lb.			
	45	Skipjack.....	Lb.			
	50	Other.....	Lb.			
		Sea herring:				
	60	Fresh or chilled.....	Lb.			
	70	Frozen.....	Lb.			
		Other:				
		Whole; or processed by removal of heads, viscera, fins, or any combination thereof, but not otherwise processed:				
110.15		Cod, cusk, eels, haddock, hake, pollock, shad, sturgeon, and fresh-water fish.....		Free		1c per lb.
		Fresh-water fish:				
		Whitefish:				
	05	Fresh or chilled.....	Lb.			
	15	Frozen.....	Lb.			
		Pike, pickerel, and pike perch (including yellow pike):				
	37	Fresh or chilled.....	Lb.			
	39	Frozen.....	Lb.			
	40	Lake trout.....	Lb.			
	50	Other trout.....	Lb.			
	75	Other.....	Lb.			
		Cod:				
	85	Fresh or chilled.....	Lb.			
	89	Frozen.....	Lb.			
		Cusk, haddock, hake, and pollock:				
	93	Fresh or chilled.....	Lb.			
	97	Frozen.....	Lb.			
	99	Eels, shad, and sturgeon.....	Lb.			
110.20		Halibut and salmon.....		Free		2c per lb.
		Halibut:				
	25	Fresh or chilled.....	Lb.			
	30	Frozen.....	Lb.			
		Salmon:				
	45	Fresh or chilled.....	Lb.			
	50	Frozen.....	Lb.			
		Mackerel:				
110.25	00	Fresh or chilled.....	Lb.....	Free		2c per lb.
110.28	00	Frozen.....	Lb.....	0.04c per lb.	Free (A,D,E,I)	2c per lb.
		Swordfish:				
110.30	00	Fresh or chilled.....	Lb.....	Free		2c per lb.
110.33	00	Frozen.....	Lb.....	Free		3c per lb.

TARIFF SCHEDULES OF THE UNITED STATES ANNOTATED (1986)

Page 1-18

SCHEDULE 1. - ANIMAL AND VEGETABLE PRODUCTS
Part 3. - Fish and Shellfish

1 - 3 - C

112.01 - 112.52

Item	Stat. Suf-fix	Articles	Units of Quantity	Rates of Duty		
				1	Special	2
		Subpart C. - Fish in Airtight Containers				
		Fish, prepared or preserved in any manner, not in oil, in airtight containers:				
		Anchovies:				
112.01	00	In containers weighing with their contents not over 15 pounds each.....	Lb.....	5% ad val.	Free (E,I)	25% ad val.
112.03	00	Other.....	Lb.....	0.3% ad val. ^{1/}	Free (A,D,E,I)	2.5% ad val.
112.05	00	Bonito and yellowtail.....	Lb.....	6% ad val.	Free (E,I)	25% ad val.
		Herring:				
		In containers weighing with their contents not over 15 pounds each:				
112.08	00	In tomato sauce, smoked, or kippered, and in immediate containers weighing with their contents over 1 pound each....	Lb.....	4% ad val.	Free (E,I)	25% ad val.
112.10	00	Other.....	Lb.....	Free		25% ad val.
112.12	00	Other.....	Lb.....	0.1% ad val.	Free (D,E,I)	2% ad val.
112.14	00	Pollock.....	Lb.....	6% ad val.	Free (E,I)	25% ad val.
112.18	00	Salmon.....	Lb.....	3.6% ad val.	3% ad val. (D) Free (E,I)	25% ad val.
		Sardines:				
		In containers weighing with their contents not over 15 pounds each:				
112.20	00	In immediate containers weighing with their contents under 8 ounces each.....	Lb.....	2.8% ad val.	2.5% ad val. (D) Free (E,I)	25% ad val.
		Other:				
112.21	00	In tomato sauce.....	Lb.....	6.25% ad val.	Free (A,E,I)	25% ad val.
112.23	00	Other.....	Lb.....	6.25% ad val.	Free (E,I)	25% ad val.
112.24	00	Other.....	Lb.....	1.7% ad val.	Free (E,I)	4% ad val.
112.30		Tuna:				
		In containers weighing with their contents not over 15 pounds each, and not the product of any insular possession of the United States, for an aggregate quantity entered in any calendar year not to exceed 20% of the United States pack of canned tuna during the immediately preceding calendar year, as reported by the National Marine Fisheries Service.....	.....	6% ad val.	Free (I)	25% ad val.
	20	Albacore.....	Lb.			
	40	Other.....	Lb.			
112.34	00	Other.....	Lb.....	12.5% ad val.	10% ad val. (I)	25% ad val.
112.36		Other.....	.....	6% ad val.	Free (A,E,I)	25% ad val.
	20	Mackerel.....	Lb.			
	40	Other.....	Lb.			
		Fish, prepared or preserved in any manner, in oil, in airtight containers:				
112.40	00	Anchovies.....	Lb.....	6% ad val. ^{2/}	Free (A,E,I)	30% ad val.
112.42	00	Bonito and yellowtail.....	Lb.....	5.2% ad val.	4.9% ad val. (D) Free (E,I)	30% ad val.
112.46	00	Herring.....	Lb.....	8.6% ad val.	8% ad val. (D) Free (E,I)	30% ad val.
		Pollock:				
112.48	00	Smoked.....	Lb.....	7.5% ad val.	Free (E,I)	30% ad val.
112.50	00	Not smoked.....	Lb.....	12.5% ad val.	Free (E) 10% ad val. (I)	30% ad val.
112.52	00	Salmon.....	Lb.....	12.5% ad val.	Free (E) 10% ad val. (I)	30% ad val.

^{1/} Duty temporarily reduced. See item 947.01, part 2, Appendix to the Tariff Schedules.

^{2/} Duty temporarily reduced. See item 947.02, part 2, Appendix to the Tariff Schedules.

TARIFF SCHEDULES OF THE UNITED STATES ANNOTATED (1986)

SCHEDULE 1. - ANIMAL AND VEGETABLE PRODUCTS
Part 3. - Fish and Shellfish

Page 1-19

1 - 3 - C, D
112.54 - 113.15

Item	Stat. Suffix	Articles	Units of Quantity	Rates of Duty		
				1	Special	2
		Fish, prepared or preserved, etc. (con.):				
		Sardines:				
112.54	00	Valued not over 18 cents per pound (including weight of immediate container).....	Lb.....	14.3% ad val.	12% ad val. (D,I) Free (E)	30% ad val.
		Valued over 18 but not over 23 cents per pound (including weight of immediate container):				
		Neither skinned nor boned:				
112.58	00	Smoked.....	Lb.....	11.5% ad val.	Free (E) 9.2% ad val. (I)	30% ad val.
112.62	00	Not smoked.....	Lb.....	20% ad val.	Free (E) 16% ad val. (I)	30% ad val.
112.66	00	Skinned or boned.....	Lb.....	20% ad val.	Free (E) 16% ad val. (I)	30% ad val.
		Valued over 23 but not over 30 cents per pound (including weight of immediate container):				
		Neither skinned nor boned:				
112.71	00	Smoked.....	Lb.....	11.5% ad val.	Free (E) 9.2% ad val. (I)	30% ad val.
112.73	00	Not smoked.....	Lb.....	15% ad val.	Free (E) 12% ad val. (I)	30% ad val.
112.74	00	Skinned or boned.....	Lb.....	30% ad val.	Free (E) 24% ad val. (I)	30% ad val.
		Valued over 30 cents per pound (including weight of immediate container):				
		Neither skinned nor boned:				
		Smoked:				
112.79	00	Valued 45 cents or more per pound in tin-plate containers or 50 cents or more per pound in other containers.....	Lb.....	4.3% ad val.	4% ad val. (D) Free (E,I)	30% ad val.
112.80	00	Other.....	Lb.....	11.5% ad val.	Free (E) 9.2% ad val. (I)	30% ad val.
112.82	00	Not smoked.....	Lb.....	15% ad val.	Free (E) 12% ad val. (I)	30% ad val.
112.86	00	Skinned or boned.....	Lb.....	20.5% ad val.	Free (E) 20% ad val. (D,I) 28% ad val. (I)	30% ad val.
112.90	00	Tuna.....	Lb.....	35% ad val.		45% ad val.
112.94	00	Other.....	Lb.....	7.3% ad val. 1/	6.5% ad val. (D)1/ Free (A,E,I)	30% ad val.
		Subpart D. - Other Fish Products				
		Fish balls, cakes, puddings, pastes, and sauces, (including any of such articles in airtight containers):				
113.01	00	Pastes and sauces.....	Lb.....	0.5% ad val.	Free (A,D,E,I)	30% ad val.
113.05	00	Balls, cakes, and puddings: In oil.....	Lb.....	7.3% ad val.	6.6% ad val. (D) Free (E,I)	30% ad val.
		Not in oil:				
		In immediate containers weighing with their contents not over 15 pounds each:				
113.08	10	In airtight containers.....	Free			25% ad val.
	20	Surimi-structured products.....	Lb.			
113.11	00	Other.....	Lb.....	6% ad val.	Free (E,I)	25% ad val.
113.15	00	Other.....	Lb.....	0.8% ad val.	Free (E,I)	2% ad val.

1/ Duty on certain fish temporarily reduced. See item 947.03 in part 2, Appendix to the Tariff Schedules and general headnote 3(d)(ii).

SCHEDULE 1. - ANIMAL AND VEGETABLE PRODUCTS
Part 3. - Fish and Shellfish

1 - 3 - D, E
113.20 - 114.10

Item	Stat. Suf-fix	Articles	Units of Quantity	Rates of Duty		
				1	Special	2
		Fish sticks and similar products of any size or shape, fillers, or other portions of fish, if breaded, coated with batter, or similarly prepared, whether or not described or provided for elsewhere in this part:				
113.20	00	Neither cooked nor in oil.....	Lb.....	10% ad val.	Free (E)	20% ad val.
113.25	00	Other.....	Lb.....	15% ad val.	8% ad val. (I) Free (E) 12% ad val. (I)	30% ad val.
		Fish roe, fresh, chilled, frozen, prepared, or preserved:				
113.30	00	Sturgeon roe.....	Lb.....	15% ad val.	Free (A,E) 12% ad val. (I)	30% ad val.
		Other fish roe:				
113.35	00	Boiled and in airtight containers.....	Lb.....	2.5% ad val.	Free (E,I)	30% ad val.
113.40	00	Other.....	Lb.....	0.2c per lb.	Free (A,D,E,I)	20c per lb.
		Fish, prepared or preserved, not specially provided for:				
113.50	00	In oil.....	Lb.....	5.9% ad val.	5% ad val. (D) Free (A,E,I)	30% ad val.
		Not in oil:				
		In bulk or in immediate containers weighing with their contents over 15 pounds each:				
113.56		Tuna.....	.....	0.5c per lb.	Free (E,I)	1.25c per lb.
	20	Albacore.....	Lb.			
	65	Other.....	Lb.			
113.58		Other.....	.....	Free		1.25c per lb.
	20	Minced.....	Lb.			
	40	Other.....	Lb.			
113.60		Other.....	.....	6% ad val.	Free (A,E,I)	25% ad val.
	20	Minced.....	Lb.			
	40	Other.....	Lb.			
		Subpart E. - Shellfish				
		Shellfish, fresh, chilled, frozen, prepared or preserved (including pastes and sauces):				
		Clams:				
		In airtight containers:				
114.01	00	Razor clams (<i>Siliqua patula</i>).....	Lb.....	3.5% ad val.	Free (E,I)	23% ad val.
114.04	1/ 00	Other:				
		Boiled clams, whether whole, minced, or chopped, and whether or not salted, but not otherwise prepared or preserved, in immediate containers the contents of which do not exceed 24 ounces gross weight.....	Lb.....	15% ad val.	14% ad val.(D,I) Free (A,E)	110% ad val.
114.06	1/ 00	Other.....	Lb.....	7.9% ad val.	7% ad val. (D) Free (A,E,I)	35% ad val.
114.10	00	Other.....	Lb.....	Free		Free

1/ Articles exported to the United States prior to July 1, 1980, must be appraised under the valuation standards provided for in sections 402 and 402a of the Tariff Act of 1930 in effect on June 30, 1980, and are subject to classification under the items of the Tariff Schedules in effect on that date.

TARIFF SCHEDULES OF THE UNITED STATES ANNOTATED (1984)

SCHEDULE 1. - ANIMAL AND VEGETABLE PRODUCTS
Part 15. - Other Animal and Vegetable Products

Page 1-95

1 - 15 - A
180.00 - 180.20

Item	Stat. Suf- fix	Articles	Units of Quantity	Rates of Duty		
				1	Special	2
		<p>PART 15. - OTHER ANIMAL AND VEGETABLE PRODUCTS</p> <p>Subpart A. - Products of American Fisheries</p> <p><u>Subpart A headnotes:</u></p> <p>1. An American fishery, for the purposes of this subpart, is a fishing enterprise conducted under the American flag by vessels of the United States on the high seas or in foreign waters in which such vessels have the right, by treaty or otherwise, to take fish or other marine products and may include a shore station operated in conjunction with such vessels by the owner or master thereof.</p> <p>2. None of the items in this subpart shall apply to fish, fresh, chilled, or frozen, in the form of fillets, steaks, or slices substantially free of bone (including any of the foregoing divided into sections), if produced in a foreign country, or its territorial waters, in whole or in part with the use of the labor of persons who are not residents of the United States.</p>				
180.00	00	Products of American fisheries (including fish, shellfish, and other marine animals, spermaceti, and marine animal oils), which have not been landed in a foreign country, or which, if so landed, have been landed solely for transshipment without change in condition.....	Lb.....	Free		Free
180.10	00	Fish (except cod, cusk, haddock, hake, mackerel, pollock, and swordfish), the product of American fisheries, landed in a foreign country and there processed by removal of heads, viscera, or fins, or by chilling or freezing, or by any combination of these processes, but not otherwise processed.....	Lb.....	Free		Free
180.20	00	Products of American fisheries, prepared or preserved by an American fishery on the treaty coasts of Labrador, Magdalen Islands, and Newfoundland, as such coasts are defined in the convention of 1818 between the United States and Great Britain.....	Lb.....	Free		Free

APPENDIX F

ITA FINAL AFFIRMATIVE COUNTERVAILING DUTY DETERMINATION AND
COUNTERVAILING DUTY ORDER WITH REGARDS TO IMPORTS OF CANNED
TUNA FROM THE PHILIPPINES

1983. A supplemental questionnaire was sent to counsel for Union on September 18, 1983, and the response was received September 28, 1983.

On October 18, 1983, the petitioner alleged that home market sales of RWPT are being made at less than the cost of production in Korea. Since we did not receive this allegation in time for consideration in our preliminary determination, we will investigate whether home market sales of RWPT are being made at prices which are less than their costs of production for our final determination.

Scope of the Investigation

The merchandise covered by this investigation is certain rectangular welded carbon steel pipes and tubes, which are defined for purposes of this proceeding as: welded carbon steel pipes and tubes, of rectangular (including square) cross section, currently provided for in Items 810.3955 and 810.4975 of the *Tariff Schedules of the United States Annotated* (1983).

We investigated sales of RWPT by Union during the period from February 1, 1983, to July 31, 1983.

Fair Value Comparison

To determine whether sales of the subject merchandise in the United States were made at less than fair value, we compared the United States price with the foreign market value.

United States Price

As provided in section 772(b) of the Act, we used the purchase price of the subject merchandise to represent the United States price for sale by Union, because the merchandise was sold to unrelated purchasers prior to its importation into the United States.

We calculated the purchase price based on the f.o.b., c.i.f. or c. & f., packed price. We made deductions, where appropriate, for Korean inland freight, ocean freight, foreign marine insurance, foreign brokerage and handling, and testing and inspection fees.

Foreign Market Value

In accordance with section 773(a) of the Act, we calculated foreign market value based on home market sales.

We calculated home market prices based on c. & f. or ex-factory, packed prices on shipped merchandise to unrelated distributors. From these prices we deducted, where appropriate, inland freight and debentures. We made circumstances of sale adjustments for intratransit warehousing and for differences between U.S. and home market credit costs, in accordance with section 353.15 of the Commerce

Regulations. We also deducted home market packing cost and added the cost of U.S. packing, pursuant to 773(a)(1) of the Act.

We have preliminarily determined that two types of merchandise subject to this investigation, Korean Standard 3568 and Union Standard, are "such or similar" to ASTM A-500 rectangular welded carbon steel pipes and tubes sold in the United States, in accordance with the provisions of section 771(16) of the Act.

Suspension of Liquidation

In accordance with section 733(d) of the Act, we are directing the United States Customs Service to suspend liquidation on RWPT from Korea which are entered, or withdrawn from warehouse, for consumption, on or after the date of publication of this notice in the *Federal Register*. The Customs Service shall require a cash deposit or the posting of a bond equal to the estimated weighted-average amount by which the foreign market value of the merchandise subject to this investigation exceeds the United States price. The suspension of liquidation will remain in effect until further notice. The weighted-average margins are as follows:

Manufacturer	Weighted average margin percentage
Union Steel Manufacturing Co., Ltd.	3.699
All Other Manufacturers/Producers/Exporters	3.699

Verification

In accordance with section 778(a) of the Act, we will verify all data used in reaching a final determination in this investigation.

ITC Notification

In accordance with section 733(f) of the Act, we will notify the ITC of our determination. In addition, we are making available to the ITC all nonprivileged and nonconfidential information relating to this investigation. We will allow the ITC access to all privileged and confidential information in our files, provided the ITC confirms that it will not disclose such information, either publicly or under an administrative protective order, without the written consent of the Deputy Assistant Secretary for Import Administration.

Public Comment

In accordance with § 353.47 of the Commerce Department Regulations, if

requested, we will hold a public hearing to afford interested parties an opportunity to comment on this preliminary determination at 1 p.m. on December 15, 1983, at the United States Department of Commerce, Room 6602, 14th Street and Constitution Avenue, NW., Washington, D.C. 20230. Individuals who wish to participate in the hearing must submit a request to the Deputy Assistant Secretary for Import Administration, Room 3099B, at the above address within 10 days of this notice's publication. Requests should contain: (1) The party's name, address, and telephone number; (2) the number of participants; (3) the reason for attending; and (4) a list of the issues to be discussed. In addition, prehearing briefs in at least 10 copies must be submitted to the Deputy Assistant Secretary by December 9, 1983. Oral presentations will be limited to issues raised in the briefs. All written views should be filed in accordance with 19 CFR 353.48 within 30 days of publication of this notice, at the above address and in at least 10 copies.

Dated: October 24, 1983.

Alan F. Holmer,

Deputy Assistant Secretary for Import Administration.

(FR Doc. 83-29528 Filed 10-28-83; 8:45 am)

BILLING CODE 3510-06-M

[C-565-001]

Canned Tuna From the Philippines; Final Affirmative Countervailing Duty Determination and Countervailing Duty Order

AGENCY: International Trade Administration, Commerce.

ACTION: Notice.

SUMMARY: We have determined that certain benefits which constitute bounties or grants within the meaning of the countervailing duty law are being provided to manufacturers, producers, or exporters in the Philippines of canned tuna, as described in the "Scope of Investigation" section of this notice. The net bounty or grant is 0.72 percent *ad valorem*.

EFFECTIVE DATE: October 31, 1983.

FOR FURTHER INFORMATION CONTACT:

John J. Kenkel or Melissa G. Skinner, Office of Investigations, Import Administration, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue, NW., Washington, D.C. 20230, telephone (202) 377-3464 or 377-3530.

SUPPLEMENTARY INFORMATION: Final Determination and Order

Based upon our investigation, we determine that certain benefits which constitute bounties or grants within the meaning of section 303 of the Tariff Act of 1930, as amended (the Act), are being provided to manufacturers, producers, or exporters in the Philippines of canned tuna as described in the "Scope of Investigation" section of this notice. We determine the net bounty or grant is 0.72 percent *ad valorem*.

Case History

On March 11, 1983, we received a petition in proper form from the Tuna Research Foundation, Inc., on behalf of the U.S. industry producing canned tuna. The petition alleged that certain benefits which constitute bounties or grants within the meaning of section 303 of the Act are being provided, directly or indirectly, to the manufacturers, producers, or exporters in the Philippines of canned tuna.

Since the Philippines is not a "country under the Agreement" within the meaning of section 701(b) of the Act, section 303 of the Act applies to this investigation. Under this section, since the merchandise being investigated is dutiable, the domestic industry is not required to allege that, and the U.S. International Trade Commission is not required to determine whether, imports of this product cause or threaten to cause material injury to a U.S. industry. We found the petition to contain sufficient grounds upon which to initiate a countervailing duty investigation, and on March 31, 1983, we initiated a countervailing duty investigation (48 FR 15505).

On April 20, 1983, we presented a questionnaire concerning the allegations to the government of the Philippines at its embassy in Washington, D.C. Subsequently, on May 23, 1983, we determined that the case was "extraordinarily complicated" within the meaning of 703(c)(1)(B) of the Act, and we published a notice of the postponement of the preliminary countervailing duty determination (48 FR 22976). On June 17, 1983, we received the responses to the questionnaire. Verification of the responses was conducted July 5-20, 1983, in the Philippines.

Of the eight producers which responded to the questionnaire, we selected for verification the six companies which accounted for 85 percent, by value, of exports to the U.S. The six companies were: Century Canning Corp., Judric Canning Corp., Philippine Tuna Canning Corp., Pure Foods Corp., Sancanco Canning Corp.,

and Premier Industrial & Development Corporation (Premier). We verified at the company and government levels the responses of the six companies, except Premier, which refused to cooperate. One additional exporter, Ayala, was discovered during verification and information for that company was collected. We conducted an additional verification in September of Mar Fishing Co., South Pacific Export Company, and Premier Industrial & Development Corporation. In addition, we verified new information received from several of the previously verified companies.

We issued an affirmative preliminary determination on August 8, 1983 (48 FR 37051). We preliminarily determined that there was reason to believe or suspect that certain benefits which constitute bounties or grants within the meaning of the Act, are being provided to manufacturers, producers, or exporters in the Philippines of canned tuna. We preliminarily determined the net bounty or grant was 1.30 percent *ad valorem*. The programs preliminarily determined to bestow countervailable benefits were: preferential short-term rediscounted loans, certain tax incentives available under the Omnibus Investments Code, including tax deduction for expansion reinvestment, tax deduction for direct labor costs and local raw materials, tax exemption on imported capital equipment and a tax deduction for export trading companies.

We directed the U.S. Customs Service to suspend liquidation of all entries of the product subject to the preliminary determination which were entered, or withdrawn from warehouse, for consumption, and to require a cash deposit or the posting of a bond on this product in an amount equal to the estimated net bounties or grants.

Our notice of preliminary determination gave interested parties an opportunity to submit oral or written views. We held a public hearing at which representatives of the Philippine government, counsel for the petitioners, respondents and interested parties participated.

Scope of Investigation

The product covered by this investigation is tuna packed or preserved in any manner, not in oil, in airtight containers. The merchandise is currently classified under item numbers 112.3020, 112.3040, and 112.3400 of the *Tariff Schedules of the United States Annotated (TSUSA)*.

The Ayala Corporation, Century Canning Corp., Judric Canning Corp., Mar Fishing Corp., Philippine Tuna Canning Corp., Premier Premier Industrial & Development Corporation,

Pure Foods Corp., Sancanco Canning Corp., and South Pacific Export Company are the only known producers and exporters in the Philippines of the subject product exported to the United States. Two companies referred to in the petition (Diamond Seafood Corp. and Santa Monica Canning Corp.) were not producers or exporters of tuna during the period for which we are measuring subsidization, which is the 1982 calendar year or 1982 corporate fiscal year, as appropriate.

Analysis of Programs

Based upon our analysis of the petition, the responses to our questionnaire, two verifications, the hearing and comments by interested parties, we have determined the following:

I. Programs Determined to Confer Bounties or Grants

We determine that bounties or grants are being provided to manufacturers, producers, or exporters in the Philippines of canned tuna under the programs of the government of the Philippines listed below.

A. Preferential Export Loans. The petition alleges benefits in the form of preferential loans provided through the Central Bank's operation of a loan rediscounting facility. The Department requested from each of the companies under investigation information on all loans outstanding during the period for which we are measuring subsidization.

The export packing credit (EPC) program is a rediscounting program offered by the Central Bank of the Philippines which provides credit on eligible paper with original maturity of one year or less. Upon receipt of a letter of credit, an exporter may request from a commercial bank a loan predicated on the letter of credit, to finance working capital and other requirements. Exporters are charged a maximum interest rate of 12 percent, including fees. The Central Bank rediscounts up to 80 percent of the letter of credit at a rate of three percent. During the period of investigation, the maximum commercial interest rate for non-rediscounted paper was 18 percent. This program is government directed and controlled, available solely to exporters, and provides for interest rates that are less than those for comparable commercially available loans. Therefore, we determine that this program confers a bounty or grant upon exporters of canned tuna.

The benefit provided by this program was calculated by taking the difference between the actual interest paid by the

companies on export packing credits predicated on exports of tuna not in oil and the amount of interest they would have paid using a comparable commercial interest rate. Since we could not identify a national average commercial interest rate, we used as our benchmark the average interest rate on all short-term loans, other than export packing credits, outstanding for all the tuna companies in the Philippines in 1982. This benchmark was compared to the average interest rate paid by each company on its EPCs. All but two companies paid an average interest rate below the benchmark. We took the difference between the two interest rates and applied it to the annualized principal amount of EPCs. The resulting figure was the amount of benefit for all exports. We then multiplied that benefit amount by the percentage that that company's exports to the U.S. of canned tuna not in oil were of its total exports in order to determine the amount of benefit to be applied to U.S. sales. We allocated the amount of the benefit over the value of all exports to the U.S. of canned tuna, because export packing credits are available only to exporters. On this basis, we calculated an *ad valorem* benefit of 0.03 percent.

B. Tax Incentives Available Under the Omnibus Investments Code. The petition alleges that the Omnibus Investments Code (Code)—which provides a variety of investment incentives only to registered enterprises—confers bounties or grants. The allegation includes: (1) incentives to registered enterprises (Article 45 of the Code); (2) incentives to registered export producers (Article 48 of the Code); and (3) incentives to registered export traders (Article 49 of the Code).

The Code, Presidential Decree No. 1789, establishes various tax incentives for the purpose of accelerating development of the economy of the Philippines by encouraging domestic and foreign investments in projects to develop various sectors of the economy, to achieve self-reliance in basic requirements of food and raw materials, to encourage exports of Philippines products and services, and for other purposes.

The Board of Investments (Board) is composed of five governors appointed by the President of the Philippines, and is responsible for administering the Code. In this regard, the Board prepares an annual Investment Priorities Plan (Plan) listing the "preferred areas of investment." These "areas" are areas of economic activity (rather than geographic areas) and firms operating in these areas are entitled to apply for

incentives under the Code. The Board "registers" individual firms operating in the Philippines which wish to take advantage of incentives. The Code incentives are limited to firms which are "registered enterprises," "registered export producers," "registered export traders," or "registered service exporters." Registration generally is limited by government direction to firms in industries included in the Plan. The category "Processed food (fish and other seafood)," which includes canned tuna, is included in the 1982 Plan.

A "registered export producer" is defined in the Code as a registered producer which manufactures and exports or sells for export products that meet certain standards set by the Board. A "registered export trader" is defined as a registered export trading company that trades the product of registered export producers. We determine that the following incentives are provided to registered export producers and export traders under the Code and confer bounties or grants because they are contingent upon export performance and/or stimulate export over domestic sales.

One or more of the canned tuna registered export producers/export traders benefited from the following incentives during the period of investigation:

1. Article 48(b) provides a tax deduction for direct labor costs and local raw materials. A registered export producer may, for the first five years from the date of its registration or initial commercial operation, deduct from its total taxable income from domestic and export sales by its registered operations an amount equivalent to the direct labor costs of its domestic and export products and the local raw material costs incurred in the production of its export products. The total deduction may not exceed 25 percent of the company's total export revenue. One canned tuna producer used this incentive during the period for which we are measuring subsidization. The benefit is the tax savings which were claimed under this program on the tax return filed during the period of investigation.

2. Article 48(f) provides that, within seven years of the date of its registration, a registered export producer is exempt from payment of 100 percent of the tariff duties and compensating tax payable on imported capital equipment and accompanying spare parts, provided that it obtains advance Board approval for the importation. Two canned tuna producers used this benefit during the period for which we are measuring subsidization.

The exemption for registered export producers under Article 48(f) is granted "under the same conditions provided for in Article 45(d) of this Code," which is discussed below in Section II of this final determination. The export subsidy, therefore, is the difference between the total amount of the exemptions allowed under Article 48(f) during the year for which we are measuring subsidization and the amount that would have been allowed (50 percent of the total) had the claim been filed under Article 45(d).

3. Article 49(d) provides a tax deduction to export trading companies. For the first five years from the date of its registration or initial commercial operation, a registered export trading company may deduct an amount equal to 20 percent of its total export sales. This deduction is made from taxable income attributable to all registered operations of the firm. However, the Board may apportion up to one half of this deduction to the registered export producer which is exporting through the registered trader. One canned tuna producer and one export trading company shared this benefit. The amount of the benefit is the tax savings which were claimed on the tax return filed during the period of investigation. The tax savings for one of these companies, however, was zero.

The benefits received under Articles 48(b), 48(f) and 49(d) constitute export subsidies and, as such, were allocated by taking the amount attributable to U.S. sales over total export sales of canned tuna to the U.S. The use of these export incentives resulted in a net bounty or grant of 0.69 percent *ad valorem*.

II. Programs Determined Not To Confer Bounties or Grants

We determine that bounties or grants are not being provided to manufacturers, producers, or exporters in the Philippines of canned tuna under the following programs.

A. Selected Articles of the Omnibus Investments Code. 1. The petition alleges that Article 45 of the Code—which grants registered enterprises certain incentives—confers bounties or grants. We found at verification that nearly all industries in the Philippines, as classified at the four-digit level of the Philippine Standard Industrial Code (PSIC), are included in the 1982 Investment Priorities Plan. We determine that benefits granted by Article 45 are in law and practice available to more than a specific enterprise or industry or group of enterprises or industries in the Philippines. Therefore, none of the incentive programs available under

Article 45 are countervailable domestic subsidies. We also determine that the incentives available under Article 45 are not contingent on export performance and, therefore, are not export subsidies.

2. The petition also alleges that Article 48(a) of the Code confers bounties or grants. It allows registered export producers to receive tax credits equal to the sales, compensating and specific taxes and duties paid on the supplies, raw materials and semi-manufactured products used in the production of, even if not physically incorporated in, the exported products. In its response, the government of the Philippines stated that tax credits made available under this article are only for raw materials and semi-manufactured products used in production actually forming a part of the product. They further stated that supplies not physically incorporated in the product are not eligible for this tax credit. We verified that companies which used Article 48(a) had received this tax credit for taxes paid on materials physically incorporated in the exported product. Since the tax credit does not exceed taxes actually paid and the materials are physically incorporated in the product, we determine that Article 48(a) of the Code does not confer bounties or grants.

B. Rediscounted Food Production Credits. Article 1.2 of Central Bank Circular 784 also provides for another type of loan known as "unsupervised credits". The credits are given on basic food production and agricultural/industrial/commercial paper. Loans which are rediscounted by commercial banks with the Central Bank under this program are available to producers of canned tuna at a ceiling interest rate of 14 percent, including fees. One tuna company obtained food production credits. We verified that loans obtained under Article 1.2 are available to all industries in the Philippines. The fact that there are two subsections under Article 1.2 is only of historical significance, because Circular 784 codifies earlier programs. Article 1.2 is intrinsically one program to which all industries have equal access. It is broken down into subsections only so that companies eligible under the various older programs will know that those programs still exist.

C. Marginal Deposit Requirements. The petition alleges that the Central Bank's relaxed cash deposit requirement on letters of credit opened by Philippine importers confers bounties or grants. The Philippine government's response states that the relaxed marginal deposit requirement is a guideline issued by the

Bankers Association of the Philippines (BAP). We verified that the BAP is an independent association which is not owned or controlled by the government. Since the BAP operates independently of the government and the Central Bank, and the guidelines reflect its commercial considerations, we determine that the BAP's guideline on relaxed marginal deposits does not confer bounties or grants.

D. Philippine Export and Foreign Loan Guarantee Corporation. The petition alleges that the Philippine Export and Foreign Loan Guarantee Corporation (PHILGUARANTEE) confers bounties or grants through guarantees lowering the cost of credit available for Philippine exports. Through PHILGUARANTEE, the government of the Philippines guarantees both local and foreign banking and financial institutions against any loss that may be incurred in connection with the grant of loans or credit accommodations to Philippine exporters or producers of export products. In its response the government of the Philippines stated that PHILGUARANTEE provides guarantees on bid, performance and advance payment bonds, as well as working capital loans. We verified that guarantees are available from private institutions at the same charges as from PHILGUARANTEE. Thus, we determine that guarantees provided by PHILGUARANTEE do not confer bounties or grants.

E. Development Bank Loans. The petition alleges that loans are granted at preferential interest rates to companies producing the products under investigation by the Development Bank of the Philippines, a government-owned bank. The Development Bank can grant loans to any company in the agricultural or industrial sectors, to municipalities and individuals. We verified that in practice the loans are available without restriction, and that the loans are available without restriction, and that the bank granted loans to one tuna producer only on the basis of commercial considerations. Thus, we determine that loans from the Development Bank do not confer bounties or grants.

III. Programs Determined Not To Be Used

We have determined that the following programs which were identified in the notice of "Initiation of Countervailing Duty Investigation, Canned Tuna from the Philippines" are not being used by the manufacturers, producers, or exporters in the Philippines of canned tuna:

A. Selected Articles of the Omnibus Investments Code.

1. The petition alleges that Article 45(a) of the Code confers a bounty or grant. Under this article, all enterprises registered with the Board of Investments may deduct from taxable income all capitalized organizational and pre-operating expenses, over not more than ten years from the beginning of operations. We verified that none of the companies deduct organizational and pre-operating expenses under 45(a) of the Code. Those companies which did take a deduction for pre-operating expenses did so under the Philippine Bureau of Internal Revenue regulations.

2. The petition alleges that Article 45(c) of the Code confers a bounty or grant. Under this article, a registered enterprise may carry forward all net operating losses incurred in any of the first ten years of operation. Such losses may be carried forward for six years immediately following the year in which the loss was incurred, and may be deducted from taxable income. We verified that no company under investigation has deducted losses under this article.

3. The petition alleges that Article 45(d) of the code confers bounties or grants. Article 45(d) allows registered producers a tax exemption on imported capital equipment in the amount of 50 percent of the tariff duties and compensating tax payable on imported capital equipment and accompanying spare parts. Article 48(f) provides registered export producers with a similar exemption. Two producers did receive a tax exemption on imported capital equipment. We verified that they took this exemption under Article 48(f).

4. The petition alleges that Article 45(e) of the Code confers bounties or grants. Under Article 45(e) a registered enterprise which has purchased domestically produced equipment may take a tax credit equal to 100 percent of the value of compensating tax and customs duties that it would have paid had it imported the machinery, equipment and spare parts. We verified that none of the companies under investigation had taken this tax credit on domestically purchased capital equipment.

5. The petition alleges that Article 45(f) of the Code confers bounties or grants. This Article allows a registered enterprise to take a tax credit for taxes withheld on interest payments on foreign loans when no such credit is available to the lender-remitter in its own country and the registered enterprise has assumed the liability for payment of the tax due from the lender-

remittes. We verified that none of the companies under investigation claimed a tax credit under this program.

6. The petition alleges that Article 45(l) of the Code confers bounties or grants. Article 45(l) allows registered enterprises to deduct from taxable income 50 percent of all expenses for labor training incurred for upgrading the productivity and efficiency of unskilled labor, provided that such deduction does not exceed 10 percent of all direct labor wages for a given year. We verified that the companies under investigation had not used this program.

7. The petition alleges that Article 48(e) of the Code confers a bounty or grant. This Article allows a registered export producer an additional deduction from taxable income equal to one percent of the increase in its exports when it uses a new brand name that distinguishes its products from non-Philippine products. We verified that none of the companies used this program.

8. The petition alleges that Article 51 of the Code confers bounties or grants. This article provides for financial assistance to registered enterprises through the preferential granting of government loans. The government of the Philippines responded that Article 51 of the Code merely sets forth a policy that government financial institutions should accord priority to applications for financing made by Board-registered firms. However, this policy is not binding on either government or other financial institutions. We verified that the Article 51 policy is not always followed in practice. In addition, there is no evidence on the record that any company had access to loans as a result of this Article.

9. The petition alleges that Article 52 of the Code confers bounties or grants. Article 52 provides for financial assistance to registered enterprises through preference for private financial assistance. It also authorizes the Insurance Commissioner to allow insurance companies to invest in new issues of stock of registered enterprises. In their responses the companies stated they had not received any preferential loans. We verified that none of the outstanding company stock was held by any insurance companies.

10. The petition alleges that Article 53 of the Code confers bounties or grants. Article 53 provides for financial assistance to employees of registered enterprises through government loans for the purchase of shares of stock in registered enterprises, at a rate not to exceed six percent per annum. We found no evidence of any use of this program at verification.

11. The petition alleges that Article 54 of the Code confers bounties or grants. This Article provides for the creation of an Institute of Export Development which promotes exports by providing government-funded assistance. The government of the Philippines responded and we verified that the Institute of Export Development has not been operational in the last three years. It further stated that the tuna producers never received any assistance from the Institute. The companies responded that they had not received any assistance from the Institute.

B. *Export Credit Insurance and Guarantee Corporation.* The petition alleges the government of the Philippines confers bounties or grants through the Export Credit Insurance and Guarantee Corporation which issues insurance policies and certificates of guarantee against credit risks arising out of or in connection with export transactions. The government of the Philippines responded and we verified that although the corporation was established, it has never become operational.

Petitioner's/Domestic Industry's Comments

Comment 1

Article 45 of the Code is a countervailable domestic bounty or grant because it is not generally available to all firms similarly situated. The list of preferred areas of economic activity entitled to investment incentives that constitute the Investment Priorities Plan ("The Plan") contains very few of the relevant "economic activities" included in either the Philippine Standard Industrial Code (PSIC) or the United Nations Standard International Trade Classification (UNSITC).

DOC Position

We have determined that the incentives of Article 45 of the Code are available to more than "a specific enterprise or industry, or group of enterprises or industries." The code does not by its terms limit availability to a specific group of enterprises or industries, and the Plan includes a large number of diverse industries. Therefore, neither the Code nor the Plan is a subsidy, as defined in Section 771(5) of the Act.

Comment 2

The incentives provided under the Code are countervailable export bounties or grants because the Code limits the incentives primarily to certain export-oriented industries listed in the Plan, the registration requirements for

individual enterprises are export-oriented, and the Board uses export-oriented criteria in selecting projects to receive incentives under the Code.

DOC Position

Export promotion is an important consideration for the Board in the implementation of the provisions of the Code, but it does not appear to be the dominant consideration in the Board's designation of each "preferred area of investment" in the Plan, or in its registration of each "registered enterprise" or each project to receive incentives. We have determined that incentives under portions of Articles 48 and 49 are export subsidies, because they are given contingent upon export performance (only to "registered export producers" or registered export traders") and because they stimulate export over domestic sales. In contrast, the programs under Article 45 of the Code have no such inherent limitations, and in practice the Board makes them available to firms with varying degrees of export capacity or none at all.

Comment 3

The Code incentives are countervailable because both the priority industry selection process for the Plan and the company registration and project approval process depends entirely on the subjective discretion of the Board.

DOC Position

We obtained a copy of the criteria used by Board to register companies under the Code. We found overall that the criteria are objective. While some criteria by necessity must be broad in order to be all encompassing and flexible, we found no instance of alleged "subjective" criteria.

Comment 4

The government of the Philippines enacted into law two new incentives in April 1983. These incentives were composed of two types of tax credits. The Department should include the use of these benefits in its calculations.

DOC Position

The government of the Philippines requires that firms registered with the Board under the Code must register again with Board to obtain the newly enacted tax credits. However, companies which elect to receive benefits under the 1983 law must renounce the benefits available under the old law. The Department verified that none of the tuna canners has

applied for registration under the 1963 law.

Comment 5

The Department should allocate tax benefits obtained by the tuna canners over the life of the plant and capital equipment for which they were received.

DOC Position

The Department allocates tax benefits received in the period of investigation to that period. Tax incentives provide a benefit to the extent that they reduce the firm's current tax liability. As such, this is a benefit which is realized on an annual basis.

Comment 6

The Department should countervail the use of accelerated depreciation since it is available only to firms registered with the Board of Investments for benefits available under Article 45 of the Code.

DOC Position

The Department found that one firm used accelerated depreciation under the authority of Article 45 of the Code during the period of investigation. In this case, the net benefit to that firm, however, was negative during the period of investigation.

Comment 7

The Department should countervail the use of tax deductions for preoperating and organizational expenses since they are available only to Board-registered firms.

DOC Position

In order for the Department to consider whether this program is a bounty or grant under Article 45, we would have to first determine that one or more tuna companies had taken such a deduction under that Article. None of the tuna firms in this investigation requested a tax deduction for preoperating and organizational expenses under the authority of the Code. They took this deduction under the authority granted by the Philippine Internal Revenue Code, which is generally available. Therefore, we determine that this program was not used.

Comment 8

The Department should countervail the food production credits available under Article 1.2 of the Central Bank Circular 784 concerning rediscounted loans, since by its very title only companies producing food are eligible.

DOC Position

Article 1.2 of the Central Bank Circular 784 codifies several earlier programs. Because of this, it is divided into two subsections: food production credits and credits for agricultural/industrial/commercial paper. We found that all industries have equal access to the loans offered in Article 1.2 without preference of one industry over another.

Comment 9

The Department used the wrong benchmark in comparing preferential loans to a national average rate. The Department should not consider the maximum legal rate of 18 percent. Instead, the Department should use a rate above the legal maximum because the banks in the Philippines normally charge above the legal maximum, generally in the range of 18 to 27 percent. While there is no documentary evidence to support this higher rate, bankers have admitted to the practice of increasing loans fees, etc., in order to increase the effective rate of short-term loans.

DOC Position

For short-term commercial loans the Department found no evidence of interest rates in excess of the legal maximum during the period of investigation. Because no statistics were available on a national average short-term interest rate, we calculated an average interest rate for the tuna canning industry. We calculated this rate by taking an average of all short-term loans other than export packing credits used by all of the tuna canning companies during the period of investigation.

Comment 10

The Department should use the current interest rates in existence today, not those prevalent during the period of investigation.

DOC Position

In determining whether bounties or grants have been conferred, we consider the situation of the companies and government during the period of investigation. In the event of an affirmative determination, the Department may consider relevant changes in circumstances since the period of investigation for the purpose of estimating the deposit rate.

Comment 11

The Department should countervail the zero percent marginal deposit rate that exporters pay on import letters of credit because this rate is set by the government, instead of by the BAP

predicated on commercial consideration, and acts as a benefit to those exporters who first obtain permission from Board to import goods.

DOC Position

We verified that the BAP has the authority to set the marginal deposit rate on import letters of credit. While the Central Bank is a member of this association, it does not have authority to dictate the terms of these rates. We found that in fact, the BAP does issue guidelines for the marginal deposit rates and that some banks do not follow those guidelines. We found no evidence that the Central Bank either issued guidelines or attempted to enforce those guidelines issued by the BAP against those banks failing to adhere to them.

Comment 12

The Department should countervail loans given by the Development Bank of the Philippines, since it gives loans to less than creditworthy firms based on non-commercial considerations at interest rates lower than those given to its creditworthy customers or given by commercial banks.

DOC Position

The Bank is authorized by its charter to grant loans to a broad cross section of industries. The mere fact that it has extended loans to companies that are poor risks is not sufficient reason to countervail them. During the period that one tuna producer received loans from the DBP, the interest rates charged to that company were in line with those charged by the Bank to other creditworthy customers, based on commercial considerations. At that time the Bank was one of three banks in the Philippines that issued long-term loans. All three banks obtained their funds from the same source and re-lent the money at similar increments over their costs.

Comment 13

The Department should countervail the benefits given to Diamond Seafoods. Although Diamond has not yet begun operations, it is believed that Century Canning has bought a portion, if not all, of the company. Thus, the benefits accruing to Diamond should be attributed to its new owner, Century.

DOC Position

We verified that Century has no equity interest in Diamond Seafoods. Since Diamond has not produced or exported to the United States any tuna during the period of investigation, we

have not included any alleged benefits to it in our calculations.

Comment 14

The Department should countervail loan guarantees given by PHILGUARANTEE since they were not given at commercial rates and the interest rates for the loans in question would have been higher but for these guarantees.

DOC Position

We verified that PHILGUARANTEE has given its guarantees to firms at commercial rates. We compared its fees to those of several Philippine banks for guarantees of similar loans. Indeed, we found that commercial bank terms are in some respects less strict than those of PHILGUARANTEE.

Respondent's Comments

Comment 1

Assuming that Article 45 of the Code is generally available, it should be used as the benchmark for evaluating the provisions of Articles 48 and 49. In the event that a firm would have been entitled to a deduction in question under a generally available tax provision, then only the portion of the deduction which exceeds that generally available should be considered countervailable.

DOC Position

Programs available under Article 48(b) and 49(d) are provided in addition to programs generally available under other laws. Under Article 48(f) of the Code, the benefits were provided "under the same conditions" as the generally available benefits under Article 45(d). Since the latter program was incorporated by reference into the former program, we determined that the export subsidy is the additional amount of benefits available under Article 48(f) to registered export producers.

Comment 2

If the Department views accelerated depreciation as countervailable, it should call it a tax deferral and treat it as an interest-free loan. In addition, the Department should use "negative accelerated depreciation" as an offset to other benefits received from the Board.

DOC Position

We did not find any countervailable benefit accruing on accelerated depreciation during the period of investigation. While "negative accelerated depreciation" may be considered an offset by the respondents, it is not provided for in the Act. Therefore, we have not considered it.

Comment 3

The Department should take cognizance in its decision of any tax benefit which has been re-computed, revoked or otherwise modified.

DOC Position

See the Department's position concerning the petitioner's/domestic industry's comment ten.

Comment 4

The Department should calculate any *ad valorem* preferential loan benefits based upon U.S. market share of the benefit recipients.

DOC Position

We agree that the purpose of a countervailing duty investigation is to determine the subsidy amount (if any) on goods exported to the United States. Thus, the calculation of benefits received by a firm under investigation should take account of the ratio of exports to the U.S. to total exports or, in the case of domestic subsidies, total sales.

Comment 5

Neither section 1.2 nor 1.4 of the Central Bank Circular 784 confers bounties or grants within the meaning of the Act because they are not government directed. Any incentive given by the Central Bank to commercial banks as a result of rediscounting does not convey a subsidy to the tuna canners.

DOC Position

We found the loans granted under Article 1.2 to be generally available. Therefore, they are not countervailable and we have not included them in our calculations. Since the government, through the Central Bank, is responsible for the rediscounting program for export packing credits under Article 1.4, we deem the program to be government directed and to confer a bounty or grant merely because it is available solely to exporters.

A subsidy upon the exported merchandise exists to the extent that the program results, as here, in terms and conditions more favorable to the exporter than are otherwise available.

Comment 6

Even if Article 1.4 of Central Bank Circular 784 is countervailable, Article 1.2 is not because it is generally available to all agricultural and industrial firms and, therefore, should be used as the benchmark for any loans determined to be countervailable.

DOC Position

Normally we would use a national average interest rate as the benchmark to compare with preferential loans. The Philippines did not keep statistics for such a rate for the period of investigation. Therefore, we calculated a rate for the tuna canning industry as a whole. We used as our benchmark the average short-term interest rate for all loans other than export packing credits obtained by all the canned tuna producers during the period of investigation.

Comment 7

A loan taken during the investigatory period which remains outstanding after the end of the period should be considered only for the benefit bestowed during the period.

DOC Position

In order to facilitate computation of the countervailable benefit on short-term export packing credits, we have ignored the portion of 1981 loans falling into 1982 and, instead, taken the full amount of all loans obtained in 1982, even if they were not paid until 1983.

Verification

In accordance with section 776(a) of the Act, we verified the data used in making our final determination. During this verification, we followed normal procedures, including meetings with government officials and on-site inspection of the records and operations of the appropriate government agencies and tuna companies.

Suspension of Liquidation

The suspension of liquidation ordered in our preliminary affirmative determination shall remain in effect until further notice. The net bounty or grant for duty deposit purposes is 0.72 percent *ad valorem* for each manufacturer, producer or exporter.

As required by section 706(a)(3), we are directing the United States Customs Service to require a cash deposit in the amount indicated above for each entry of the subject merchandise entered or withdrawn from warehouse, for consumption, on or after the date of publication of this notice in the Federal Register, and to assess countervailing duties in accordance with sections 706(a)(1) and 751 of the Act. The net bounties or grants for the period we are measuring subsidization are smaller than the 1.30 percent *ad valorem* bounty or grant preliminarily determined. Therefore, according to section 707(a)(2) of the Act, if the amount of the cash deposit or bond required as security for

an estimated countervailing duty under section 706(d)(2) is different from the amount determined under this countervailing duty order, then the difference shall be refunded or released, to the extent that the cash deposit or bond or other security is lower than the duty under the order.

Administrative Procedures

The Department has afforded interested parties an opportunity to present their views in accordance with its regulations (19 CFR 355.34(a)). Oral and written views have been received and considered.

The Department intends to conduct an administrative review within 12 months of publication of this determination as provided in section 751 of the Act.

This notice is published pursuant to section 303 and 706 of the Act (19 U.S.C. 1303, 1671e).

Dated: October 24, 1983.

William T. Archey,
Acting Assistant Secretary for Trade
Administration.

[FR Doc. 83-28520 Filed 10-28-83; 8:45 am]

BILLING CODE 3510-06-01

[C-508-064]

Fresh Cut Roses From Israel; Preliminary Results of Administrative Review of Countervailing Duty Order

AGENCY: International Trade
Administration, Commerce.

ACTION: Notice of Preliminary Results of
Administrative Review of
Countervailing Duty Order.

SUMMARY: The Department of Commerce has conducted an administrative review of the countervailing duty order on fresh cut roses from Israel. The review covers the period October 1, 1980 through September 30, 1981. As a result of the review, the Department has preliminarily determined the net subsidy to be 27.94 percent *ad valorem*. Interested parties are invited to comment on these preliminary results.

EFFECTIVE DATE: October 31, 1983.

FOR FURTHER INFORMATION CONTACT: Laura Kneale or Alan Long, Office of Compliance, International Trade Administration, U.S. Department of Commerce, Washington, D.C. 20230; telephone: 202, 377-2788.

SUPPLEMENTARY INFORMATION:

Background

On August 12, 1983, the Department of Commerce ("the Department") published in the Federal Register (48 FR 38635) the final results of its last administrative review of the

countervailing duty order on fresh cut roses from Israel (45 FR 58516, September 4, 1980) and announced its intent to conduct the next administrative review. The Department has now conducted that review.

Scope of the Review

Imports covered by the review are shipments of Israeli fresh cut roses. Such merchandise is currently classifiable under item 192.1800 of the Tariff Schedules of the United States Annotated. The review covers the period October 1, 1980 through September 30, 1981 which is the exporting year for roses. The Department reviewed the programs found countervailable in the previous administrative review and three additional programs which we preliminarily determine to be countervailable.

Analysis of Programs

The Israeli government did not respond to the Department's questionnaire covering the current review period. Therefore, we calculated the benefits from the following countervailable programs using the best information available. Sources include information collected during the previous administrative review and published documents.

1. The Encouragement of Capital Investments Law ("the ECIL")

The purpose of the ECIL is to promote certain national objectives, including exporting, through the use of various financial and fiscal incentives. To become eligible for these benefits, individual enterprises must apply for government approval of each investment project.

Rose growers have not been approved for ECIL benefits. Two rose exporters and eight packing houses were approved as of the previous period of review.

For the current period of review, the following benefits were provided under the ECIL:

A. Five-year exemption from payment of 3/4 of the property tax on buildings. This program was repealed effective June 1978. For the period of review, benefits accrued only to those enterprises approved prior to repeal. Further, the Israeli government abolished all property taxes on buildings in April 1981. Therefore, during the period of review, approved enterprises received benefits from this program for six months.

We calculated the benefit under this program by multiplying the property value of each approved enterprise by one-half of the reduction in the property

tax rate. To calculate the benefit to roses, we multiplied total tax savings by the ratios of rose to flower exports during the 1979/80 season, and divided this amount by estimated rose exports during the 1980/81 season. Based on this calculation, we preliminarily determine a benefit of 0.02 percent *ad valorem* for the period of review.

Further, we preliminarily determine that the countervailing duty cash deposit rate should not incorporate an amount for this program since future entries will not benefit from such tax savings.

B. Ten-year exemption from 3/4 of the property tax on stock and machinery/equipment. This program was also repealed in June 1978. The same enterprises which were eligible for benefits under the five-year exemption were eligible for benefits under this program during the period of review.

We have no information on the value of equipment for approved enterprises during the review period. We used as the best information available the amount of tax savings under this program during the 1979/80 period. To calculate the subsidy rate on roses, we multiplied total tax savings by the ratios of total rose to flower exports during the 1979/80 season, and divided this amount by estimated total rose exports during the current review period. Based on this calculation, we preliminarily determine a benefit of 0.01 percent *ad valorem* for the 1980/81 season. This is also the estimated *ad valorem* benefit for duty deposit purposes.

C. Investment grants based on the cost of property and/or machinery/equipment of an approved project. Since 1977, seven enterprises involved in exporting roses have received cash grants under these programs. In computing the benefit during the previous administrative review, we employed the grant methodology set out in Appendix 2 to the notice of "Affirmative Countervailing Duty Determination" on certain steel products from Belgium (47 FR 39304, 39316; August 24, 1982) ("Appendix 2"). In accordance with this methodology, we calculated the present value allocation of all grants received since 1977.

The benefit under this program in the current review period is the sum of the present value allocation of all past grants calculated for the previous review and the present value allocation of any grants received during the current review period. To estimate the amount of grants provided during the current review period, we used as best evidence the highest aggregate grant amount provided to the companies in previous years.

APPENDIX G

GAO REPORT ON CUSTOMS CORRECTING A DEFICIENCY IN ADMINISTERING
THE QUOTA ON IMPORTED TUNA

REPORT BY THE U.S.

General Accounting Office

Customs Has Corrected A Deficiency In Administering The Quota On Imported Tuna

One of Customs' responsibilities is to administer import quotas. Under a tariff-rate quota, the duty rates change as the quantity of imports varies. Customs has interpreted the Tariff Schedules as requiring that tuna imported from American Samoa be charged against quota limits. However, from at least 1970 to 1978 Customs' Los Angeles District, through which all American Samoa tuna enters the United States, did not do so.

In two of these years--1970 and 1972--higher duties would have been triggered because quotas were exceeded. The exact amount of additional duties is indeterminable.



GAO/GGD-83-34
DECEMBER 27, 1982



UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

**GENERAL GOVERNMENT
 DIVISION**

B-209675

The Honorable John B. Breaux
 Chairman, Subcommittee on Fisheries
 and Wildlife Conservation and
 the Environment
 Committee on Merchant Marine and
 Fisheries
 House of Representatives

The Honorable Edwin B. Forsythe
 Ranking Minority Member
 Subcommittee on Fisheries and
 Wildlife Conservation and
 the Environment
 Committee on Merchant Marine
 and Fisheries
 House of Representatives

This report is in response to your August 18, 1982, request that we evaluate (1) Customs' method and manner of counting imported tuna canned in water, including the process used to determine when the quota is reached, and (2) the method used for setting the quota. (See app. I.)

One of Customs' responsibilities is to administer quotas on imported products. A quota is a quantity control placed on imported products by the Congress or by the executive branch. Under a tariff-rate quota, the duty rates change as the quantity of imports varies. The administration of quotas and the assessment of duties involves classifying imports under the appropriate item number and provision of the Tariff Schedules of the United States.

Customs has interpreted the Tariff Schedules as requiring that tuna imported from American Samoa be charged against quota limits. However, from at least 1970 to 1978 Customs' Los Angeles District, through which all American Samoa tuna enters the United States, did not do so. In two of these years--1970 and 1972--higher duties would have been triggered because quotas were exceeded. The exact amount of additional duties is indeterminable.

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The remainder of this report discusses Customs' administration of the tariff-rate quota on tuna imports and its ramification in greater detail.

THE TARIFF-RATE QUOTA FOR TUNA

The tariff-rate quota for certain canned tuna imported into the United States was established by Presidential Proclamation 3128 of March 16, 1956, and incorporated into the Tariff Schedules. Under the Tariff Schedules as amended, canned tuna qualifies for a duty rate of 6 percent ad valorem (a percentage of unit value) when the following conditions are met:

--The product is prepared or preserved in any manner other than oil.

--It is packed in airtight containers weighing with their contents not over 15 pounds each.

--The aggregate quantity of such tuna imported during the calendar year has not exceeded a quota amount which is based on 20 percent of the United States production of canned tuna during the preceding calendar year.

Under the terms of the Proclamation, tuna imported into the United States that meets the first two conditions but exceeds the tariff-rate quota limit is charged a higher duty rate of 12.5 percent ad valorem.

Customs establishes the canned tuna quota limit for any year by computing 20 percent of the United States production of canned tuna for the prior year. The Department of Commerce's National Marine Fisheries Service provides Customs the production data. The production data is voluntarily reported by the canneries and is not verified by the National Marine Fisheries Service. Two of the canneries providing production data also operate plants in American Samoa. For quota purposes, the National Marine Fisheries Service excludes the tuna packed by the American Samoa plants from the U.S. production data provided Customs.

CUSTOMS' QUOTA MONITORING PROCEDURES

Imported tuna subject to quota cannot be entered into the commerce of the United States until Customs personnel at ports-of-entry determine the quota status. To make that determination, entry processing personnel use computer terminals

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to query a central data bank located at Customs headquarters. The data bank keeps current information on the quantity authorized to be imported and the actual imports at the time of the query. The computer responds to the query with either an "accept" or a "hold" instruction. When imported tuna reaches 98 percent of the quota limit, Customs' Quota Section officials instruct the district offices to collect the applicable higher rate of duty until they determine whether the quota limit has been reached.

We found no indications that this was not an effective method for obtaining import data on products having quotas that had to be monitored on a current basis. However, to check the accuracy of Customs' statistical data on the tuna quota, we compared Customs' data with similar import data compiled by the Census Bureau. We found no substantial differences that could not be explained.

IMPORTS FROM AMERICAN
SAMOA SHOULD HAVE BEEN
CHARGED AGAINST TUNA QUOTA

In the absence of any special provision in the Tariff Schedules, Customs has interpreted the schedules as requiring that tuna imported from insular possessions of the United States is properly chargeable against the tariff-rate quota. Imports from American Samoa, an insular possession which is outside the U.S. customs territory (the 50 States, the District of Columbia, and Puerto Rico), are subject to the provisions of the Tariff Act of 1930, as amended, including the Tariff Schedules.

Nevertheless, Customs' Los Angeles District--the point at which canned tuna from American Samoa enters the United States--did not charge the imports against the quota for a number of years. In April 1970, the Los Angeles District Director issued written instructions to Customs inspectors stating that "Canned tuna from Insular Possessions, i.e., American Samoa, is not considered quota * * *." We were unable to determine if any tuna imported from American Samoa was excluded from the quota prior to April 1970.

Headquarters' officials responsible for monitoring the quota became aware, during October 1971, of the district's practice of excluding tuna imports from American Samoa from the quota limits. In an effort to clarify the District Director's instructions, a headquarters official requested advice from Customs' Classification and Value Division on May 18, 1972, on whether the tuna imported from American Samoa was

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subject to the quota. The Division did not respond to this request and the quota section failed to follow up on the matter. As a result, the Los Angeles District continued to not charge the imported tuna against the quota.

Not until 1978, 7 years later, when Customs' Regulatory Audit Division became aware of the district's practice was any action taken to correct the problem. During a September 1978 survey of canned tuna products imported from insular possessions, the auditors found that tuna imports from American Samoa were not being charged against the quota. Quota officials at Customs headquarters, after being alerted of this practice by the Regulatory Audit Division, advised the Los Angeles District that imported tuna from American Samoa should be counted for quota purposes. Thus, the district began charging such tuna imports against the quota during July 1978.

The Regulatory Audit Division, nevertheless, later requested a ruling on the matter from the Classification and Value Division on May 16, 1979. The Classification and Value Division issued its June 8, 1979, internal decision stating that although tuna from American Samoa may qualify for duty-free treatment under General Headnote 3(a) of the Tariff Schedules, it is nonetheless chargeable against the tariff-rate quota.

NOT COUNTING IMPORTED TUNA
FROM AMERICAN SAMOA AGAINST
QUOTA HAD LITTLE OR NO IMPACT

Our review of the statistics on imported tuna for 1970 through 1978 disclosed that had Customs charged the imported tuna from American Samoa against the quota, the amount of tuna imported would have exceeded the quota limits in only 2 of the 9 years--1970 and 1972--as shown on the following page.

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Canned Tuna Imports Subject to Quota
(note a)

<u>Calendar year</u>	<u>Quota</u>	<u>Imports From American Samoa</u>	<u>Imports From Other Countries</u>	<u>Total Imports</u>	<u>Over Quota Amount</u>
----- (1,000 pounds) -----					
1970	70,146	15,181	71,048	86,229	16,083
1971	77,296	13,444	55,638	69,082	-
1972	78,532	29,013	54,474	83,487	4,955
1973	109,809	24,317	36,973	61,290	-
1974	112,176	16,781	48,697	65,478	-
1975	120,740	10,526	48,847	59,373	-
1976	98,125	15,235	56,409	71,644	-
1977	111,246	15,425	33,913	49,338	-
1978	101,407	32,958	51,531	84,489	-
1979	125,813	28,471	53,072	81,543	-
1980	109,074	43,293	70,845	114,138	5,064
1981	104,355	61,044	76,684	137,728	33,373
1982 b/	109,742	52,441	84,469	136,910	27,168

a/Figures were obtained from U.S. Customs Service, Quota Section, when available. Statistics on imports from American Samoa prior to 1980 were not available from the Quota Section and, thus, were obtained from Department of Commerce Import Statistics, "U.S. Trade with Puerto Rico and U.S. Possessions," FT 800.

b/All figures as of October 31, 1982.

The statistical data and other information do not reflect the timing of tuna imports; consequently, we cannot determine what portion of the tuna over quota imported during calendar year 1970 and 1972 was from American Samoa and qualified for duty free status. Thus, the amount of additional duties that should have been assessed is indeterminable.

Importers became concerned toward the end of 1980 when the quota limit was exceeded and Customs began assessing the canned imported tuna at the higher duty rate--12.5 percent versus the within-quota duty rate of 6 percent. The concern arose because Customs' Los Angeles District had changed its practice and began to charge imported tuna from American Samoa against the quota.

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Part of the reason for the quota being exceeded in recent years was increasing imports of tuna from American Samoa. Between 1970 and 1977, the imports averaged about 17.5 million pounds per year, or 18 percent of the quota. Since 1978, imports have increased each year (except 1979) and have ranged from approximately 29 million pounds to 61 million pounds per year, or between 23 and 58 percent of the quota.

Imports of tuna from other countries, on the other hand, have also increased in recent years. Between 1970 and 1979, these imports have averaged 51.1 million pounds per year. However, in 1980 they increased to 70.9 million pounds and in 1981, to 76.7 million pounds.

CONCLUSIONS

Customs has now resolved the American Samoa matter. Retrospectively, there was no impact on the tuna quota except in calendar years 1970 and 1972 when imports over the quota limit were not assessed the higher duty rate. Even when Customs began to charge imported American Samoa tuna against the quota, the quota limits were not exceeded until calendar year 1980. Since then, as a result of the increasing imports from American Samoa as well as from other countries, tuna imports have exceeded the quota resulting in a higher duty rate for imports from other countries.

- - - - -

The subcommittee requested that we not obtain formal agency comments from the Department of the Treasury. However, as arranged with the subcommittee we discussed this report with Customs officials who generally concur with its contents. As noted in our Objectives, Scope, and Methodology section (see app. II), we also discussed this matter with appropriate National Marine Fisheries Service representatives. We plan no further distribution of this report until 3 days from its issue date, unless the subcommittee publicly announces its contents earlier. At that time, we will send copies to the heads of the Federal agencies involved and other interested parties. Copies will be made available to others upon request.

W. J. Anderson

William J. Anderson
Director

APPENDIX I

APPENDIX I

NINETY-SEVENTH CONGRESS

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U.S. House of Representatives
Committee on
Merchant Marine and Fisheries
 Room 1334, Longworth House Office Building
 Washington, D.C. 20515

MAJORITY COUNSEL
 EDWARD S. WELCH

MINORITY STAFF DIRECTOR
 MICHAEL J. TOOMEY

August 18, 1982

Mr. Charles A. Bowsher
 Comptroller General
 U.S. General Accounting Office
 441 G Street, N.W.
 Washington, D.C. 20548

Dear Mr. Bowsher:

Imports of canned tuna into the United States are subject to a tariff rate system designed to protect the domestic tuna processing industry. Tuna canned in water is the largest imported canned tuna product, although tuna canned in oil is also imported. Tuna canned in water enters the Custom's jurisdiction of the United States subject to a six percent (6%) tariff rate, until the amount imported reaches twenty percent (20%) of the prior year's domestic production at which point the tariff increases to twelve point five percent (12.5%). 1980 was the first year the quota was reached and the higher tariff rate of 12.5% was applied, and in 1981 the quota was again reached and it will undoubtedly be reached this year.

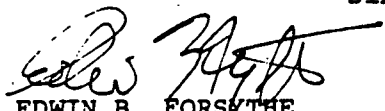
We are writing to request that the General Accounting Office undertake (1) an evaluation of the method and manner of counting imported tuna canned in water and the process undertaken by the U.S. Customs Service in determining when the quota has been reached; and (2) the method used in setting the quota. Obviously, the way in which this provision of law is implemented is of considerable concern to the domestic tuna industry and to our Subcommittee. We hope you will be able to report back to us within 60 days on this matter.

APPENDIX I

APPENDIX I

If you have any questions about this request, please contact Mr. Timothy E. Smith, Counsel to the Subcommittee on Fisheries and Wildlife Conservation and the Environment at (202) 226-3522.

Sincerely,



EDWIN B. FORSYTHE
Ranking Minority Member
Subcommittee on Fisheries
and Wildlife Conservation
and the Environment



JOHN B. BREAU
Chairman
Subcommittee on Fisheries
and Wildlife Conservation
and the Environment

APPENDIX II

APPENDIX III

OBJECTIVES, SCOPE, AND METHODOLOGY

The objectives of our review were to evaluate Customs' method of administering the tariff-rate quota on tuna, not preserved in oil, and determine the method used for setting the tariff rate quota.

During our review, we interviewed the Customs officials responsible for (1) monitoring tuna imports, (2) implementing the quota, and (3) determining the proper tariff classification for an imported article. We also talked to Customs' import specialists at three ports-of-entry to determine where tuna imports were entering the country and whether these imports were being charged against the quota. In addition, we examined Customs' records documenting its administration of the tariff-rate quota on tuna.

To determine the method used for setting the quota, we also examined the process used by the National Marine Fisheries Service to arrive at annual U.S. production of canned tuna, the basis from which the quota is derived. We also verified that the quota set by Customs was actually 20 percent of this figure.

This review was conducted in accordance with generally accepted Government auditing standards.

APPENDIX H

TUNA IMPORT TARIFFS IN SELECTED COUNTRIES.

THE INTERNATIONAL

CUSTOMS

JOURNAL

ORGAN OF THE INTERNATIONAL UNION FOR THE
PUBLICATION OF CUSTOMS TARIFFS

THIS PUBLICATION IS ALSO OBTAINABLE IN
FRENCH, GERMAN, ITALIAN AND SPANISH

**EUROPEAN ECONOMIC COMMUNITY
(E.E.C.)**

NUMBER 14 (12th EDITION)

" The International Bureau undertakes to employ the greatest care in the translation of the Customs Laws and of the Official publications interpreting these Laws, but it is understood that the Governments concerned do not assume any responsibility as to the accuracy of these translations and that in the case of dispute the original text shall be their only guide. " (Art. 3, Executory Regulations of the International Convention of July 5th, 1890.)

I.C.T.B. PRINTING DEPARTMENT

MARCH 1986

EUROPEAN ECONOMIC COMMUNITY (E.E.C.) - No. 14 (12th Edition)

CHAPTER 3

FISH, CRUSTACEANS AND MOLLUSCS

NOTE

This Chapter does not cover:

- a) Marine mammals (heading No. 01.06) or meat thereof (heading No. 02.04 or 02.06);
- b) Fish (including livers and roes thereof), crustaceans and molluscs, dead, unfit or unsuitable for human consumption by reason either of their species or their condition (Chapter 5); or
- c) Caviar or caviar substitutes (heading No. 16.04).

HEADING No.	DESCRIPTION	DUTY RATES	
		Autonomous % or Levy (L)	Conventional %
1	2	3	4
03.01	Fish, fresh (live or dead), chilled or frozen:		
	A. Freshwater fish:		
	I. Trout and other salmonidae:		
	a) Trout	16	12
	b) Salmon	16	2
	c) Lake white fish	Free	8
	d) Other	Free	10
	II. Eels (<i>Anguilla</i> spp)	10	3.3
	III. Carp	10	8
	IV. Other	Free	(a)
	B. Saltwater fish:		
	I. Whole, headless or in pieces:		
	a) Herring:		
	1. From 15 February to 15 June:		
	aa) Fresh or chilled	Free	Free
	bb) Frozen	Free	Free
	2. From 16 June to 14 February:		
	aa) Fresh or chilled	20(b)	15(b)(c)
	bb) Frozen	20(b)	15(b)(c)
	b) Sprats:		
	1. From 15 February to 15 June	Free	Free
	2. From 16 June to 14 February	20	13
	c) Tuna (<i>Thunnus</i> spp and <i>Euthynnus</i> spp):		
	1. For the industrial manufacture of products falling within heading No. 16.04 (e):		
	aa) Whole:		
	11. Yellowfin tuna (<i>Thunnus albacares</i>):		
	aaa) Weighing not more than 10 kg each	25(b)(f)	22(b)(d)
	bbb) Other	25(b)(f)	22(b)(d)
	22. Albacore (<i>Thunnus alalunga</i>)	25(b)(f)	22(b)(d)

(a) See Annex.

(b) Subject to compliance with the reference price. A countervailing tax is provided for in the case of non-compliance with the reference price.

(c) Duty exemption within the limits of an annual tariff quota of 34 000 tonnes to be granted by the competent authorities and subject to compliance with the reference price.

(d) Duty exemption in respect of tunny intended for the canning industry, within the limits of an annual tariff quota of 30 000 tonnes to be granted by the competent authorities and subject to compliance with the reference price. Qualification for this quota is governed by conditions to be determined by the competent authorities.

(e) Entry under this subheading is subject to conditions to be determined by the competent authorities.

(f) Total suspension for an indefinite period.

EUROPEAN ECONOMIC COMMUNITY (E.E.C.) - No. 14 (12th Edition)

HEADING No.	DESCRIPTION	DUTY RATES	
		Autonomous % or Levy (L)	Conventional %
1	2	3	4
(03.01 8 I c 1 aa)	33. Other	25(a)(b)	22(b)(c)
	bb) Gilled and gutted:		
	11. Yellowfin tuna (<i>Thunnus albacares</i>):		
	aaa) Weighing not more than 10 kg each	25(a)(b)	22(b)(c)
	bbb) Other	25(a)(b)	22(b)(c)
	22. Albacore (<i>Thunnus alalunga</i>)	25(a)(b)	22(b)(c)
	33. Other	25(a)(b)	22(b)(c)
	cc) Other (for example, "heads off"):		
	11. Yellowfin tuna (<i>Thunnus albacares</i>):		
	aaa) Weighing not more than 10 kg each	25(a)(b)	22(b)(c)
	bbb) Other	25(a)(b)	22(b)(c)
	22. Albacore (<i>Thunnus alalunga</i>)	25(a)(b)	22(b)(c)
	33. Other	25(a)(b)	22(b)(c)
	2. Other	25(b)	22(b)(c)
	d) Sardines (<i>Sardina pilchardus</i>):		
	1. Fresh or chilled	25	23
	2. Frozen	25	23
	e) Sharks:		
	1. Dogfish (<i>Squalus acanthias</i> and <i>Scyllorhinus</i> spp):		
	aa) Fresh or chilled	15	8(d)
	bb) Frozen	15	8(d)
	2. Other	15	8
	f) Redfish (<i>Sebastes</i> spp):		
	1. Fresh or chilled	15	8
	2. Frozen	15	8
	g) Atlantic halibut and lesser or Greenland halibut:		
	1. Atlantic halibut (<i>Hippoglossus hippoglossus</i>):		
	aa) Fresh or chilled	15	8
	bb) Frozen	15	8
	2. Lesser or Greenland halibut (<i>Reinhardtius hippoglossoides</i>):		
	aa) Fresh or chilled	15	8
	bb) Frozen	15	8
	h) Cod (<i>Gadus morhua</i> , <i>Boreogadus saida</i> , <i>Gadus ogac</i>):		
	1. Fresh or chilled	15	12
	2. Frozen	15	12
	ij) Saithe (<i>Pollachius virens</i>):		
	1. Fresh or chilled	15	15
	2. Frozen	15	15
	k) Haddock (<i>Melanogrammus aeglefinus</i>):		
	1. Fresh or chilled	15	15
	2. Frozen	15	15
(a) Total suspension for an indefinite period.			
(b) Subject to compliance with the reference price. A countervailing tax is provided for in the case of non-compliance with the reference price.			
(c) Duty exemption in respect of tunny intended for the canning industry, within the limits of an annual tariff quota of 30 000 tonnes to be granted by the competent authorities and subject to compliance with the reference price. Qualification for this quota is governed by conditions to be determined by the competent authorities.			
(d) Duty rate reduced to 6% in respect of piked dogfish (<i>Squalus acanthias</i>) within the limits of an annual tariff quota of 5 000 tonnes to be granted by the competent authorities.			

EUROPEAN ECONOMIC COMMUNITY (E.E.C.) - No. 14 (12th Edition)

HEADING No.	DESCRIPTION	DUTY RATES	
		Autonomous % or Levy (L)	Conventional %
1	2	3	4
(03.01 B II b)	7. Of tuna (<i>Thunnus</i> spp and <i>Euthynnus</i> spp)	18	18
	8. Of mackerel (<i>Scomber scombrus</i> , <i>Scomber japonicus</i> and <i>Orcynopsis unicolor</i>)	18	15
	9. Of hake (<i>Merluccius</i> spp)	18	15
	10. Of sharks (<i>Squalus</i> spp)	18	15
	11. Of plaice (<i>Pleuronectes platessa</i>)	18	15
	12. Of flounder (<i>Platichthys flesus</i>)	18	15
	13. Of herring	18	15
	14. Of megrim (<i>Lepidorhombus</i> spp)	18	15
	15. Of Ray's bream (<i>Brama</i> spp)	18	15
	16. Of monkfish (<i>Lophius</i> spp)	18	15
	17. Other	18	15
	C. Livers and roes	14	10
03.02	Fish, dried, salted or in brine; smoked fish, whether or not cooked before or during the smoking process:		
	A. Dried, salted or in brine:		
	I. Whole, headless or in pieces:		
	a) Herring	12	12
	b) Cod (<i>Gadus morhua</i> , <i>Boreogadus saida</i> , <i>Gadus ogac</i>)	13	13(a)
	c) Anchovies (<i>Engraulis</i> spp)	15	10
	d) Atlantic halibut (<i>Hippoglossus hippoglossus</i>)	15	-
	e) Salmon, salted or in brine	15	11
	f) Other	15	12
	II. Fillets:		
	a) Of cod (<i>Gadus morhua</i> , <i>Boreogadus saida</i> , <i>Gadus ogac</i>)	20	20
	b) Of salmon, salted or in brine	18	15
	c) Of lesser or Greenland halibut (<i>Reinhardtius hippoglossoides</i>), salted or in brine	18	15
	d) Other	18	16
	B. Smoked, whether or not cooked before or during the smoking process:		
	I. Herring	16	10
	II. Salmon	16	13
	III. Lesser or Greenland halibut (<i>Reinhardtius hippoglossoides</i>)	16	15
	IV. Atlantic halibut (<i>Hippoglossus hippoglossus</i>)	16	16
	V. Mackerel (<i>Scomber scombrus</i> , <i>scomber japonicus</i> and <i>Orcynopsis unicolor</i>)	16	14
	VI. Trout	16	14
	VII. Eels (<i>Anguilla</i> spp)	16	14
	VIII. Other	16	14
	C. Livers and roes	15	11
	D. Fish meal	15	13
03.03	Crustaceans and molluscs, whether in shell or not, fresh (live or dead), chilled, frozen, salted, in brine or dried; crustaceans, in shell, simply boiled in water:		
	A. Crustaceans:		
	I. Crawfish	25	(b)

(a) Duty exemption within the limits of an annual tariff quota of 25 000 tonnes to be granted by the competent authorities.

(b) See Annex.

EUROPEAN ECONOMIC COMMUNITY (E.E.C.) - No. 14 (12th Edition)

HEADING No.	DESCRIPTION	DUTY RATES	
		Autonomous % or Levy (L)	Conventional %
1	2	3	4
(16.02 B)	III. Other:		
	a) Containing meat or offal of domestic swine:		
	1. Containing bovine meat, uncooked	26(L)	-
	2. Other, containing, by weight:		
	aa) 80% or more of meat or offal, of any kind, including fats of any kind or origin:		
	11. Hams or loins (excluding collars); parts thereof	26(L)	-
	22. Collars or shoulders; parts thereof	26(L)	-
	33. Other	26(L)	-
	bb) 40% or more but less than 80% of meat or offal, of any kind, including fats of any kind or origin	26(L)	-
	cc) Less than 40% of meat or offal, of any kind, including fats of any kind or origin	26(L)	-
	b) Other:		
	1. Containing bovine meat or offal:		
	aa) Uncooked; mixtures of cooked meat or offal and uncooked meat or offal	20+(L)(*)	-
	bb) Other	26	26
	2. Other:		
	aa) Of sheep or goats:		
	11. Uncooked; mixtures of cooked meat or offal and uncooked meat or offal	20	(a)
	22. Other	20	(a)
	bb) Other	26	26
16.03	Meat extracts, meat juices and fish extracts, in immediate packings of a net capacity of:		
	A. 20 kg or more	Free	Free
	B. More than 1 kg but less than 20 kg	9	4
	C. 1 kg or less	24	20
16.04	Prepared or preserved fish, including caviar and caviar substitutes:		
	A. Caviar and caviar substitutes:		
	I. Caviar (sturgeon roe)	30	30
	II. Other	30	30
	B. Salmonidae:		
	I. Salmon	20	5.5
	II. Other	20	7
	C. Herring:		
	I. Fillets, raw, coated with batter or bread-crumbs, deep frozen	18	15
	II. Other	23	20
	D. Sardines	25	25
	E. Tunny	25	24
	F. Bonito (Sarda spp), mackerel and anchovies	25	(a)
	G. Other:		
	I. Fillets, raw, coated with batter or bread-crumbs, deep frozen	18	15
	II. Other	25	20
16.05	Crustaceans and molluscs, prepared or preserved:		
	A. Crabs	20	16
	B. Other	20	20

(a) See Annex.

(*) In certain conditions a levy is applicable in addition to the customs duty.

BULLETIN INTERNATIONAL DES DOUANES

THE INTERNATIONAL CUSTOMS JOURNAL

Thailand

NUMBER 145 (10TH EDITION)

INTERNATIONAL CUSTOMS TARIFFS BUREAU

RUE DE L'ASSOCIATION, 38

B - 1000 BRUSSELS (BELGIUM)

THAILAND. - N° 145 (10TH EDITION)

CHAPTER 2. - MEAT AND EDIBLE MEAT OFFALS

Note.		
02.01	Meat and edible offals of the animals falling within heading No. 01.01, 01.02, 01.03 or 01.04, fresh, chilled or frozen	60
02.02	Dead poultry, fresh, chilled or frozen and edible offals thereof, except liver	60
02.03	Poultry liver, fresh, chilled, frozen, salted or in brine	60
02.04	Other meat and edible meat offals, fresh, chilled or frozen	60
02.05	Unrendered pig fat free of lean meat and unrendered poultry fat, fresh, chilled, frozen, salted, in brine, dried or smoked	60
02.06	Meat and edible meat offals (except poultry liver), salted, in brine, dried or smoked	60

CHAPTER 3. - FISH, CRUSTACEANS AND MOLLUSCS

Notes 1 and 2		
03.01	Fish, fresh (live or dead), chilled or frozen:	
	(a) Fresh-water fish, fresh, other than chilled or frozen, imported through Customs Stations at Sadao, Padang Besar, Betong and Sugei Ko-lok	Free
	(b) Other	30
03.02	Fish, salted, in brine, dried or smoked:	
	(a) Sharks' fins	Kg. 60 50.00
	(b) Other	60
03.03	Crustaceans and molluscs, whether in shell or not, fresh (live or dead), chilled, frozen, salted, in brine or dried; crustaceans, in shell, simply boiled in water:	
	(a) Ark shells, imported through Customs Stations at Sadao, Padang Besar, Betong and Sugei Ko-lok	Free
	(b) Shrimp paste	Kg. 10 0.55
	(c) Other	60

Exception: For fish, crustaceans and molluscs falling within headings Nos. 03.01, 03.02(b) and 03.03 brought through the boundary customs stations, the Director-General of Customs may reduce the rate of duty to be lower, but shall not reduce it to be lower than one-tenth of the fixed rate. The reducing rate of duty can be made for all or any kind of fish, crustaceans and molluscs, liable under these sub-items and for import through any specific customs station. Such reduction of rate or the repeal or the amendment of reduction will be effective as from the day of its publication in the Government Gazette.

(Note: The Customs Notification dated July 1, B.E. 2513 reduced the rate of import duty on goods falling within headings Nos. 03.01(b), 03.02(b) and 03.03(c) imported through the Customs Stations at Ranong, Khraburi, Betong, Koh-Nok, Koh-Yao, Padang-Besar, Sadao, Sugei Ko-lok, Takbai, Aranyaprathase and Klong-Yai as follows:

- (1) Pla Tu and Pla Lung, fresh, of heading No. 03.01(b) reduced to 3%
- (2) Pla Tu and Pla Lung, salted, of heading No. 03.02(b) reduced to 6%
- (3) Seafish, other than Pla Tu and Pla Lung, fresh, of heading No. 03.01(b) and crustaceans and

THAILAND. - N° 145 (10TH EDITION)

16.04	Prepared or preserved fish, including caviar and caviar substitutes:		
	(a) Sharks' fins	Kg. 60	50.00
	(b) Other	60	
16.05	Crustaceans and molluscs, prepared or preserved:		
	(a) Blachan	Kg. 10	0.55
	(b) Other	60	

CHAPTER 17. - SUGARS AND SUGAR CONFECTIONERY

Notes 1 and 2

17.01	Beet sugar and cane sugar, solid	Kg.	2.75
17.02	Other sugars; sugar syrups; artificial honey (whether or not mixed with natural honey); caramel:		
	(a) Artificial honey; sugar syrups	65	
	(b) Other	30	
17.03	Molasses, whether or not decolourised	Kg.	0.06
17.04	Sugar confectionery, not containing cocoa	Kg. 65	22.00
17.05	Flavoured or coloured sugars, syrups and molasses, but not including fruit juices containing added sugar in any proportion	65	

CHAPTER 18. - COCOA AND COCOA PREPARATIONS

Notes 1 and 2

18.01	Cocoa beans, whole or broken, raw or roasted	Kg. 25	2.65
18.02	Cocoa shells, husks, skins and waste	25	
18.03	Cocoa paste (in bulk or in block), whether or not defatted	Kg. 25	2.65
18.04	Cocoa butter (fat or oil)	Kg. 25	4.40
18.05	Cocoa powder, unsweetened	Kg. 25	2.65
18.06	Chocolate and other food preparations containing cocoa	Kg. 65	22.00

CHAPTER 19. - PREPARATIONS OF CEREALS, FLOUR OR STARCH, PASTRYCOOKS' PRODUCTS

Notes 1 and 2

19.01	Malt extract	30	
19.02	Preparations of flour, starch or malt extract, of a kind used as infant food or for dietetic or culinary purposes, containing less than fifty per cent. by weight of cocoa:		
	(a) Infant milkfoods	10	
	(b) Other	Kg. 30	4.40
19.03	Macaroni, spaghetti and similar products	Kg.	8.80
19.04	Tapioca and sago; tapioca and sago substitutes obtained from potato or other starches	30	
19.05	Prepared foods obtained by the swelling or roasting of cereals or cereal products (puffed rice, cornflakes and similar products)	30	
19.06	Communion wafers, empty cachets of a kind suitable for pharmaceutical use, sealing wafers, rice paper and similar products:		
	(a) Empty cachets of a kind suitable for pharmaceutical use	30	
	(b) Other	Kg. 55	16.50
19.07	Bread, ships' biscuits and other ordinary bakers' wares, not containing sugar, honey, eggs, fats, cheese or fruit	Kg. 55	16.50
19.08	Pastry, biscuits, cakes and other fine bakers' wares, whether or not containing cocoa in any proportion	Kg. 55	16.50

THE INTERNATIONAL

CUSTOMS

JOURNAL

ORGAN OF THE INTERNATIONAL UNION FOR THE
PUBLICATION OF CUSTOMS TARIFFS

THIS PUBLICATION IS ALSO OBTAINABLE IN
FRENCH, GERMAN, ITALIAN AND SPANISH

PHILIPPINES

NUMBER 43 (8th EDITION)

" The International Bureau undertakes to employ the greatest care in the translation of the Customs Laws and of the Official publications interpreting these Laws, but it is understood that the Governments concerned do not assume any responsibility as to the accuracy of these translations and that in the case of dispute the original text shall be their only guide. " (Art. 3. Executory Regulations of the International Convention of July 5th, 1890.)

I.C.T.B. PRINTING DEPARTMENT

DECEMBER 1982

PHILIPPINES - No.43 (8th. Edition)

HEADING No.	DESCRIPTION OF ARTICLES	RATE OF DUTY In % or in Pesos		
		1983	1984	1985
02.01	Meat and edible offals of the animals falling within heading No. 01.01, 01.02, 01.03 or 01.04, fresh, chilled or frozen:			
100	Meat of bovine animals, with bone-in	5%	5%	5%
200	Meat of bovine animals, boneless	5%	5%	5%
300	Meat of sheep or goats	5%	5%	5%
400	Meat of swine	5%	5%	5%
500	Meat of horses, asses, mules or hinnies	5%	5%	5%
600	Offals	5%	5%	5%
02.02	Dead poultry (that is to say, fowls, ducks, geese, turkeys and guinea fowls) and edible offals thereof (except liver), fresh, chilled or frozen:			
100	Chickens, ducks and turkeys (*)	50%	50%	50%
900	Other	30%	30%	30%
02.03 000	Poultry liver, fresh, chilled, frozen, salted or in brine	50%	50%	50%
02.04 000	Other meat and edible meat offals, fresh, chilled or frozen	50%	50%	50%
02.05 000	Pig fat free of lean meat and poultry fat (not rendered or solvent-extracted), fresh, chilled, frozen, salted, in brine, dried or smoked	50%	50%	50%
02.06	Meat and edible meat offals (except poultry liver), salted, in brine, dried or smoked:			
100	Bacon, ham and other meat of domestic swine	50%	50%	50%
900	Other	50%	50%	50%
CHAPTER 3				
FISH, CRUSTACEANS AND MOLLUSCS				
NOTE				
This Chapter does not cover:				
a) Marine mammals (heading No. 01.06) or meat thereof (heading No. 02.04 or 02.06);				
b) Fish (including livers and roes thereof), crustaceans and molluscs, dead, unfit or unsuitable for human consumption by reason either of their species or their condition (Chapter 5); or				
c) Caviar or caviar substitutes (heading No. 16.04).				
HEADING No.	DESCRIPTION OF ARTICLES	RATE OF DUTY In % or in Pesos		
		1983	1984	1985
03.01	Fish, fresh (live or dead), chilled or frozen:			
100	Fish, fresh (live or dead) or chilled (excluding fillets):			
110	When imported directly by fish producers for their exclusive use upon prior authorisation by the Ministry of National Resources	5%	5%	5%
(*) See Annex.				

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HEADING No.	DESCRIPTION OF ARTICLES	RATE OF DUTY In % or in Pesos		
		1983	1984	1985
190	Other	50%	50%	50%
200	Fish, frozen (excluding fillets);			
210	When imported directly by fish processors for their exclusive use upon prior authorisation by the Ministry of National Resources	5%	5%	5%
290	Other	50%	50%	50%
300	Fish fillets, fresh or chilled:			
310	When imported directly by fish processors for their exclusive use upon prior authorisation by the Ministry of National Resources	5%	5%	5%
390	Other	50%	50%	50%
400	Fish fillets, frozen			
410	When imported directly by fish processors for their exclusive use upon prior authorisation by the Ministry of National Resources	5%	5%	5%
490	Other	50%	50%	50%
03.02	Fish, dried, salted or in brine; smoked fish, whether or not cooked before or during the smoking process:			
100	Fish meal fit for human consumption	50%	50%	50%
200	Cod, not in fillets, dried, whether or not salted	50%	50%	50%
300	Fish dried, (other than cod of subheading 200), salted or in brine	50%	50%	50%
400	Smoked fish	50%	50%	50%
03.03 000	Crustaceans and molluscs, whether in shell or not, fresh (live or dead), chilled, frozen, salted, in brine or dried; crustaceans, in shell, simply boiled in water	50%	50%	50%
CHAPTER 4				
DAIRY PRODUCE; BIRDS' EGGS; NATURAL HONEY;				
EDIBLE PRODUCTS OF ANIMAL ORIGIN, NOT ELSEWHERE SPECIFIED OR INCLUDED				
NOTES				
1. The expression "milk" means full cream or skimmed milk, buttermilk, whey, curdled milk, kephir, yoghourt and other fermented or acidified milk.				
2. Milk and cream put up in hermetically sealed cans are regarded as preserved within the meaning of heading No. 04.02. However, milk and cream are not regarded as so preserved merely by reason of being pasteurised, sterilised or peptonised, if they are not put up in hermetically sealed cans.				
HEADING No.	DESCRIPTION OF ARTICLES	RATE OF DUTY In % or in Pesos		
		1983	1984	1985
04.01 000	Milk and cream, fresh, not concentrated or sweetened	5%	5%	5%
04.02 100	Milk and cream, preserved, concentrated or sweetened: Whey	5%	5%	5%

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SECTION IV

PREPARED FOODSTUFFS; BEVERAGES, SPIRITS AND VINEGAR;
TOBACCO

CHAPTER 16

PREPARATIONS OF MEAT, OF FISH, OF CRUSTACEANS OR MOLLUSCS

NOTE

This Chapter does not cover meat, meat offal, fish, crustaceans or molluscs, prepared or preserved by the processes specified in Chapters 2 and 3.

HEADING No.	DESCRIPTION OF ARTICLES	RATE OF DUTY In % or in Pesos		
		1983	1984	1985
16.01 000	Sausages and the like, of meat, meat offal or animal blood	70%	60%	50%
16.02 000	Other prepared or preserved meat or meat offal	70%	60%	50%
16.03 000	Meat extracts and meat juices; fish extracts	50%	40%	30%
16.04	Prepared or preserved fish, including caviar and caviar substitutes:			
100	Mackerel and sardines	10%	10%	10%
900	Other	50%	50%	50%
16.05	Crustaceans and molluscs, prepared or preserved:			
100	Squid or cuttle fish	20%	20%	20%
900	Other	50%	50%	50%

CHAPTER 17

SUGARS AND SUGAR CONFECTIONERY

NOTES

- This Chapter does not cover:
 - Sugar confectionery containing cocoa (heading No. 18.06);
 - Chemically pure sugars (other than sucrose, glucose and lactose) and other of heading No. 29.43; or
 - Medicaments and other products of Chapter 30.
- Chemically pure sucrose, whatever its origin, is to be classified in heading No. 17.01.

HEADING No.	DESCRIPTION OF ARTICLES	RATE OF DUTY In % or in Pesos		
		1983	1984	1985
17.01	Beet sugar and cane sugar, in solid form:			
100	Raw sugars	50%	50%	50%
900	Other:			
910	Flavoured or coloured sugars	50%	50%	50%
990	Other	50%	50%	50%

実行関税率表

CUSTOMS TARIFF SCHEDULES
OF JAPAN

1986

日本関税協会発行

PUBLISHED BY

JAPAN TARIFF ASSOCIATION

番号 No.	統計 細分 Stat. Code No.	N A C C S 用	品 名	税 率 Rate of Duty				単位 Unit	Description	
				基 本 General	協定 GATT		特 恵 Prefer- ential			暫 定 Tempo- rary
					12/31/86	1/1/87				
(03.01 -2-(2) -A)	222	5	--たら.....					KG	Tara	
	223	6	--ぶり.....					KG	Buri	
	224	8	--あじ.....					KG	Aji	
	225	1	--さんま.....					KG	Samma	
	226	2	--さば及びいわし					KG	Saba and Iwashi	
	227	3	--にしんの卵.....		8.3%	8%		KG	Hard roes of Nishin	
	228	4	--たらの卵.....					KG	Hard roes of Tara	
			-冷凍のもの (フィ レーを除く。)						Frozen (excluding fil- lets):	
	230	6	--にしん.....	10%	6.5%	6%		KG	Nishin	
			--たら.....	10%	6.5%	6%			Tara	
	291	4	---すり身のもの					KG	Surimi	
	292	5	---その他のもの					KG	Other	
	232	1	--ぶり.....	10%				KG	Buri	
	233	2	--あじ.....	10%				KG	Aji	
	234	3	--さんま.....	10%				KG	Samma	
	235	4	--さば及びいわし	10%				KG	Saba and Iwashi	
	236	5	--にしんの卵.....		(6.5%)	(6%)		6%	KG	Hard roes of Nishin
	237	6	--たらの卵.....	10%	(6.5%) *6%	6%			KG	Hard roes of Tara
			-フィレー.....	10%						Fillets:
	238	8	--生鮮又は冷蔵の もの.....						KG	Fresh or chilled
	239	1	--冷凍のもの.....						KG	Frozen
			B その他のもの.....	(10%)	(5%)	(5%)		5%		B Other
			-生きているもの							Live:
	241	3	--うなぎ.....						KG	Eel
	242	4	--その他のもの...						KG	Other
			-生鮮又は冷蔵の もの (フィレーを除 く。)							Fresh or chilled (ex- cluding fillets):
	243	5	--かつお.....						KG	Skip-jack and other bonito
	244	6	--びん長まぐろ...						KG	Albacore
	245	8	--きわだまぐろ...						KG	Yellowfin tuna
	246	1	--くろまぐろ.....						KG	Bluefin tuna
	247	2	--めぶちまぐろ...						KG	Big-eye tuna

番号 No.	統計 細分 Stat. Code No.	N A C C S 用	品 名	税 率 Rate of Duty				単位 Unit	Description	
				基 本 General	協定 GATT		特 恵 Prefer- ential			暫 定 Tempo- rary
					12	31 86 1/1-87				
(03.01 -2-(2) -B)	248	3	--その他のまぐろ					KG	Other tuna	
	251	4	--かじき (めかじ きを含む。)					KG	Swordfish	
	252	6	--さけ及びます...					KG	Salmon	
	253	1	--さわら.....					KG	Spanish mackerel	
	254	2	--たちうお.....					KG	Hairtails	
	255	3	--にべ.....					KG	Croakers	
	256	1	--たい.....		3.3%	3%		KG	Sea breams	
	257	5	--さめ.....		(3.7%) * 3.5%	3.5%		KG	Shark	
	260	1	--ふぐ.....					KG	Fugu	
	261	2	--バラクーダ (か ます科及びくろ たちかます科の ものに限る。)及 びキングクリッ プ.....		(3.3%) * 3%	3%		KG	Barracouta (family Sphyrnidae and fa- mily Gempylidae) and King-clip	
	261	1	--その他のもの...					KG	Other	
			-冷凍のもの (フィ レーを除く。)							Frozen (excluding fil- lets):
	262	3	--かつお.....					KG	Skip-jack and other bonito	
	263	1	--びん長まぐろ...					KG	Albacore	
	264	5	--きわだまぐろ...					KG	Yellowfin tuna	
	265	6	--くろまぐろ.....					KG	Bluefin tuna	
	266	6	--めばちまぐろ...					KG	Big-eye tuna	
	267	1	--その他のまぐろ					KG	Other tuna	
	268	2	--かじき (めかじ きを含む。)					KG	Swordfish	
	271	5	--さけ及びます...					KG	Salmon	
	272	6	--さわら.....					KG	Spanish mackerel	
	273	4	--たちうお.....					KG	Hairtails	
	274	1	--にべ.....					KG	Croakers	
	275	2	--たい.....		3.3% * 3%	3%		KG	Sea breams	
	276	5	--さめ.....		3.7% * 3.5%	3.5%		KG	Shark	
	277	1	--ししやも.....		4.1%	4%		KG	Shishamo	
	278	5	--ふぐ.....					KG	Fugu	
	279	6	--バラクーダ (か ます科及びくろ たちかます科の ものに限る。)及 びキングクリッ プ.....		3.3% * 3%	3%		KG	Barracouta (family Sphyrnidae and fa- mily Gempylidae) and King-clip	
	279	1	--その他のもの...					KG	Other	
			-フィレー							Filletts:

番号 No.	統計 細分 Stat. Code No.	N A C S 用	品 名	税 率 Rate of Duty				単位 Unit	Description	
				基 本 General	協定 GATT		特 恵 Prefer- ential			暫 定 Tempo- rary
					12/31/86	1/1/87				
(03.01 -2-(2) -B)	281	1	-- 生鮮又は冷蔵の もの.....					KG	Fresh or chilled	
			-- 冷凍のもの						Frozen:	
	282	2	--- まぐろ及びか じき(めかじ きを含む。)					KG	Tuna and Sword- fish	
	289	2	--- その他のもの					KG	Other	
03.02			魚(塩蔵、塩水づけ又は乾燥の ものに限り。)及びくん製の魚 (くん製の前に又はくん製の際 に加熱による調理をしてあるか どうかを問わない。)						Fish, dried, salted or in brine; smoked fish, whether or not cooked before or during the smoking process:	
			1 魚卵.....	(15%)					1 Hard roes	
	110	4	* (2) - さけ又はますの卵...		(5.3%)	(5%)		5%	* (2) Hard roes of salmon	
	120	8	- たら(ガドゥス属、 テラグラ属及びメル ルシウス属の魚)の 卵.....	15%	(8.4%) * 7.5%	7.5%		KG	Hard roes of Tara (genus <i>Gadus</i> , genus <i>Theragra</i> and genus <i>Merluccius</i>)	
	131	4	- こんぶかずのこ.....	15%				KG	Nishin roes on the tangles	
	139	5	* (1) - にしん(クルペア属 の魚)の卵(その他 のもの).....		(12.4%)	(12%)		12%	* (1) Hard roes of Nishin (genus <i>Clupea</i>), n.e.s.	
	190	8	* (3) - その他のもの.....		(4.4%)	(4%)	無税 Free	4%	* (3) Other	
			2 その他のもの						2 Other:	
			(1) 塩蔵、塩水づけ又は乾 燥のもの.....	(15%)					(1) Salted, in brine or dried	
	211	8	- フィッシュミール (食用に適するもの)	15%				KG	Fish meal fit for human consumption	
			- その他のもの						Other:	
	212	1	- 乾燥したたら(塩 蔵してあるかどう かを問わないもの とし、フィレーを 除く。)	15%				KG	Cod, not in fillets, dried, whether or not salted	
	213	2	- にしん.....	15%				KG	Herring	
	214	3	- さけ及びます.....					12%	KG	Salmon
	219	1	- その他のもの.....	15%				KG	Other	
			(2) くん製のもの.....	15%					(2) Smoked	
	220	1	- さけ、ます、にしん (クルペア属の魚) 又はたら(ガドゥス 属、テラグラ属及び メルルシウス属の 魚)のもの.....					KG	Salmonidae, Nishin (genus <i>clupea</i>) and Tara (genus <i>Gadus</i> , genus <i>Theragra</i> and genus <i>Merluccius</i>)	
	220	2	- その他のもの.....				10% 無税 Free	KG	Other	

(注) 03.02 食品衛生法
03.02-1のうちたら(すけそうを含む。)の卵 IQ
03.02-2-(1)のうちたら(すけそうを含む。), に
しん, ぶり, さば, いわし, あじ及
びさんま並びに煮干し IQ

(Notes) 03.02 Food Sanitation Law
ex03.02-1 Hard roes of cod (including Alaska pollack): IQ
ex03.02-2-(1) Cod (including Alaska pollack), herring,
yellowtail, mackerel, sardines, horse-mackerel
and sauries; "Niboshi" (small boiled and dried
fish for seasoning use): IQ

番号 No.	統計 細分 Stat. Code No.	N A C C S 用	品 名	税 率 Rate of Duty				単位 Unit	Description
				基 本 General	協 定 GATT		特 恵 Prefer- ential			暫 定 Tempo- rary
					12/31/86	1/1/87			
(16.02 -2-(2))			――牛肉又は牛のく ず肉のもの						Of meat or meat offal of bovine animals :
			――気密容器入りの もの						In airtight containers :
231	1		――コーンビーフ					KG	Corned beef
			――その他のもの						Other :
232	2		――野菜入りの もの	(25%)	(25%)			KG	Containing vegi- tables
232	2		――その他のもの の					KG	Other
			――その他のもの						Other :
233	3		――単に水煮した もの					KG	Simply boiled in water
234	4		――その他のもの					KG	Other
			――その他のもの						Other :
235	5		――気密容器入りの もの					KG	In airtight conta- iners
236	6		――その他のもの					KG	Other
			――その他のもの	(11.9%)	(10%)	(8%) *無税 Free	*8%		Other
237	6		――気密容器入りのもの					KG	In airtight containers
239	2		――その他のもの					KG	Other
16.03			肉エキス、ミートジュース及び 魚エキス	(20%)		6.4% *無税 Free			Meat extracts and meat juices; fish extracts
010	3		* (1) 肉エキス及びミート ジュース	(20%)	(20%)		*12.8%	KG	* (1) Meat extracts and meat juices
020	6		* (2) 魚エキス	(15%)	(15%)		*9.6%	KG	* (2) Fish extracts
16.04			魚の調製品 (キャビア及びその 代用物を含む。)						Prepared or preserved fish, includ- ing caviar and caviar substitutes:
			1 キャビア及びその代用物	(20%)	(10%)	(10%)	4.8% *無税 Free	*6.4%	1 Caviar and caviar substitutes
110	4		――イクラ					KG	Ikura
190	6		――その他のもの					KG	Other
			2 その他のもの	(20%)					2 Other:

(注) 16.03, 16.04 食品衛生法

(Note) 16.03, 16.04 Food Sanitation Law

番号 No.	統計 細分 Stat. Code No.	N A C S 用	品 名	税 率 Rate of Duty				単位 Unit	Description
				店 本 General	協定 GATT		特 恵 Prefer- ential			暫 定 Tempo- rary
					12 31 86	1 1 87			
			* (1) 魚卵						* (1) Hard roes:
			* (i) にしん (タルベア 属の魚) のもの…	(16.5%)	(16%)		*12.8%		* (i) Of Nishin (genus <i>Clupea</i>):
211	0		- 気密容器入りの もの…			9.6% *無税 Free		KG	In airtight contain- ers
219	1		- その他のもの…					KG	Other
			* (i) たら (ゲドゥス属、 テラグラ属及び メルルシウス属の 魚) のもの…				*12.8%		* (i) Of Tara (genus <i>Gadus</i> , genus <i>Theragra</i> and genus <i>Merluccius</i>):
211	0		- 気密容器入りの もの…			9.6% *無税 Free		KG	In airtight contain- ers
219	1		- その他のもの…					KG	Other
220	2		* (ii) その他のもの	(10%)	(10%)		*6.4%	KG	* (ii) Other
			* (2) その他のもの ……	(15%)	(15%)		*9.6%		* (2) Other
			- 気密容器入りのも の						In airtight containers:
231	6		- いわし ……			7.2% *無税 Free		KG	Sardines
232	0		- さけ及びます…					KG	Salmon
233	1		- かつお ……			6.4% *無税 Free		KG	Skip-jack and other bonito
239	0		- その他のもの…			7.2% *無税 Free		KG	Other
			- その他のもの ……			7.2% *無税 Free			Other:
241	2		- かつお節その他 の魚節 ……					KG	Bonito and the like, boiled and dried
242	3		- うなぎ ……					KG	Eel
249	3		- その他のもの…					KG	Other
16.05			甲殻類又は軟体動物の調製品						Crustaceans and molluscs, pre- pared or preserved:
			1 くん製のもの ……	(15%)					1 Smoked
110	3		* (1) えび ……	(7.5%)	(7.5%)	無税 Free	*4.8%	KG	* (1) Of shrimps, prawns and lobsters

APPENDIX I

ANALYSIS OF THE POSSIBLE IMPACT OF THE TERMINATION OF THE EMBARGO
ON U.S. IMPORTS OF MEXICAN TUNA

The Commission was requested to assess in the course of this investigation "the possible impact of future (U.S.) imports of tuna products from Mexico on the U.S. industry" resulting from the termination of the embargo on U.S. imports of such tuna products and the subsequent opening of U.S.-Mexican trade in tuna products. 1/ This appendix presents the details of the Commission's analysis of the possible impact of this policy change; a summary of the results of the analysis is presented in the text.

The embargo on U.S. imports of Mexican tuna was instituted in July 1980 and was terminated effective August 13, 1986. 2/ However, in order to avoid "disrupting the fragile U.S. tuna market," 3/ Mexico agreed to voluntarily limit its exports of tuna products to the United States (beginning September 1, 1986) to the following maximum levels (data in round-weight equivalent):

<u>12-month period ending—</u>	<u>Volume</u>	
	<u>metric tons</u>	<u>thousand pounds</u>
August 31, 1987	17,500	38,581
August 31, 1988	22,500	49,604
August 31, 1989 <u>1/</u>	27,500 <u>2/</u>	60,627 <u>2/</u>

1/ After August 31, 1989, there will be no restraint on exports.

2/ Subject to review during the previous year.

Source: Office of Fisheries Affairs, U.S. Department of State.

The impact of opening U.S.-Mexican tuna trade is likely to be distributed across three groups of domestic participants in the U.S. tuna market,

1/ Letter to Chairwoman Stern from Ambassador Yeutter, November 22, 1986 (attached as Appendix A to this report).

2/ 51 F.R. 157, 29183-4.

3/ Pedro Ojeda Paullada, Mexican Secretary of Fisheries, quoted in The San Diego Union, Sept. 4, 1986, p. A-1.

including U.S. tuna harvesters, processors, and consumers. ^{1/} Each of these three groups will be impacted differently by U.S. imports of Mexican tuna. The Commission's analysis attempts to characterize the nature of such impacts while avoiding placing relative values on the gains and losses incurred by each group. This is because it is extremely difficult to compare the loss suffered by one group with an offsetting gain enjoyed by another, even if such loss and gain are equivalent in monetary value. A simple example to illustrate this is the loss of \$1 million suffered by 1 million consumers and the related equivalent gain of \$1 million by a group of 1,000 industry workers. It is not normally possible to say whether the gain enjoyed by the workers exceeds or falls short of the loss suffered by the consumers. Each worker gains \$1,000, while each consumer loses \$1, and one cannot easily compare the loss felt by 1 million people of \$1 each with the gain by 1,000 people of \$1,000 each and, thereby, determine if the two groups combined are as a whole better off. Therefore, because of this difficulty, this analysis stops short of an overall evaluation of the net gain or loss to the United States of the termination of the embargo and the imposition of the Mexican voluntary restraint agreement (VRA).

In order to assess the possible impact of U.S.-Mexican tuna trade on the U.S. tuna industry and market, a few simplifying assumptions must be made. First, as noted in the text, Mexico processes and markets very little albacore, and since there is a market for albacore that is distinct from the closely related markets for tropical tuna species, the analysis is restricted to the tropical tuna markets. Furthermore, the U.S. tuna "market" should

^{1/} Impacts on foreign producers or markets are not part of this analysis, although such impacts may in some cases be significant.

actually be viewed as two vertically connected markets, one for frozen tuna and the other for canned tuna. The demand for, and supply of, frozen tuna is related to the demand for, and supply of, canned tuna since the former product is the raw material for the latter product.

Second, the analysis assumes that the VRA established by Mexico will in fact be an effective limit on Mexican exports of tuna to the U.S. market. It is necessary to make explicit this assumption since it is not at all obvious that the VRA will in fact be an effective constraint on such exports. In the first few weeks following the termination of the embargo, the Mexican tuna industry reportedly showed a decided reluctance to engage in such exports, 1/ for a variety of reasons, including ready export markets for Mexican tuna in Europe, Latin America, and southeast Asia. Thus, there has apparently been little need to export significant quantities of tuna to the U.S. market. However, the weak European market; 2/ the 1985 closure, expected by Canadian industry sources to be permanent, of a Canadian tuna cannery, the only market in Canada for Mexican tuna; and, of course, the significantly lower transportation costs associated with the U.S. market versus other world markets for Mexican tuna, make the U.S. market a potentially attractive one for Mexican exporters in the medium and long run. 3/

1/ "Mexican tuna exporters aren't biting as U.S. lifts ban," The San Diego Union, August 30, 1986, p. E-1.

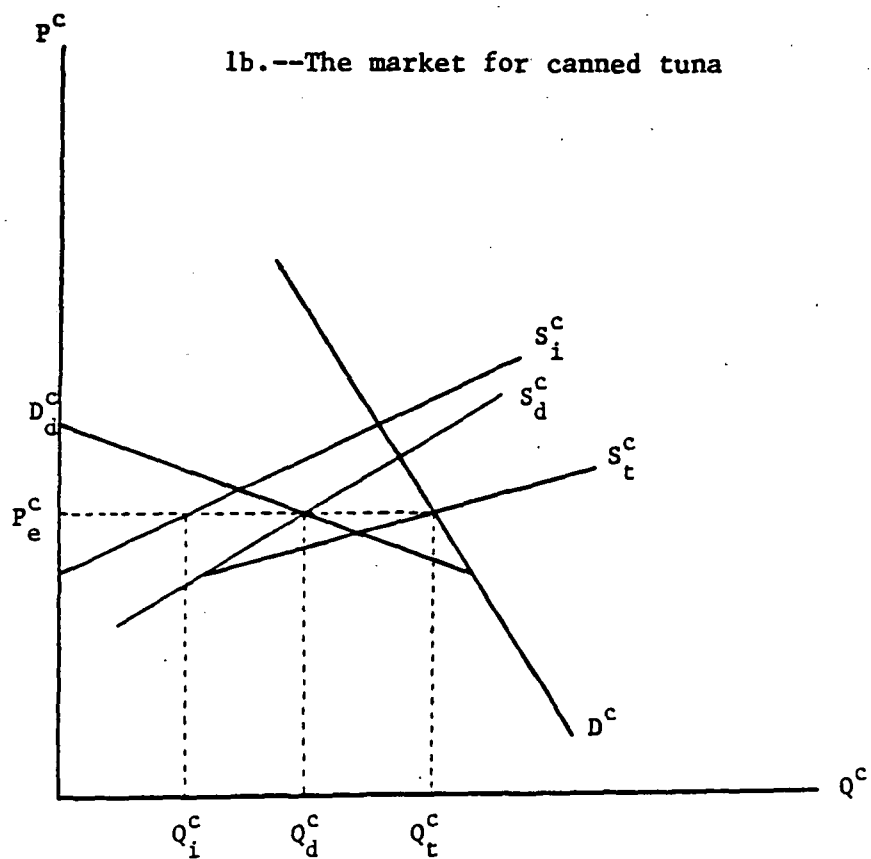
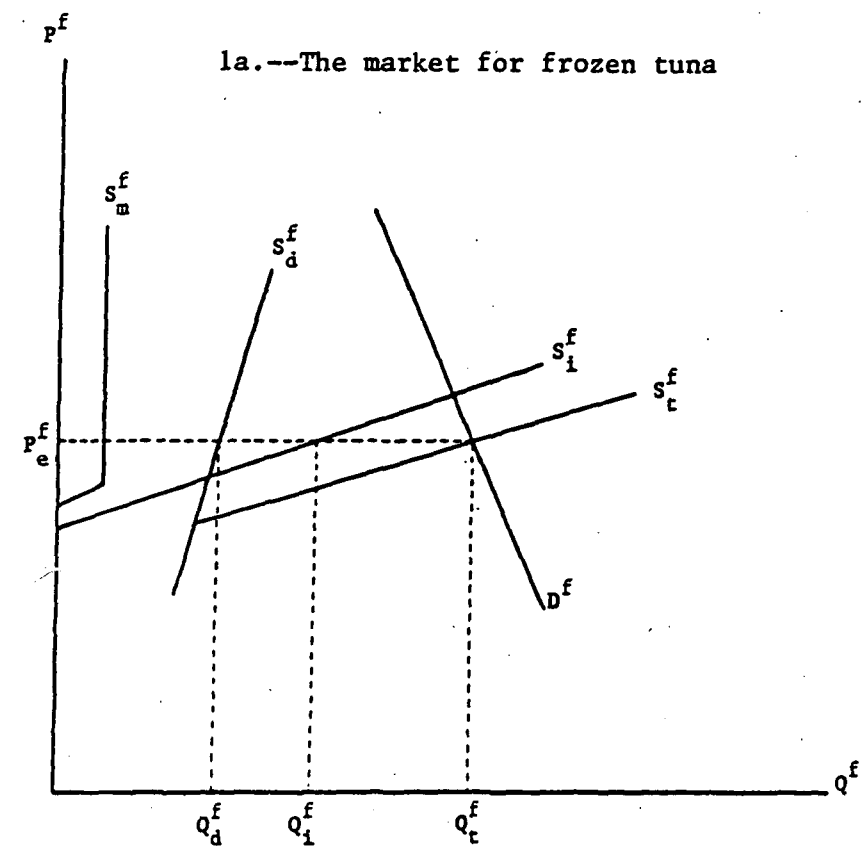
2/ "Tuna price collapse poses crisis for EEC" Financial Times, June 16, 1986, p. 3.

3/ Implicit throughout this analysis is the additional assumption that Mexican exports of tuna to the U.S. market were in fact prevented by the embargo. It has been frequently suggested by U.S. industry members interviewed by Commission staff that the homogeneous nature of tuna products and the ease with which tuna is traded worldwide makes it possible, some say probable, that at least some Mexican tuna made its way into the U.S. market throughout the period covered by the recent embargo, either directly or through third countries. However, without clear evidence to support these claims, the Commission cannot but assume that the embargo did effectively prohibit U.S. imports of Mexican tuna.

Third, the most complicated assumptions are the characterizations of supply and demand in the markets for frozen and canned tuna. To more easily examine the different sources of supply and demand, these markets are geometrically illustrated in panels a and b of figure 1. In figure 1a, the frozen tuna market is depicted, with domestic (total) demand shown as the curve labelled D^f , import supply as the curve S_i^f , domestic supply as the curve S_d^f , and total supply as the curve S_t^f . The market-clearing price is P_e^f , and at this price, the total quantity of frozen tuna in the market is Q_t^f , of which Q_d^f is supplied by domestic producers and $Q_i^f = Q_t^f - Q_d^f$ is supplied by imports. The supply of Mexican frozen tuna in the U.S. market is represented by the curve labelled S_m^f , which is vertical at the maximum quantity authorized under the VRA; prior to the termination of the embargo this supply curve does not enter into the derivation of total supply, which instead consists only of domestic and non-Mexican imported supplies. In figure 1b, the U.S. market for canned tuna is depicted, with domestic (total) demand shown as the curve labelled D^c , import supply as the curve S_i^c , domestic supply as the curve S_d^c , and total supply as the curve S_t^c . The market-clearing price is P_e^c , and at this price the total quantity of canned tuna in the market is Q_t^c , of which Q_d^c is supplied by domestic producers and $Q_i^c = Q_t^c - Q_d^c$ is supplied by imports.

To assess the effects of opening U.S.-Mexican tuna trade on the markets for frozen and canned tuna, some assumptions need to be made about the price elasticities of the supply and demand functions illustrated in figure 1. The U.S. demand for frozen tuna, D^f , is derived from the demand faced by U.S. processors for their output of domestically produced canned tuna. This latter

Figure 1.--Geometric representation of the U.S. markets for tuna.



demand is the residual of market demand, D^C , less the supply of imported canned tuna, S_i^C , and is the broken demand curve, D_d^C , in figure 1. Simply stated, this demand is what is left over from the total demand not supplied by imports. 1/ The more price-elastic is the supply of imported canned tuna, the more price-elastic will be this residual demand faced by domestic processors. Equally as important, if import supply becomes more elastic over time, so will the residual demand faced by domestic processors; such changing demand elasticity may occur if, for example, imported canned tuna captures an increasing share of the U.S. market, or if foreign suppliers to the U.S. canned tuna market develop alternative markets in addition to the U.S. market, thereby increasing the import supply elasticity. The available data on the growing import share of the U.S. canned tuna market and the diminishing reliance of major suppliers on the U.S. market indicate that both events have been occurring in recent years. 2/

The demand for canned tuna in the United States has been examined in a number of studies, including one that compares the demand for tuna with that for other seafoods. 3/ This study points out the finding that canned tuna is set apart from other seafoods such as fresh or frozen fish, by its particular characteristics, including the purpose to which it is commonly put (such as sandwiches or fresh salads). These characteristics also differentiate canned tuna from other substitute foods such as ground beef and poultry. As a

1/ We ignore for the time being the fact that much of the imported canned tuna is marketed by U.S. processors.

2/ For import market shares, see the earlier discussion of U.S. apparent consumption of canned tuna, and, for foreign industries' principal markets, see the discussion on the industries of principal suppliers to the U.S. market. 3/ See Frederick W. Bell, Food From the Sea: The Economics and Politics of Ocean Fisheries (Westview Press, 1978), and the sources cited therein.

result, a number of studies have found the demand for canned tuna to be price inelastic, i.e., a change in price of, say, 1 percent causes a less than proportional change (in the opposite direction from price) in the quantity demanded.

The supply of imported canned tuna is probably quite price elastic, given the ease with which such major foreign suppliers as Thailand can shift between major world markets such as the United States and Western Europe when relative prices change. U.S. and foreign industry sources reported to Commission staff that exchange rate differentials have a particularly strong effect on the demand by European importers of canned tuna from individual sources (the fact that internationally traded tuna is priced in dollars eliminates this effect in the U.S. market). An increase in Thai shipments to the European market, for example, resulting from exchange rate changes, decreases the supply of Thai canned tuna to the U.S. market, even without a change in the U.S. price. The ready availability of such alternative markets to foreign suppliers makes their supply to the U.S. market more price elastic. Therefore, the demand faced by U.S. processors for their canned tuna is more price elastic than total U.S. demand for canned tuna.

As noted above, the demand faced by U.S. processors influences their demand for frozen tuna in the U.S. market. This demand for frozen tuna is likely to be price inelastic, at least in the short run (i.e., one year or less) for a number of reasons. The share of the cost of frozen tuna in the overall cost of producing canned tuna is relatively small for a seafood product (about one-third, compared with two-thirds or more for many fresh or frozen seafoods), which reduces the effect of changes in the price of frozen tuna on the demand for canned tuna (and, therefore, the demand for frozen

tuna). Additionally, the fixed-proportions nature of the inputs into canned tuna production means there are no substitutes possible for a given volume of frozen tuna in the production of a given volume of canned tuna.

The supply of domestically harvested frozen tuna is, for small price changes, likely to be highly price inelastic in the short and medium run for a variety of reasons. First, even though some vessel operators are exporting their production, the principal market for domestic frozen tuna remains the U.S. processors. Second, the high fixed costs of owning a tuna purse seiner may force the owner of such a vessel to operate it even at a loss, as long as total revenue covers variable cost, since even some revenue from fish sales is better than none when such expenses as bank notes and insurance must be paid regardless of whether the vessel is operating. Third, the most significant source of tuna to the U.S. market from domestic harvesters, the yellowfin resource of the eastern Pacific, is currently being harvested at or near maximum sustainable yield, corresponding to the most inelastic portion of the supply curve in that fishery. Finally, the significant idle capacity in U.S. tuna harvesting suggests that the domestic supply of frozen tuna is possibly less elastic for declines in price than for increases in price, the latter of which could induce some idle capacity into operation.

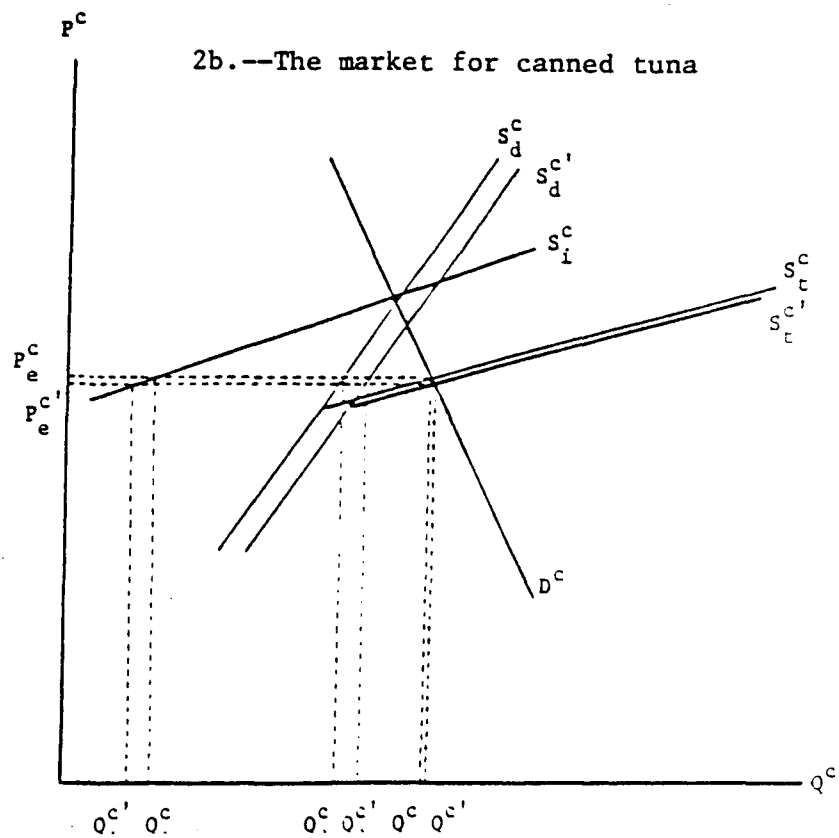
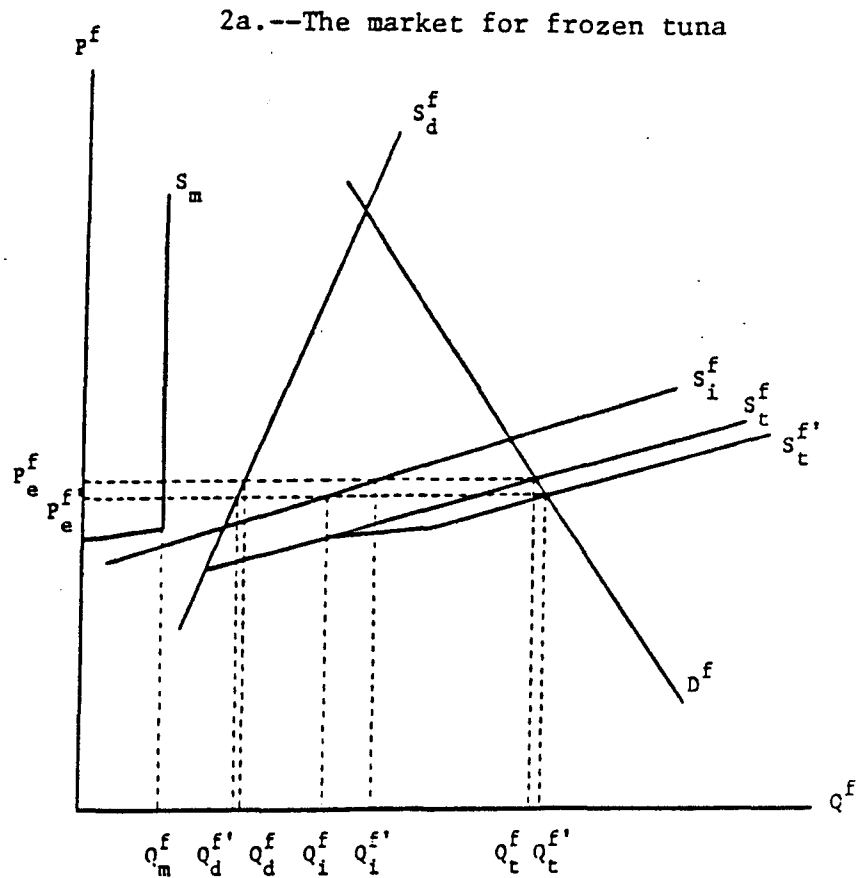
In contrast, the supply of imported (non-Mexican) frozen tuna is, for small price changes, likely to be much more price elastic than domestic supply, since the U.S. market is but one market (although a significant one) for internationally traded frozen tuna. The homogeneous nature of the product and the heavy emphasis in all nations but Japan on a single output (canned tuna) also increase the likelihood that such supply to any one market is very sensitive to relative price changes.

The supply of Mexican exports to the U.S. market is, for small changes in price, likely to be price elastic in the short run, decreasing in elasticity over time. The current demand for Mexican tuna in Europe and elsewhere and the relatively high prices obtained in Europe compared with the U.S. market suggest that Mexican exports to the U.S. market will occur only if U.S. prices are attractive. The supply elasticity of Mexican exports will decrease as Mexican marketing to the United States becomes more organized, as trade relationships between Mexican exporters and U.S. buyers become established, and as the rising VRA levels allow a greater share of Mexican exports to go to the U.S. market. It is assumed, however, that the VRA will continue to be a binding constraint on the actual supply of Mexican tuna to the U.S. market, creating an artificial (i.e., nonprice) barrier to such supply, regardless of the price elasticity of supply.

Finally, we assume that domestic and imported supplies of frozen tuna are each a perfect substitute for the other, i.e., the cross price elasticity of demand is infinite. This assumption simplifies the analysis by ensuring that any changes in the U.S. price of imported frozen tuna will similarly change the price received by domestic suppliers of frozen tuna, and is supported by U.S. and foreign industry sources interviewed by Commission staff, who asserted that there is very little difference in the physical characteristics across sources and slight (and diminishing) difference in the marketing arrangements by which such supplies are procured.

The effects on the U.S. markets for frozen and canned tuna resulting from resumed U.S.-Mexican tuna trade can be easily seen in panels a and b of figure 2, whose curves are labelled identically to those in figure 1, except that the "primes" denote the demand and supply curves existing after Mexico enters the U.S. market.

Figure 2.--The effects of opening U.S.-Mexican tuna trade on the U.S. markets for frozen and canned tuna.



The termination of the embargo and the imposition of the VRA will cause the market supply curve for frozen tuna, S^f , to shift rightward by the amount of the limit imposed under the VRA. Recall that this limit is shown by the vertical Mexican supply curve, S_m^f . (By our earlier assumption, frozen tuna supplies will be the only tuna products directly affected by the VRA.) This increase in supply will put downward pressure on the U.S. price of frozen tuna, with several results. The decline in price will (1) induce an increase in the quantity of frozen tuna demanded by U.S. processors; (2) cause a decline in the quantity of frozen tuna supplied by domestic harvesters; and (3) cause a decline in the quantity of frozen tuna supplied by nonMexican foreign producers. Once set into motion, the price will continue to decline until the total quantity demanded increases enough and the domestic and nonMexican quantities supplied decline enough to make room for the increased supply from Mexico. These changes are shown in figure 2a.

One obvious question is, which suppliers—either U.S. or nonMexican foreign—will bear the greater burden of the reduced revenues from declining prices and/or quantities supplied? The answer lies in the relative elasticities of supply and demand discussed earlier. The decline in the price of frozen tuna will cause only a small decline in the quantity supplied from domestic producers, while foreign suppliers will start turning to their non-U.S. markets once the U.S. price declines. As a result, an important effect of the increased supply of Mexican frozen tuna in the U.S. market will be to largely displace supplies of frozen tuna imported from other foreign producers. These other foreign producers will react by cutting back on quantity rather than accept lower prices. U.S. producers will not cut back as much on production in the short run, and will bear a relatively larger share

of their burden in the form of lower prices. In the longer run, as the elasticity of Mexican supply in the U.S. market decreases and that of U.S. supply increases, the increased volume of Mexican exports in the U.S. market will supplant relatively more domestic production. The decline in the volume of frozen tuna supplied by U.S. producers will probably result from a combination of declining production following the decline in price and increased exports to non-U.S. markets such as those left open by Mexican exporters.

All of the preceding is based on specific assumptions about price elasticities of supply and demand in the U.S. market for frozen tuna. If these assumptions are changed, certain of the expected results change also. An important example is if Mexican supply is not constrained by the VRA, i.e., if Mexican exporters choose to export less than the VRA-set maximum annual levels to the U.S. market, then given the other assumptions about the market, the effects of Mexican supply on U.S. producers and consumers will be smaller than estimated above. Simply stated, less Mexican exports means less U.S. supplies than otherwise, and less downward effect on frozen tuna prices received by U.S. harvesters and paid by U.S. processors.

The assumption of a less than perfectly elastic supply to the U.S. market of non-Mexican imported frozen tuna is a crucial one: it ensures that increased imports of Mexican tuna will depress U.S. prices for frozen tuna. If it is assumed instead that such supply is perfectly elastic—its price is completely unresponsive to changes in U.S. processors' demand—the expected effects of increased Mexican exports to the U.S. market are significantly altered. In particular, such Mexican supplies would simply displace completely an equivalent quantity of non-Mexican foreign frozen tuna in the

U.S. market, with no net effect on supply and, consequently, no change in price. Such perfectly elastic supply could be the case if frozen tuna is a sufficiently homogeneous commodity whose supply from one source is a perfect substitute for that from any other source; if the U.S. market is small relative to the world market as a whole; and/or if the world supply of frozen tuna is produced by a set of competitive industries, all with identical, constant average costs of production. Of these three conditions, only the first is at all conceivable: frozen tuna of a given species and size, as noted, is considered by industry sources to be a homogeneous commodity. But the U.S. market for frozen tuna is large, accounting for about one third of world imports. Furthermore, although most of the world's tuna harvesting nations' industries are reasonably competitive, production costs are not likely to be identical across nations; fleet costs differ according to vessel age and cost and the opportunity cost of crew labor, among other things. Nor are such costs likely to be constant on a per-unit basis at all levels of production, since typically the greater the quantity of fish harvested from a population, the greater the average cost of harvesting the fish owing to depletion of the population. Thus, while the supply of imported tuna in the U.S. market is quite elastic, particularly for small price changes, it is not perfectly so, and if U.S. processors increase their procurement of imported frozen tuna, everything else equal, the price they pay tends to rise. Conversely, as the previous analysis indicated, an increase in the supply of Mexican tuna will reduce U.S. processors' demand for tuna from other sources, thereby putting downward pressure on the price of such tuna.

If the assumption that the domestic supply of frozen tuna is highly inelastic is relaxed, so that we assume that such supply is elastic (but not perfectly so), the above results are not changed significantly. As long as

domestic supply is not perfectly elastic, the question of whether it is inelastic or elastic is merely a question of by how much—not if—price will fall after the Mexican tuna enters the U.S. market. The more inelastic the supply from domestic producers—i.e., the more reluctant U.S. producers are to exit the frozen tuna market—the greater will be the decline in price for frozen tuna, domestic or otherwise. As the market adjusts over time, domestic supply will become more elastic (as vessels exit the industry or find alternative export markets), and this will cause the downward pressure on price to diminish.

Another question is, how will Mexican exports of frozen tuna to the U.S. market affect the market for canned tuna? This question can be answered with figure 2b, which illustrates the effects of expanding U.S.-Mexican tuna trade on the market for canned tuna. The major impact of Mexican exports of frozen tuna on the U.S. market for canned tuna will be on the costs of production of domestic canned tuna producers compared with their foreign rivals. If, as assumed earlier, the supply of both domestic and nonMexican imported frozen tuna is less than perfectly elastic, the increased supply of frozen tuna from Mexico in the U.S. market (1) will cause a decline in prices for frozen tuna, which will reduce a significant cost of production incurred by U.S. producers of canned tuna, and (2) assuming the Mexican production of frozen tuna is inelastic in the short run, will cause a net decline in the world supply of frozen tuna in non-U.S. markets, forcing up frozen tuna prices in competing foreign markets. Both of these results will tend to make U.S. tuna processors more competitive in the U.S. market for canned tuna.

Whether or not U.S. processors are able to capture the full benefit of the reduced prices for frozen tuna depends largely on the effects of changing

domestic supply of canned tuna on U.S. prices for canned tuna and on the supply and demand elasticities in the market for canned tuna. Given that, as shown in figure 2, domestic utilization of frozen tuna will increase following the entry of Mexico into the U.S. frozen tuna market, domestic production of canned tuna will increase commensurately. If this increased production is sufficient to reduce the price for canned tuna (as it would in a reasonably competitive market), this reduced price will cause a decline in demand by U.S. processors for frozen tuna. The demand faced by U.S. processors is, as noted, partly a function of the availability of imported canned tuna, which we assumed earlier to be quite price elastic. Therefore, the demand faced by U.S. processors is more elastic than market demand, but not perfectly elastic because import supply is not perfectly elastic. Increased domestic production will, therefore, cause a decline in the price received by suppliers (both foreign and domestic) of canned tuna in the U.S. market. This in turn will put further downward pressure on prices in the market for frozen tuna.

