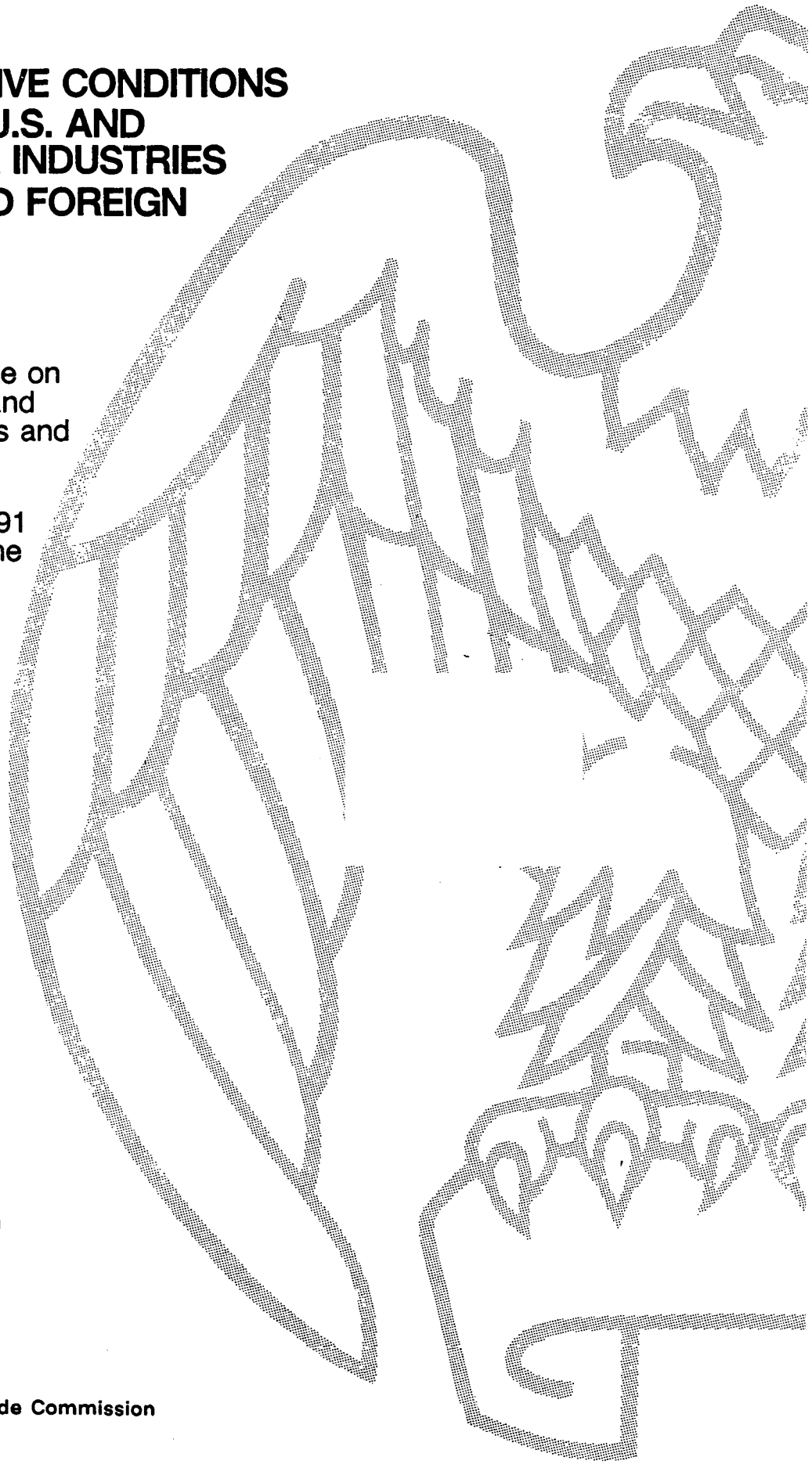
TUNA: COMPETITIVE CONDITIONS AFFECTING THE U.S. AND EUROPEAN TUNA INDUSTRIES IN DOMESTIC AND FOREIGN MARKETS

Report to the Committee on Finance, U.S. Senate, and the Committee on Ways and Means, U.S. House of Representatives, Investigation No. 332-291 Under Section 332 of the Tariff Act of 1930



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PREFACE

On April 5, 1990, following receipt of a request from the Senate Committee on Finance and a similar request from the House Committee on Ways and Means,[1] and in accordance with section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)), the U.S. International Trade Commission instituted investigation No. 332-291, Tuna: Competitive Conditions Affecting the U.S. and European Tuna Industries in Domestic and Foreign Markets, for the purpose of providing information on the tuna industries and markets of the United States, the European Community, and other foreign countries and regions. In addition, the Committees requested a description and assessment of the competitive effects on U.S. and foreign tuna industries of the following: tariffs and other trade barriers encountered by U.S. or third-country exporters; and EC fishery agreements with nations and island states in the Indian Ocean and elsewhere, that may restrict access of U.S.-flag tuna vessels to tuna resources within the waters of such nations and island states. This assessment includes, inter alia, an evaluation of the likely competitive effects on U.S. and European production and trade of an equalization of U.S. and EC tariffs and other trade barriers in the markets for raw and canned tuna.

Notice of the investigation and public hearing was given by posting copies of the notice of investigation at the Office of the Secretary, United States International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* (55 F.R. 14491).[2]

A public hearing was held in connection with this investigation on August 16, 1990, in the Commission Hearing Room in Washington, DC, at which all interested persons were given an opportunity to present views and information.[3]

The Committees requested that the Commission report the results of its investigation not later than December 3, 1990.

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[1] The letters of request are reproduced in app. A.
[2] A copy of the Commission's Notice of Investigation is reproduced in app. B.
[3] The calendar of the public hearing is reproduced as app. C.

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EXECUTIVE SUMMARY

This report is in response to a request the Commission received on March 2, 1990 from the Senate Committee on Finance and on March 13, 1990, from the House Committee on Ways & Means concerning the competitive condition of the U.S. and European canned tuna industries in domestic and foreign markets. Specifically, the Committees requested as much information as the Commission can provide on the following:

(a) certain economic, technological, and financial information on the tuna industries and markets of the United States and the European Community; and

(b) to the extent possible, a description and assessment of the competitive effects on U.S. and foreign tuna industries of (1) tariffs and other trade barriers encountered by U.S. or third-country exporters and (2) EC fishery agreements with nations and island states in the Indian Ocean and elsewhere that may restrict access of U.S.-flag tuna vessels to tuna resources within the waters of such nations and island states.

The Commission also sought to evaluate the likely competitive effects on U.S. and European production and trade of an equalization of U.S. and EC tariffs in the markets for raw and canned tuna.

Information was obtained from U.S. and foreign government sources; U.S. and foreign academic institutions; the United Nations; the EC Commission; industry trade associations; written submissions from interested parties; Commission staff fieldwork; and a questionnaire survey of domestic tuna harvesters, processors, and importers.

The study updates and extends the information presented in two previous Commission investigations, Inv. No. TA-201-53, *Certain Canned Tuna Fish* (August 1984), and Inv. No. 332-258, *Competitive Conditions in the U.S. Tuna Industry* (October 1986). The first of those investigations examined alleged injury from increased imports of canned tuna; the second assessed the economic condition of the industry in the 2 years following the section 201 investigation (section 201 of the Trade Act of 1974, 19 U.S.C. 2251), focusing on the role played by imported raw and canned tuna in the U.S. market and on the economic structure and performance of the foreign industries (Asian and Mexican producers) that supply raw and canned tuna to the U.S. market. The present investigation updates the information on the state of the U.S. industry and market and extends the analysis to Europe, the world's second largest market for canned tuna. The links between the United States and European industries include similar tuna resources, investment in EC processing by U.S. processors, and a significant reliance on third-country suppliers (e.g., Thailand) for the supply of canned tuna to the respective domestic market.

The principal findings of the study regarding the U.S. industry are summarized below:

1. The U.S. tuna harvesting sector experienced a substantial contraction during 1986-89.

The number of U.S. tuna purse seiners declined from 90 in 1986 to 63 in 1989. The capacity of the fleet declined 40 percent during the period. Most of the decline resulted from the sale of vessels to foreign-flag fleets.

2. The U.S. tuna fleet continued its shift to the western Pacific during 1986-89.

Historically, the bulk of the U.S. tuna fleet fishing effort was in the eastern Pacific area. However, mainly as a result of a particularly severe "El Nino" episode in 1983, a large part of the fleet moved to the western Pacific area. Although some vessels returned east, U.S. tuna fishing effort in the western Pacific continued. This resulted mainly from a combination of improved access to tuna resources afforded by the South Pacific Tuna Treaty and expanding markets for raw tuna, particularly in Asia. Approximately 50 U.S. vessels currently are licensed to fish in the western Pacific.

3. After increasing during 1986-87, U.S. tuna landings declined during 1988-89.

U.S. tuna landings rose from 555 million pounds in 1986 to 626 million pounds in 1987. Such landings then dropped each of the next 2 years and totaled 541 million

pounds in 1989. A decline in the U.S. tuna fleet capacity led to the decrease in landings.

4. *The U.S. fleet supplies less than half of the raw material requirements of U.S. canned tuna processors.*

During 1986–89, the share of raw tuna supplies utilized by U.S. tuna canners that was supplied by the U.S. tuna fleet ranged between 39 percent and 45 percent. The share of tropical (yellowfin and skipjack) tuna supplied by U.S. tuna vessels is higher, between 48 percent and 56 percent during the period. The U.S. fleet accounts for less than 10 percent of the supply of raw albacore used by U.S. canners annually.

5. *U.S. tuna canners are, by far, the major market for the U.S. tuna fleet.*

Historically, U.S. tuna harvesters have relied on U.S. tuna canners to purchase the bulk of their catch. Prior to 1984, U.S. canners comprised virtually the entire market for the U.S. tuna catch. However, because of contractual arrangements between U.S. and foreign tuna processors and with the shift of some of the fleet to western Pacific tuna fishing grounds, exports of raw tuna increased in 1984. Since then, the U.S. fleet has exported between 11 percent and 14 percent of their catch annually.

6. *Productive capacity in the processing sector of the U.S. tuna industry increased during 1986–89, reversing the trend of decline during the previous several years.*

Although the number of U.S. tuna-processing plants decreased from 22 in 1979 to 8 in 1985 and further declined to 7 in 1990, industry-wide capacity increased from 41.5 million standard cases in 1986 to 45.1 million standard cases in 1989. Major capital improvements were made during the period in existing plants to improve the flow of production and to increase yields.

7. *U.S. canned tuna production increased during 1986–89.*

U.S. canned tuna production rose from 637 million pounds, valued at $882 million, in 1986 to 686 million pounds, valued at $1.1 billion, in 1989. An increase in production capacity and a generally expanding domestic market led to the rise in production levels during the period.

8. *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.*

Because of the greater abundance of raw tropical tuna (used for canned lightmeat tuna), relative to raw albacore (whitemeat) tuna, available to U.S. and foreign harvesters, canned lightmeat tuna accounted for an average of 78 percent of the quantity of total U.S. production of canned tuna during 1986–89. In 1989, U.S. production of lightmeat in oil, which supplied substantially all U.S. consumption of such product, accounted for 29 percent of total lightmeat production, while lightmeat in water accounted for 71 percent. Canned albacore in water accounted for 89 percent of U.S. production of canned albacore in 1989.

9. *Total employment in the U.S. tuna processing industry generally declined during 1986–89.*

The continued restructuring of the U.S. tuna industry during 1986–89 forced a reduction in employment of production workers from 12,040 workers in 1986 to 11,690 workers in 1989. However, hours worked by employees involved in producing canned tuna remained relatively constant during the period and ranged between 20 and 22 million hours annually.

10. *Labor productivity in the U.S. canned tuna industry improved significantly during 1986–89.*

Labor productivity, measured by the number of man hours required to produce a standard case of canned tuna, improved by 6 percent, from 0.65 in 1986 to 0.61 in 1989. During 1979–85, this figure averaged 0.74. Improvements in production flow and product yields contributed to the rise in productivity.

11. The U.S. tuna canning industry experienced positive but substantially declining net profits during 1986–89. Net profit margins also declined during the period.

Net income before income taxes reported by U.S. tuna processors decreased from $111.8 million in 1986 to $21.7 million in 1989, or by 81 percent. Profit margins (share of net sales) declined from 9.9 percent in 1986 to 1.7 percent in 1989. During 1986–89, with the exception of 1988, at least one firm experienced operating losses.

12. U.S. tuna canners have taken several measures in response to increasing competition.

Increasing competition, in large part from imports, has caused the U.S. tuna industry to respond with a variety of measures in recent years, both in production and marketing. Production measures include improving labor productivity and production yields by increasing mechanization and improving plant facilities; decreasing full-scale production capacity in the relatively high-cost area of Puerto Rico; and, increasing the use of imported precooked, frozen loins for processing. Marketing measures include decreasing the common retail can size from 6.5 ounces to 6.125 ounces; lowering prices through increased promotional and discount activities; and, increasing the use of lower-priced, imported canned tuna for branded products.

13. Government involvement in the U.S. tuna harvesting sector centers on the regulation of marine mammal mortality, access to U.S. and foreign fishing grounds, and financial assistance for vessel seizures and construction.

The U.S. government regulates incidental dolphin mortality in connection with tuna fishing in the eastern tropical Pacific by establishing an annual mortality quota. However, the recent "dolphin-safe" announcement by U.S. tuna canners has effectively eliminated the need for government involvement, as this action has virtually stopped U.S. tuna fishing using the method whereby schools of dolphin are encircled.

The U.S. government is also involved in restricting access to U.S. tuna fishing grounds and in negotiating access to foreign grounds for the U.S. fleet. The Fisheries Conservation and Management Act of 1976 provides for a 12-mile claim to tuna resources by the United States. An amendment currently is before Congress to extend this jurisdiction to 200 miles. The South Pacific Tuna Treaty, which was entered into during 1987, provides the U.S. tuna fleet licensed access to various Pacific nations' tuna resources. In addition to fishery resource access, access to U.S. ports by foreign vessels is restricted under the Nicholson act. This act does not apply to American Samoa.

The U.S. tuna fleet is eligible for compensation for losses resulting from vessel and gear seizures in disputed territorial waters under the Fishermen's Protective Act. Government financial assistance for vessel construction is available through the Production Credit Association of the Farm Credit Administration and through the Fisheries Obligation Guarantee Program and the Fishing Vessel Capital Construction Fund of the National Marine Fisheries Service.

14. Government involvement in the U.S. tuna processing sector centers on tax benefits extended in offshore locations.

The U.S. tuna processing sector enjoys Federal and local tax benefits both in Puerto Rico and American Samoa. Income derived in both locations is effectively exempted from U.S. corporate income tax. In addition, substantial exemptions from local taxes are extended in both locations.

The principal findings of the study regarding the U.S. market are summarized below:

1. The U.S. market for canned tuna declined during 1986–88, but rebounded to a record level of consumption in 1989.

After declining from 888 million pounds in 1986 to 828 million pounds in 1988, U.S. apparent consumption of canned tuna reached a record level of 989 million pounds in 1989. Per capita consumption in 1989 also reached a record level of 3.9 pounds. The rise in consumption in 1989 resulted from a combination of factors, including declining tuna prices. The value of U.S. apparent consumption of canned tuna increased each year during 1986–89 and totalled about $1.5 billion in 1989.

2. *The U.S. market preference for canned tuna in water continued to increase during 1986–89.*

The share of U.S. canned tuna consumption held by water pack tuna increased from 74 percent in 1986 to 82 percent in 1989. This share was only 45 percent a decade earlier. Continued dietary and health concerns and the U.S. tariff structure contributed to this ongoing shift.

3. *Imports of canned tuna captured an increasing share of the U.S. market during 1986–89 and reached record levels in 1989.*

U.S. canned tuna imports increased 47 percent in quantity during 1986–89 and reached a record level of 158 million metric tons the latter year. The 1989 level of imports represented a record-high 35-percent share of U.S. consumption. Expanding foreign industries, generally favorable market conditions, generally declining tuna prices, and shifting consumer dietary preferences led to the rise in imports.

4. *Thailand continued its posture as the leading foreign supplier of canned tuna to the United States by increasing both its supplies to and share of the U.S. canned tuna market during 1986–89.*

Thailand increased its share of the U.S. canned tuna import market to 52 percent in 1989. This increase resulted mainly from expanding production in Thailand coupled with contractual arrangements to provide canned tuna to U.S. processors. This situation will likely continue, particularly in light of the recent acquisition of a major U.S. tuna processor by the largest Thai processor.

5. *U.S. imports of tuna loins increased substantially during 1986–89 and will increase even more in 1990.*

U.S. imports of (precooked, frozen) tuna loins more than doubled between 1988 and 1989; such imports during January–August 1990 were more than five times the 1989 annual level. The principal sources are Thailand and Latin America. U.S. processors began to process loins at a much larger scale during the past 2 years in order to realize costs savings for labor and transportation compared to processing whole tuna.

6. *After generally increasing during 1986–88, both raw and canned tuna prices declined in 1989 and 1990.*

Prices of raw and canned tuna generally trended upward during 1986–88. Rising canned tuna inventories and a world glut of raw tuna in 1989 led to a decline in prices. The decline in canned tuna prices continued in 1990, as aggressive discounting practices continued.

The principal findings of the study regarding the European canned tuna market are summarized below.

1. *The European canned tuna market expanded during 1986–89 and now is second only to the U.S. market in terms of size.*

European consumption of canned tuna increased nearly one-quarter during 1986–89; the level of consumption in 1989 reached a record 386,000 metric tons. In comparison, the U.S. consumption level totaled about 449,000 metric tons that year. In 1989, imports accounted for about one-half of European consumption of canned tuna, compared to 40 percent in 1986.

2. *The European canned tuna market has two distinct segments—one group countries is supplied mainly by relatively protected domestic industries and has low import penetration levels, and the other is supplied mainly by imports.*

European countries that possess domestic canned tuna industries generally are mature markets that pose substantial barriers to imports. These markets include France, Spain, Italy, and Portugal. Other European markets generally rely on imports for their entire supply of canned tuna. The primary European import markets are the United Kingdom, Germany, and the Netherlands.

3. *European imports of canned tuna increased substantially during 1986–89, and Europe surpassed the United States as the world's leading importer of canned tuna in 1986.*

European imports of canned tuna increased about 50 percent between 1986–89 to a record level of about 187,000 metric tons in 1989. European import levels surpassed those in the U.S. market each year during the period. Imports showed tremendous growth mainly in European markets that do not produce canned tuna, such as the United Kingdom and West Germany.[1] The bulk of this growth was supplied by Asian producers.

4. *The growth in the European tuna market and imports occurred despite relatively high barriers to trade.*

The European market presents substantial tariff and nontariff barriers to trade in canned tuna. Import duties are 24 percent ad valorem for most major foreign suppliers to major European markets. European markets with domestic industries have nontariff barriers in the form of quotas and technical requirements. Imports increased mainly in markets without domestic industries and were supplied principally by low-cost Asian producers.

5. *Canned tuna import prices generally are higher in Europe than in the United States.*

During 1986–89, European imported canned tuna prices generally ranged from 2 percent to 9 percent higher than such prices in the U.S. market. The price differences can be attributed mainly to higher-value pack styles that the European market demands. Higher shares of solid-style and yellowfin packs go to the European market when compared with the U.S. market.

The principal findings of the study regarding other foreign tuna industries are summarized below:

1. *The Asian region has emerged as the primary world exporter of canned tuna.*

Asian canned tuna producers have developed into the world's leading exporters during the 1980s. Thailand is the leading world canned tuna exporter, followed by the Philippines. Indonesia is an emerging producer and exporter and may challenge the position of Thailand and the Philippines in the future. Asian producers gained the lead in world canned tuna trade as a result of competitive advantages afforded by relatively inexpensive labor, proximity to raw fish resources, and export-oriented national government and business environments.

2. *Asian exporters of canned tuna are solidifying their positions in leading world tuna markets by improving distribution networks.*

In the past, most Asian exports of canned tuna were sold though importers and brokers in the United States and European markets. However, in recent years, Asian producers have entered into ownership and distribution arrangements in these markets to improve their position. The leading Thai producer and exporter of canned tuna, Unicord, recently purchased the second largest U.S. tuna processor, Bumble Bee, while the leading Indonesian producer and exporter of canned tuna, P.T. Mantrust, recently purchased the third largest U.S. tuna processor, Van Camp. In the European market, both Thai and Indonesian canned tuna exporters have been improving their distribution arrangements.

3. *Asian canned tuna producers are increasing efforts to improve access to raw fish supplies.*

As the canned tuna industries of various Asian countries have expanded, their demand for raw tuna has increased. Although most of these countries are relatively close to tuna fishing grounds or possess significant tuna resources within their waters, their harvesting capabilities are currently limited. Efforts are being made to develop the tuna harvesting sectors in these countries either through joint-venture arrangements with foreign fleets, licensing agreements with countries with tuna resources, or through domestic fleet expansion.

4. *The Indian Ocean area has emerged as a major source of raw tuna supplies in recent years.*

In the decade since 1978, the catch of tuna in Indian Ocean waters increased by nearly 150 percent to about 642,000 metric tons in 1987. Most of the catch is by

[1] During the period covered by this report, Germany was not unified. Therefore, in this report, Germany is referred to as West Germany.

European vessels (mainly French and Spanish); the bulk of the catch is exported to European processors. Efforts are underway in some Indian Ocean countries, such as the Seychelles, to develop domestic tuna harvesting and processing industries.

5. *Government involvement in most foreign tuna industries generally is focused on industry growth and export development.*

The governments of most foreign tuna industries, particularly emerging industries in the Asian and Indian Ocean regions, are involved in providing incentives for growth investment and for generating exports. These incentives generally are in the form of tax holidays, exemptions from import duties on equipment and raw materials, and export financing.

The principal findings of the study regarding the competitive effects of tariffs and other trade-distorting practices faced by U.S. and foreign industries are summarized below.

1. *The most trade-distorting U.S. practice is the set of tariffs on canned-tuna imports. These trade barriers raise U.S. prices of canned tuna and put downward pressure on frozen-tuna prices received by tuna harvesters.*

Oil-pack imports are dutiable at 35 percent ad valorem. Water-pack imports are subject to a tariff-rate quota equal to 20 percent of the previous year's domestic production of canned tuna: imports below the quota are dutiable at 6 percent ad valorem, while for imports above the quota, the tariff rises to 12.5 percent ad valorem. The United States is the world's largest market for canned tuna. Thus, by limiting imports, these measures raise U.S. prices of imported tuna by 10 percent and of domestic tuna by 8.4 percent, and depress foreign canned-tuna prices by 2.5 percent. Overall U.S. consumption is lower, which reduces cannery demand for frozen tuna, putting downward pressure on prices paid to fishermen. U.S. canned-tuna production is 16.7 percent higher as a result of the U.S. tariffs.

The tariff-rate quota has additional effects of market disruption, especially in the U.S. import market. The change of the tariff rate as the U.S. quota is filled creates cycles of shortages and surpluses of imported canned tuna. Importers must hold more warehouse capacity and are subject to uncertainties about the exact closing date of the quota; these factors raise importing costs and, ultimately, raise the price of canned tuna to consumers. Disruptions are also felt in foreign exporting industries, which are faced with cyclical demand for their product, which in turn causes frozen-tuna prices to fluctuate. The distortions extend to the EC market, where importers hold off their orders until after the U.S. quota is filled, in anticipation of a glut of supply from third-country exporters.

2. *The most trade-distorting EC practices are a tariff on canned-tuna imports, nontariff barriers (e.g., French quotas) in some Member States, and the preferential tariff treatment given to canned-tuna exporters in certain countries under the Lome' Convention. These trade barriers raise EC prices of canned tuna and divert some third-country exports to the U.S. market.*

EC imports of canned tuna (regardless of packing medium) are dutiable at 24 percent ad valorem. This tariff, certain nontariff barriers, and duty-free treatment of imports from Lome' beneficiaries all act to restrict EC imports by 58 percent, raising the EC price of imported canned tuna by 18.5 percent. The foreign price of canned tuna is 5.5 percent lower as a result of the EC tariff, and U.S. imports are 23.2 percent higher. U.S. prices of domestic canned tuna are 4.4 percent lower and U.S. canned-tuna production is 8.8 percent lower than would be the case without the EC trade barriers.

3. *Equalization of U.S. and EC tariffs could be done in two ways, either by harmonizing and raising the U.S. tariffs to the EC level or reducing the EC tariff to the average or marginal U.S. level.*

Of the two policy changes, raising the U.S. tariff would create the greater effects on the U.S. industry and market. Under the Commission's baseline assumptions on elasticities, raising U.S. tariffs to the EC level would reduce U.S. canned-tuna imports by 32.4 percent, raise the price of U.S. canned-tuna imports by 7.7 percent, raise the price of U.S.-produced canned tuna by 6.1 percent, increase U.S. canned-tuna production by 12.3 percent, and depress foreign (including EC) canned-tuna prices by 2.5 percent. However, despite the increase in the U.S. canned-tuna price, U.S. and foreign prices of

frozen tuna would decline because worldwide consumption of canned tuna would fall, which would reduce global demand for frozen tuna.

It should be noted that there are international legal constraints on the ability of the United States to raise its tariffs on canned tuna, which are bound against increase (except with compensation to affected foreign exporters) under the General Agreement on Tariffs and Trade.

Reducing EC tariffs to the marginal U.S. level of 12.5 percent would have substantially smaller effects on the U.S. industry and market. Under the Commission's baseline assumptions on elasticities, U.S. canned-tuna imports would fall by 11.8 percent, the price of U.S. canned-tuna imports would rise by 2.8 percent, the price of U.S.-produced canned tuna would rise by 2.2 percent, U.S. canned-tuna production would rise by 4.5 percent, and foreign (non-EC) canned-tuna prices would rise by 2.8 percent. Under this policy scenario, the U.S. price of frozen tuna would move in the same upward direction as the U.S. canned-tuna price because the increase in the worldwide consumption of canned tuna would raise demand for frozen tuna. In the EC market, canned-tuna imports would decline in price by 6.5 percent and grow in volume by 29.5 percent, while EC canned-tuna production (including that in Lome'-beneficiary countries) would decline in price by 5.1 percent and in volume by 10.2 percent.

4. *EC fishery access agreements negotiated with various coastal nations have reduced the operating costs of EC harvesters, but have not caused an increase in their production nor a decrease in frozen-tuna prices received by U.S. harvesters.*

EC access agreements provide for significant economic assistance paid by the EC Government to coastal nations in return for their allowing access by EC tuna harvesters to their tuna fisheries. The EC contribution is an effective reduction in the cost of EC tuna harvesting, since those vessels would probably have to pay the access fee themselves without an EC-negotiated agreement. But the EC economic assistance does not significantly affect the production of frozen tuna by these vessels, because the catch limits imposed by the coastal nations as resource-conservation devices probably would apply whether or not the EC contributed toward the cost of access.

Chapter 1
Introduction

The Products

The two products of concern in this investigation are canned tuna and raw (fresh, chilled, or frozen) tuna, its principal raw material. Canned tuna is the most widely consumed seafood in the United States; total supply (domestic and imported) reached a record 1.03 billion pounds, at an estimated value of $1.6 billion, in 1989; per capita consumption also reached a record in 1989, at 3.9 pounds.[1]

Tuna are pelagic (i.e., surface-feeding) fish found in nearly all saltwater bodies of the world. Travelling in schools, they are highly migratory, often circumnavigating entire oceans during the course of a year. There are five tuna species of commercial importance: yellowfin, skipjack, bluefin, bigeye, and albacore. Tuna are harvested by the fishing fleets of many nations, most importantly those of the United States, Japan, Mexico, Korea, and the European Community. Virtually the entire catch by these fleets (except Japan) is destined for tuna canneries; much of Japan's catch is destined for the Japanese sushi market.

In the U.S. market, all but albacore are processed into "lightmeat" canned tuna; only albacore may be labelled "whitemeat" canned tuna. Whitemeat tuna is usually considered superior to lightmeat tuna in terms of taste and appearance. Both products may be packed in water or vegetable oil. Water-packed tuna is more popular in the U.S. market, wheras European consumers traditionally have preferred tuna packed in oil or in sauces (e.g., tomato sauce).[2]

Previous Commission investigations

Section 201 Investigation In 1984

Following the receipt on February 15, 1984, of a petition for import relief filed on behalf of the United States Tuna Foundation, C.H.B. Foods, Inc., the American Tunaboat Association, and others, the Commission instituted an investigation pursuant to section 201(b) of the Trade Act of 1974 to determine whether canned tuna was being imported into the United States in such increased quantities as to be a substantial cause of serious injury, or the threat thereof, to the domestic tuna industry.

On August 15, 1984, the Commission issued its determination[3] that such imports were not a substantial cause of injury, or the threat thereof, to the domestic tuna industry, and therefore did not recommend to the President that import relief be provided.

Although the majority found both increased imports and economic difficulties faced by the domestic tuna industry (consisting of both the harvesting and processing sectors), it did not find that increased imports were a "substantial cause" of serious injury or threat of such injury.[4] Rather, the majority found two other factors that played more important roles in causing the economic difficulties: (1) costs associated with an overexpansion of the harvesting fleet and processing facilities in the 1970s and early 1980s, complicated by unusually high nominal interest rates; and (2) a shifting of the principal fishing grounds in the 1980s from the eastern to the western Pacific following a temporary warming of eastern Pacific waters (the so-called "El Nino" effect), which resulted in sharply higher fuel and transhipment costs.[5]

Section 332 Investigation In 1986

On January 30, 1986, following the receipt of a request therefor from the United States Trade Representative, the Commission instituted an investigation (No. 332-224, *Competitive Conditions in the U.S. Tuna Industry*) under section 332(g) of the Tariff Act of 1930 for the purpose of gathering and presenting information in the following areas:

- The U.S. industry—profile the U.S. tuna harvesting and canning industry;
- Foreign industries—profile the tuna harvesting and canning industries in Thailand, Taiwan, the Philippines, Japan, and Mexico;
- 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;
- Market trade barriers—discuss barriers to U.S. tuna exports to Thailand, Taiwan, the Philippines, Japan, Mexico, and other relevant countries;
- Conditions of competition in the U.S. market—analyze the major competitive factors affecting domestic and foreign

[1] In the U.S. market, a very small (but rapidly growing) market for sushi (raw tuna) and fresh tuna steaks also exists, accounting in recent years for less than 1 percent of total domestic supply of tuna.

[2] This preference, however, is changing as in the U.S. market. See the discussion in chapter 4 on the European market.

[3] See U.S. International Trade Commission, *Certain Canned Tuna Fish*, USITC Publication 1558. Chairwoman Stern was the sole dissenter from the majority negative determination of Vice Chairman Liebeler and Commissioners Eckes, Lodwick, and Rohr.

[4] To be a "substantial" cause, a cause must be "important and not less than any other cause" (sec. 201(b)(4), Trade Act of 1974).

[5] See Commission report at pp. 16-20.

tuna suppliers in the U.S. market, including price, quality, marketing, resource availability, transportation, Government involvement, exchange rates, and the probable impact of terminating the embargo on U.S. imports of Mexican tuna products.

The report on this investigation[6] was transmitted to the USTR in October 1986.

Recent Issues Facing the U.S. Industry

Some issues affecting the tuna industry have recently surfaced that were not noted in the Congressional letters of request, but which nonetheless have implications for international competitiveness.

The Incidental Catch of Dolphins by Tuna Fishermen

Dolphins (*Delphinus delphis*), often called porpoises, frequently school near stocks of yellowfin tuna in the eastern Pacific. In fact, a common way to locate such yellowfin stocks is to search for a school of dolphins, because there is often a school of tuna swimming just below them. In the process of encircling the tuna, a small percentage of the schooling dolphins may also become entrapped in the net (the majority of the dolphins escape), where they suffocate. After being brought to the vessel, the dead dolphins are discarded because there is no commercially viable market for dolphin meat. The incidental catch of dolphins is an isolated problem, affecting only the harvest of eastern Pacific tuna (for unknown reasons, dolphins associate only with tuna in the eastern Pacific).

This incidental catch of dolphins has long been of concern among animal-rights groups, Congress, and Government agencies. The catch of dolphins by U.S. purse seiners increased significantly in the 1960s with the growth in the purse seiner fleet. The Marine Mammal Protection Act (MMPA) (16 U.S.C. 1361 et seq.) was enacted by Congress in 1972 in response to public concern that certain marine mammal populations, including dolphins, were being harvested in such numbers that they risked becoming endangered species. Under the authority of the MMPA, the Administrator of the National Oceanic and Atmospheric Administration (NOAA) of the Department of Commerce is empowered to close the eastern Pacific tropical tuna fishery associated with dolphins when such tuna harvesting activity results in a bycatch of dolphins exceeding a set annual quota. Beginning in 1977, the Administrator of NOAA authorized an annual dolphin quota of 20,500 animals. The U.S. industry first approached this quota in 1986, when for the first time the Administrator ordered the closure of the eastern Pacific fishery beginning October 21, 1986, and continuing through the remainder of that year. This move was considered controversial because the U.S. industry alleged that the estimated dolphin count had been statistically biased (by a reduction in the staffing of NOAA observers on U.S. vessels whose job it is to report on each vessel's dolphin catch).

In response to continued pressure from animal-rights groups, the three largest U.S. tuna canners announced in April 1990 that they would no longer use tuna that had been harvested using methods that endangered dolphins. Under this so-called "dolphin-safe" policy, canners would purchase frozen tuna only if certified observers could confirm in writing that the vessel made no net sets in association with dolphin during the fishing trip. In addition, they announced that they would purchase no tuna caught with gillnets or driftnets, (nets designed to catch albacore but which may also catch anything in their way, including marine mammals).

Although the canneries voluntarily instituted the "dolphin-safe" policy,[7] they have expressed particular concerns about its costs. First, the cost of processing dolphin-safe tuna from the eastern Pacific is higher than for dolphin-associated tuna because dolphins tend to associate with larger yellowfin, whose processing involves lower cleaning costs and higher yields per ton of fish than that of smaller fish. Second, since U.S. canneries in Puerto Rico and California that process eastern Pacific tuna will have to rely on schools of smaller yellowfin or of skipjack, (a relatively small tuna), further increasing processing costs. Third, yellowfin is a slightly superior product to skipjack (which is more "fishy"), and so some canners believe the overall quality of U.S. production will decline. The move, therefore, gives advantages in terms of cost and marketing to the two U.S. canneries (Star-Kist and Van Camp) located in American Samoa, which rely more heavily on western Pacific tuna.

Vessel owners' concerns also include the fact that dolphins tend to associate with larger yellowfin, so vessels that sell to U.S. canneries would have to rely on schools of smaller yellowfin or of skipjack, both of which tend to command lower unit prices than large yellowfin. In addition, vessels may have to move to alternative locations, such as the western Pacific, which may prove expensive or impossible for smaller or older vessels unable to navigate the transocean trip.

[6] U.S. International Trade Commission, *Competitive Conditions in the U.S. Tuna Industry*, USITC Publication 1912.

[7] How "voluntary" the move was is debatable; some industry sources suggest that it was designed to head off pending federal legislation to the same effect. The "Boxer bill" (so named after its California sponsor), H.R. 2926, would "require tuna products to be labelled respecting the method used to catch the tuna... "

U.S. albacore vessels, however, may benefit from the dolphin-safe policy. Unlike many foreign fleets, U.S. albacore harvesters do not employ gillnets or driftnets; rather, they use longlines, which are dolphin-safe. The increased canneries' demand for their product may boost the price received by these harvesters.

The 200-Mile Limit and Tuna Management

The United States does not include tuna under unilateral jurisdiction within its 200-mile fishery conservation zone, nor does it recognize such claims by other nations. The reason for this is that tuna are highly migratory, and it is therefore the U.S. position that no one nation has the ability to effectively manage tuna resources. Instead, the U.S. position historically has been that multilateral management, coordinated with all nations adjacent to a tuna stock's migratory area, is the best means to manage tuna fisheries.

Most other nations disagree with the U.S. position. As described later in the report, there is a history of disputes with other nations over access by U.S. tuna harvesters to the territorial waters claimed by other nations. Such disputes have put pressure on the United States to concede and include tuna among the fishery resources suitable for unilateral jurisdiction. To date, the United States has maintained its position in the face of this foreign pressure and instead has successfully negotiated some important multilateral fishery agreements, first, among some Latin American nations and, more recently, among a group of nations and island states in the southern and southwestern Pacific. These agreements are described later in the report.

Recently, however, domestic pressure to include tuna within the 200-mile limit has surfaced from sportsfishermen, charterboats, and from other interests with a stake in the tuna fisheries of the East Coast and the Gulf of Mexico. These fisheries are not targeted by vessels supplying the cannery sector. Rather, they support recreational fishermen, as well as the small (but growing) U.S. restaurant demand for fresh tuna and sushi (raw tuna). These interests indicate that they would like to see tuna included in the management authority of the United States, in order to maintain control of tuna fishing activity to prevent future depletion from overfishing.

Such a possible change in U.S. policy raises concerns among tuna harvesters connected with the canned tuna industry because such a policy in their view would amount to a concession to other nations' positions and a recognition of their rights to unilaterally restrict access by U.S. tuna harvesters to foreign territorial waters. Until now, U.S. harvesters have enjoyed access to such waters because of international agreements, and, in some cases, simply because many tuna-rich nations haven't had the capability to effectively patrol its waters and enforce its jurisdictional claims. According to industry sources, if the system of multilateral agreements broke down in favor of unilateral jurisdiction, the variation in national policies that U.S. harvesters would likely encounter as they follow tuna resources along their migration routes would add to the cost and uncertainty of tuna fishing.

Chapter 2
The U.S. Tuna Industry

The Harvesting Sector

Methods Of Production

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. These three fleets are differentiated by gear type, geographic location, and target species of tuna.

Purse Seiners

Purse seiners are large, well-equipped ocean-going ships that sail the fishing grounds of the high seas in search of tuna. The so-called "super-seiners," which are quite common, can cost from $10 million to $15 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. These vessels are equipped with a vast array of electronic equipment, such as radar, position finders, depth recorders, automatic monitoring systems, satellite navigation and sonar systems, and radios, as well as one or two helicopters. The vessels normally carry a crew of 18, including the helicopter pilot(s). They can stay at sea for several months at a time and usually make three to four fishing trips a year. The bulk of the U.S. tropical tuna (mainly yellowfin and skipjack) catch is taken by this gear type.

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. The majority of the U.S. albacore catch is made using this gear type.

Baitboats

Baitboats, which historically accounted for the majority of the U.S. tuna catch before the early 1960s, range in carrying capacity from 70 to 150 tons per vessel. These vessels are equipped with bait-carrying facilities, refrigeration equipment, and navigational aids. 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.

[1] These vessels are usually around 1,200 tons carrying capacity, but can sometimes be as large as 2,000 tons. Capacity in tuna harvesting is measured in round fish weight, or whole fish weight before processing.

Quantity and Value of Production

Table 2-1 shows commercial landings of tuna by U.S. harvesters during 1986-89. Landings fluctuated during the period and totaled 541 million pounds (or about 271,000 short tons), valued at $309 million, in 1989. The great bulk of the U.S. tuna catch occurs on the high seas or in foreign waters. Virtually all of the catch is from the Pacific Ocean.

The following tabulation shows U.S. commercial tuna landings, by area, 1986-89 (data from the National Marine Fisheries Service (NMFS), in short tons):

Year	*Atlantic, Gulf, and Pacific Coast States and Hawaii*	*Puerto Rico and American Samoa*	*Total*
1986	43,906	234,517	278,423
1987	50,029	263,093	313,122
1988	55,675	248,988	304,662
1989[1]	44,707	226,025	270,732

[1] Preliminary data.

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, the result of a relocation of many vessels' harvesting activity from the eastern Pacific to the western Pacific.[2] This shift generally stabilized during 1986-89, as shown by the above data.

U.S. Landings by Species

Yellowfin and skipjack are the principal species caught by U.S. tuna fishermen. Yellowfin and skipjack together accounted for 96 percent of the total U.S. tuna catch in 1989 (table 2-1). Albacore accounted for most of the remainder of the catch, with even smaller catches of bigeye and bluefin (which are relatively unimportant to U.S. fishermen).

[2] U.S. International Trade Commission, *Competitive Conditions in the U.S. Tuna Industry*, USITC Publication 1912, October 1986, pp. 5, 9-12.

Table 2-1
Tuna: U.S. landings[1] by species and distance caught off U.S. shores and in international waters, 1986-89

Year and species	From 0 to 3 miles Quantity	Value	Between 3 and 200 miles Quantity	Value	High seas or off foreign shores Quantity	Value	Total Quantity	Value
	1,000 pounds	1,000 dollars	1,000 pounds	1,000 dollars	1,000 pounds	1,000 dollars	1,000 pounds	1,000 dollars
1986:								
Albacore	6	4	9,122	4,896	2,447	1,341	11,575	6,241
Bigeye	21	88	1,278	4,820	85	184	1,384	5,092
Bluefin	(2)	1	7,755	5,424	2,932	1,366	10,687	6,791
Skipjack	210	237	2,113	2,201	235,141	75,456	237,464	77,894
Yellowfin	277	402	11,370	14,792	281,117	104,780	292,764	119,974
All other	75	16	728	999	338	227	1,141	1,242
Total	589	748	32,366	33,132	522,060	183,354	555,015	217,234
1987:								
Albacore	3	1	4,795	3,932	4,735	3,405	9,533	7,338
Bigeye	8	20	2,910	8,646	527	848	3,445	9,514
Bluefin	1	3	2,575	13,944	1,756	2,516	4,332	16,463
Skipjack	(2)	(2)	4,226	3,882	225,962	85,140	230,188	89,022
Yellowfin	490	637	16,884	28,015	360,170	169,437	377,544	198,089
All other	146	21	762	518	294	467	1,202	1,006
Total	648	682	32,152	58,937	593,444	261,813	626,244	321,432
1988:								
Albacore	4	2	8,896	7,566	10,155	8,710	19,055	16,278
Bigeye	63	270	3,667	12,860	1,719	2,019	5,449	15,149
Bluefin	16	21	2,916	16,877	813	407	3,745	17,305
Skipjack	1	1	5,291	5,772	294,707	143,279	299,999	149,052
Yellowfin	495	885	25,481	39,353	254,319	141,964	280,295	182,202
All other	98	9	683	537	(2)	(2)	781	546
Total	677	1,188	46,934	82,965	561,713	296,379	609,324	380,532
1989:								
Albacore	5	1	3,392	2,728	8,709	7,781	12,106	10,510
Bigeye	171	594	4,205	14,400	171	593	4,547	15,587
Bluefin	3	27	3,191	22,142	1,555	724	4,749	22,893
Skipjack	290	322	3,362	3,542	241,940	97,689	245,592	101,553
Yellowfin	360	543	20,354	35,116	252,942	121,951	273,656	157,610
All other	89	20	710	763	14	16	813	799
Total	918	1,507	35,214	78,691	505,331	228,754	541,463	308,952

[1] Landings reported in round (live) weight.
[2] Less than 500.

Note.—Data include landings by U.S.-flag vessels at Puerto Rico and ports outside the customs territory of the United States.

Source: Compiled from official data of the National Marine Fisheries Service.

U.S. Production by Location

Table 2-2 provides data on the U.S. tuna catch by location. The western Pacific area is the predominant location, accounting for 59 percent of the quantity of the U.S. tuna catch in 1989. This share grew tremendously during the 1980s, as it was only 6 percent of the total in 1980.[3] The western Pacific became the leading production area in 1983 as a result of a shift in fishing effort caused by an unusually severe occurrence of the El Nino phenomenon. The bulk of the remainder of the U.S. tuna catch during 1986-89 occurred in the eastern Pacific, with a small amount of the catch accounted for by the western Atlantic area (table 2-2).

U.S. Production by Type of Vessel

Purse seine vessels generally account for 95 percent or more of the total U.S. catch of tuna. Yellowfin and skipjack are the principal components of the purse seine catch. Baitboats principally land yellowfin and skipjack. Trollers mainly land albacore and usually account for virtually the entire U.S. albacore catch. 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 accounts for approximately 5 percent of the total U.S. catch of tuna. A relatively minute share of the total U.S. catch of tuna is accounted for by small jigboats.

Domestic Production Versus Exports

The following tabulation shows U.S. exports of raw tuna (all species) during 1986-89 (data from the NMFS; in short tons):

Year	Exports
1986	33,746
1987	29,963
1988	39,954
1989	26,846

[3] U.S. International Trade Commission, *Competitive Conditions in the U.S. Tuna Industry*, USITC publication 1912, October 1986, p. 161.

Table 2-2
Cannery receipts of raw tuna and domestic exports: U.S.-flag vessels domestically-landed raw tuna, by species and locations of the catch, 1986-89[1]

Species and location	1986	1987	1988	1989
	Short tons			
Albacore:				
East Atlantic	0	0	0	0
West Atlantic	0	0	8	0
East Pacific	3,158	2,589	4,276	1,624
West Pacific	369	1,088	3,376	3,257
Total	3,527	3,677	7,660	4,881
Skipjack:				
East Atlantic	0	0	0	0
West Atlantic	1,825	884	0	0
East Pacific	7,938	14,845	39,325	21,582
West Pacific	103,049	87,842	110,145	99,304
Total	112,812	103,571	149,470	120,886
Yellowfin:[2]				
East Atlantic	0	0	0	0
West Atlantic	839	60	18	0
East Pacific	103,402	106,300	98,827	81,610
West Pacific	40,359	70,291	27,298	45,461
Total	144,600	176,651	126,143	127,071
All species:				
East Atlantic	0	0	0	0
West Atlantic	2,664	944	26	0
East Pacific	114,498	123,734	142,428	104,816
West Pacific	143,777	159,221	140,819	148,022
Total	260,939	283,899	283,273	252,838
	Thousands of pounds			
Albacore:				
East Atlantic	0	0	0	0
West Atlantic	0	0	16	0
East Pacific	6,316	5,178	8,552	3,248
West Pacific	738	2,176	6,752	6,514
Total	7,054	7,354	15,320	9,762
Skipjack:				
East Atlantic	0	0	0	0
West Atlantic	3,650	1,768	0	0
East Pacific	15,876	29,690	78,650	43,104
West Pacific	206,098	175,684	220,290	198,608
Total	225,624	207,142	298,940	241,772
Yellowfin:[2]				
East Atlantic	0	0	0	0
West Atlantic	1,678	120	36	0
East Pacific	206,804	212,600	197,654	163,220
West Pacific	80,718	140,582	54,596	90,922
Total	289,200	353,302	252,286	254,142
All species:				
East Atlantic	0	0	0	0
West Atlantic	5,328	1,888	52	0
East Pacific	228,996	247,468	284,856	209,632
West Pacific	287,554	318,442	281,638	296,044
Total	521,878	567,798	566,546	505,676

[1] Includes tuna landed directly or transshipped to a foreign country; excludes tuna exported from the east coast.
[2] Includes bigeye, blackfin, and bluefin tuna.

Source: National Marine Fisheries Service, Industry Analysis and Information Section, Southwest Region.

Exports historically have played a very minor role in the U.S. tuna-harvesting industry 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 increased in the early 1980s to the levels shown above, mainly the result of increased demand for frozen tuna in Thailand. This demand was largely stimulated by contracts between U.S. and Thai canned tuna producers for large quantities of imported canned tuna for distribution in the U.S. market. Even so, export levels are relatively minor and usually account for less than 15 percent of production on an annual basis. Export levels and trends for frozen tuna are discussed in further detail in the section on U.S. trade in tuna later in the report.

Structure of the U.S. Tuna-Harvesting Sector

The U.S. purse seine fleet, although made up of several dozen firms, can be considered concentrated by virtue of the marketing representation provided by the American Tuna Sales Association (ATSA), the lobbying services of the American Tunaboat Association (ATA); and the traditionally strong financial connection to the processing sector. At least half of the purse seine fleet historically belonged to ATSA and ATA, and the ATSA-negotiated price for frozen tuna sold to canneries has traditionally been representative of the market prices received by non-ATSA vessels as well. However, as discussed below, the market share held by imported frozen tuna is quite high, and this ready availability of imports as an alternative to domestic tuna has given the canneries a greater hand in bargaining with the vessels and their representatives.

The canneries' financial investment in the fleet has been a long-standing aspect of industry structure. For most of its history, the harvesting sector has been financed or owned by the canneries. This arrangement historically served both sides. With the canneries' funds, the vessel captains were able to finance the high cost ($5 million–$15 million) of modern purse seiners. In return, the canneries were guaranteed a supply of frozen tuna from the vessels they helped finance.

However, in recent years, this cannery-vessel link has disintegrated, apparently for two reasons. First, there is a ready supply of imported raw tuna that is priced at free-market levels only remotely influenced by ATSA. This import supply has resulted from a growing foreign catch of tuna (partly the result of the above-noted sale of U.S.-flag vessels to foreign interests). Second, the fleet suffered severe financial losses in the first half of the 1980s (which was documented in previous Commission investigations). Since that time, canneries have divested much of their financial obligations to these vessels.

Number and Location of Producers

The size of the purse seine fleet has been declining for several years. According to industry sources, most of the vessels that have left the U.S. fleet were sold to foreign-flag enterprises for use in the same tuna fisheries they fished in as U.S.-flag vessels. The locational shift that was of such concern in the section 201 investigation in 1984 (see ch. 1) stabilized during 1986–89. The 1984 El Nino, which occurred in the traditionally important eastern Pacific waters, forced much of the fleet to move to the previously underexploited western Pacific tuna fishery. Fishing was so successful in the latter location that a large portion of the fleet remained even after the El Nino effects dissipated. Since then, both locations have contributed significantly to total U.S. supplies of frozen tuna. However, in 1990, with the announcement by U.S. tuna canners that they would no longer purchase tuna caught in association with porpoise, most of the U.S. tuna vessel operators that have been fishing in the eastern Pacific are abandoning that area and will either shift to the western Pacific or sell their vessels.[4]

The following sections provide data on the structure of the U.S. tuna harvesting sector.

Number of producers

The total number of U.S. tuna harvesters declined during 1986–89. Table 2–3 provides data on the U.S. purse seine fleet. The number of purse seiners decreased from 90 in 1986 to 63 in 1989. Most of the decline was accounted for by sales of vessels to foreign-flag owners.

Table 2–4 shows the number of baitboats and jigboats operating in the eastern Pacific. The number of baitboats rose from 3 in 1986 to 12 in 1988, while the number of jigboats totaled 3 the latter year. Although these numbers increased during the period, the share of the tuna catch accounted for by these vessels is minimal.

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; it is believed that this number 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.

[4] Commission staff interview with members of the American Tunaboat Association, San Diego, Sept. 20, 1990. Because dolphins associate with tuna only in the eastern Pacific, the drive to market "dolphin-safe" tuna will put pressure on harvesters to leave the eastern Pacific, causing them to concentrate most of their effort on the western Pacific.

Location of producers

The eastern Pacific historically has been the principal fishing grounds for the U.S. tuna fleet (all vessel types). However, conditions such as a temporary decline in the yellowfin resource caused by the El Nino oceanographic currents that led to fewer catches in the eastern Pacific in the early 1980s 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. A number of vessels remained in the western Pacific after conditions improved in the eastern Pacific.

Table 2-4 shows the number and capacity of U.S.-flag vessels operating in the eastern Pacific during 1986-88. In 1988, 59 purse seiners, with a hold capacity of 44,578 short tons, actively pursued tuna fishing in the eastern Pacific. This represented approximately 83 percent of the number and 57 percent of the total capacity of the U.S. purse seine fleet that year. Virtually all of the remainder of the U.S. tuna purse-seine

Table 2-3
U.S. tuna purse seine fleet: Fleet size, additions, removals, and average capacity, January 1, 1986 to January 1, 1990

Year	Fleet size on January[1]		Additions during year		Removals during year		Net change during year		Average capacity, January
	No.	Capacity [1]	No.	Capacity	No.	Capacity	No.	Capacity	
1986	90	97,131	1	1,500	11	10,742	-10	-9,242	1,079
1987	80	87,889	4	3,800	13	13,510	-9	-9,710	1,099
1988	71	78,179	3	4,400	11	12,650	-8	-8,250	1,115
1989	63	69,929	3	3,700	3	2,670	0	-1,030	1,110
1990	63	70,959	[2]	[2]	[2]	[2]	[2]	[2]	1,126

Summary of additions by type

Year	New		Transfer from other fishery		Total additions	
	No.	Capacity	No.	Capacity	No.	Capacity
1986	1	1,500	0	0	1	1,500
1987	1	1,200	3	2,600	4	3,800
1988	1	1,200	2	3,200	3	4,400
1989	1	1,500	2	2,200	3	3,700

Summary of removals by type

Year	Lost at sea		Transfer to other fishery		Sale to foreign flag		Total removals	
	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity
1986	3	2,242	1	950	7	7,750	11	10,742
1987	1	1,400	0	0	12	12,110	13	13,510
1988	0	0	0	0	11	12,650	11	12,650
1989	1	270	0	0	2	2,400	3	2,670

[1] Capacity in short tons, carrying capacity.
[2] Not available.

Source: Data submitted by American Tunaboat Association, prehearing brief, July 27, 1990.

Table 2-4
Number and capacity[1] of U.S.-flag vessels operating in the eastern Pacific Ocean, by vessel type, 1986-88

Vessel type and year	Number of vessels	Total capacity	Average capacity
		Short tons	Short tons
Purse seiners:			
1986	64	43,235	676
1987	54	41,965	777
1988	59	44,578	756
Baitboats:			
1986	3	348	116
1987	11	668	61
1988	12	938	78
Jigboats:			
1986	0	0	[2]
1987	0	0	[2]
1988	3	70	23

[1] Carrying capacity.
[2] Not meaningful.

Source: Compiled from official statistics of the *Annual Report of the Inter-American Tropical Tuna Commission*, various annual issues.

fleet was located in the western Pacific. 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 virtually all of the tuna resources harvested by U.S. fishermen. 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 was a movement away from the eastern Pacific and to the western Pacific during 1982–84. In 1985, many vessels returned to the eastern Pacific, and this region partially regained its prominence. The fleet location generally was stable during 1986–89. However, with the announcement of the "dolphin-safe" policy by U.S. tuna canners, this region likely will be virtually abandoned by the U.S. tuna fleet after 1990.

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, as well as by the recent "dolphin-safe" policy of the U.S. canned tuna industry.[5]

Employment

The average number of persons employed varies, depending on the size of the vessel. In general, the average crew size is about 18. 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.

Wages are distributed generally in one of two systems. 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. 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. 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.[6]

Capacity and Capacity Utilization

Table 2-3 presents data on the capacity of the U.S. tuna purse seine fleet. The total fleet capacity declined 28 percent during 1986–89; most of this decline was accounted for by sales of vessels to foreign-flag owners.

Table 2-5 shows capacity utilization rates during 1986–89, based upon an assumed average of 3.5 trips per year per vessel.[7] On this basis, capacity utilization showed a distinct upward trend during the period under review. This likely resulted from a streamlining in tuna harvesting operations whereby less efficient vessels exited the industry and existing vessels were utilized to a greater extent.

Financial Experience of the U.S. Purse Seine Fleet

This section provides financial information obtained through questionnaires prepared by owners of U.S.-flag tuna purse seiners for the period 1986–89. Comparative information for 1979–85 which was obtained under investigation No. 332-224 is included. Since different numbers of vessel owners responded each year, and to be consistent with prior years' reporting, the information is presented on a per vessel average. Due to the large decrease in the number of returned questionnaires between the 1979–85 and 1986–89 time periods, the discussion is generally limited to the 1986–89 period. Based on a U.S. purse seine fleet of about 60 vessels, the questionnaire respondents represented approximately 43 percent of the fleet.

Profit-and-Loss Experience

Table 2-6 presents financial data on the tuna purse seiners that responded to the Commission's

[5] The factors causing the historical shifts in fleet location are discussed in further detail in *Competitive Conditions in the U.S. Tuna Industry*, USITC publication 1912, October 1986, pp. 9-11.

[6] U.S. International Trade Commission, *Competitive Conditions in the U.S. Tuna Industry*, USITC publication 1912, October 1986, p. 11.

[7] It should be noted that capacity utilization rates for tuna boats are arbitrary at best. 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.

Table 2-5
U.S. tuna purse seiners: Capacity and capacity utilization, 1986-89

Jan. 1 of—	Total catch	Total fleet capacity[1]	Share of total catch
	Short tons	Short tons	Percent
1986	260,939	339,959	77
1987	283,899	307,612	92
1988	283,273	273,627	104
1989	252,838	244,752	103

[1] The total fleet capacity was derived by multiplying the annual fleet capacity by 3.5; the average number of trips per year.

Source: Data on capacity compiled from information provided by the American Tunaboat Association; catch data represent cannery receipts.

questionnaires during 1979-89,[8] and table 2-7 analyzes the data as a percent of expenses before depreciation and amortization. Net sales per vessel rose sharply from approximately $2.7 million in 1986 to about $3.8 million in 1988 before declining to $3.1 million in 1989. The rapid increase in sales revenue from 1986 to 1988 was due to increased revenue per ton received for tuna ($649 per ton in 1986, $835 per ton in 1987, and $999 per ton in 1988). During the same time period, the amount of tuna delivered per vessel dropped from 4,390 tons in 1986 to 3,698 tons in 1987 and 3,681 tons in 1988. In 1989, decreased revenue per ton levels ($895 per ton) coupled with depressed catch levels (3,385 tons per vessel) resulted in losses on the vessels' operations.

Although overall expenses (including depreciation and amortization) rose moderately throughout the period from about $3.07 million in 1986 to about $3.43 million in 1989, individual items fluctuated substantially. Repair expense increased over 93 percent from about $264,000 in 1986 to about $510,000 in 1989, perhaps a result of the increase in the average life of the boats over the prior reporting period from 11.9 to 15.6 years. Depreciation and amortization also rose substantially, from approximately $265,000 in 1986 to approximately $390,000 in 1989. This approximate 50 percent increase was due to continuing capital expenditures and amortization of increasing drydock costs.

On the other hand, interest expense dropped sharply from $349,000 in 1986 to a low of $141,000 in 1988 before rising to $205,000 in 1989. The main reason is not a large reduction in debt, but rather the fact that interest expenses are not comparable within the time period. Approximately half of the boat owners responding to the 1986-89 questionnaires indicated that the debt on their boats was restructured during 1987-88. Some had a portion of the debt forgiven, some negotiated lower interest rates, and some received financing from parties which had a substantial financial interest in the tuna boats. In the latter case, interest expense is accrued only to the extent it is actually paid. Decreased interest payments on behalf of such boats accounted for approximately two-thirds of the decrease in 1988 and 1989 interest expense from the 1986 expense. Therefore, even though total debt levels have stayed approximately the same both before and after debt renegotiation, interest payments attributable to vessel operations have dropped sharply.

Three cost categories with significant change between the 1979-85 and 1986-89 time periods are crew expense, fuel expense, and insurance. The large increase in crew expenses over the 1979-85 data is a direct result of the increased level of sales, since some crews are paid based on a share of revenues. The decrease in fuel expenses during the 1986-89 period compared with prior periods is primarily due to the decrease in the price of fuel. Some owners indicated that another contributing factor was shorter voyages (due to increased catches). Insurance expense, however, is now about twice what it was during the previous period. It has increased almost every year since 1979, both in terms of dollars and as a percent of expenses, and in 1989 was 12.3 percent of expenses (see table 2-7) as opposed to only 5.7 percent in 1979. Boat owners indicated that this is merely a reflection of ever increasing insurance costs in all segments of the marine industry; however, their responses indicate that the blue-water tuna industry in particular has performed better than average with respect to insurance claims over the last few years, but premiums were increased along with those for other vessel operators.

[8] The data presented for the 1979-89 period were obtained from three 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, 1984); the second set collected data covering 1984-85, which are those presented in the Commission's report on the 1986 section 332 investigation (*Competitive Conditions in the U.S. Tuna Industry*, USITC Publication No. 1912, Oct. 1986); and the third set collected data covering 1986-89 in connection with the subject investigation.

Table 2-6

Frozen tuna: Profit-and-loss data for U.S. tuna purse seiners, average per vessel, accounting years 1979-89

Item	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
	Value (in dollars)										
Net sales of tuna	1,445,886	2,226,952	2,185,942	2,051,667	2,111,452	2,786,039	2,287,353	2,739,476	2,921,360	3,783,440	3,127,615
Crew expense	472,456	673,747	625,837	555,235	542,849	759,745	620,941	827,238	791,960	926,680	841,423
Fuel expense	257,557	431,241	503,419	520,510	465,269	547,196	532,686	419,095	377,640	406,840	460,423
Galley expense	31,215	43,434	50,326	52,196	49,462	61,980	59,118	64,857	69,320	78,320	82,000
License fees	8,557	11,253	10,256	12,225	17,312	23,745	23,234	31,048	27,880	64,680	48,808
Transhipment fees	671	5,663	7,140	67,020	79,774	84,098	76,255	29,048	22,320	58,214	40,706
Repairs	229,747	291,193	276,291	314,324	260,409	246,392	261,275	263,952	278,240	456,920	509,769
Gear and supplies	27,215	35,060	44,709	42,892	50,236	67,353	64,804	70,333	89,840	117,680	103,885
Insurance	85,367	100,880	129,046	141,980	143,548	198,529	267,667	335,714	303,880	345,720	373,269
Helicopter	25,456	40,566	56,128	72,510	79,258	75,490	93,451	83,905	95,480	126,000	106,577
Travel	19,582	25,084	30,744	37,471	39,140	29,608	27,647	21,190	22,600	31,640	39,231
Administration	30,696	42,566	41,965	46,206	43,204	55,784	61,941	92,429	84,240	105,160	90,769
Interest	177,202	249,843	355,640	422,549	376,140	285,294	280,000	349,048	274,520	140,680	204,962
Other expenses	126,418	119,554	137,035	167,147	118,828	169,667	229,412	218,905	160,160	135,400	137,269
Total expenses excluding depreciation and amortization	1,492,139	2,070,084	2,268,535	2,452,265	2,265,430	2,604,881	2,598,431	2,806,762	2,598,080	2,993,934	3,039,091
Income or (loss) before depreciation and amortization, taxes and other	(46,253)	156,867	(82,593)	(400,598)	(153,978)	181,158	(311,078)	(67,286)	323,280	789,506	88,524
Depreciation and amortization	156,139	199,626	257,140	290,520	308,763	291,765	276,647	264,857	255,967	314,818	389,910
Income or (loss) before taxes and other income/ expenses	(202,392)	(42,759)	(339,732)	(691,118)	(462,742)	(110,607)	(587,725)	(332,143)	67,313	474,688	(301,386)
	Share of net sales (in percent)										
Income or (loss) before depreciation and amortization, taxes and other	(3.2)	7.0	(3.8)	(19.5)	(7.3)	6.5	(13.6)	(2.5)	11.1	20.9	2.8
Income or (loss) before taxes and other income/ expenses	(14.0)	(1.9)	(15.5)	(33.7)	(21.9)	(4.0)	(25.7)	(12.1)	2.3	12.5	(9.6)
	Number of—										
Vessels reporting	79	83	86	102	93	51	51	21	25	25	26
Organizations reporting	56	56	56	56	56	42	42	11	12	12	13

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 2-7

Frozen tuna: Individual cost items as a share of total expenses before depreciation for U.S. tuna purse seiners, average per vessel, accounting years 1979-89

Item	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
	Share of net expenses excluding depreciation and amortization										
Crew expense	31.7	32.6	27.6	22.6	24.0	29.2	23.9	29.5	30.5	31.0	27.7
Fuel expense	17.3	20.8	22.2	21.2	20.5	21.0	20.5	14.9	14.5	13.6	15.2
Galley expense	2.1	2.1	2.2	2.1	2.2	2.4	2.3	2.3	2.7	2.6	2.7
License fees	0.6	0.5	0.5	0.5	0.8	0.9	0.9	1.1	1.1	2.2	1.6
Transhipment fees	(1)	0.3	0.3	2.7	3.5	3.2	2.9	1.0	0.9	1.9	1.3
Repairs	15.4	14.1	12.2	12.8	11.5	9.5	10.1	9.4	10.7	15.3	16.8
Gear and supplies	1.8	1.7	2.0	1.8	2.2	2.6	2.5	2.5	3.5	3.9	3.4
Insurance	5.7	4.9	5.7	5.8	6.3	7.6	10.3	12.0	11.7	11.6	12.3
Helicopter	1.7	2.0	2.5	3.0	3.5	2.9	3.6	3.0	3.7	4.2	3.5
Travel	1.3	1.2	1.4	1.5	1.7	1.1	1.1	0.8	0.9	1.1	1.3
Administration	2.1	2.1	1.9	1.9	1.9	2.1	2.4	3.3	3.2	3.5	3.0
Interest	11.9	12.1	15.7	17.2	16.6	11.0	10.8	12.4	10.6	4.7	6.7
Other expenses	8.4	5.6	5.8	6.9	5.3	6.5	8.7	7.8	6.2	4.5	4.5
Expenses excluding depreciation and amortization	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Depreciation and amortization	10.5	9.6	11.3	11.8	13.6	11.2	10.6	9.4	9.9	10.5	12.8
	Number of—										
Vessels reporting	79	83	86	102	93	51	51	21	25	25	26
Organizations reporting	56	56	56	56	56	42	42	11	12	12	13

[1] Less than 0.05 percent

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Cost Structure of the U.S. Purse Seine Fleet

The following tabulation compares per vessel cost, capital expenditures, and age data for the 1986–89 fleet and the 1984–85 fleet:[9]

	1984–85 fleet		1986–89 fleet	
Average vessel cost	$4,563,833		$5,030,000	
Average capital expenditures per vessel per year	$99,789		$158,021	
Average number of years vessel owned	10.2		12.5	
Number and percent of total of vessels aged-	Number	Percent	Number	Percent
0 to 5 years	9	17.7	0	0.0
6 to 10 years	16	31.4	5	18.5
11 to 15 years	17	33.3	5	18.5
16 to 20 years	7	13.7	15	55.6
20 years and older	2	3.9	2	7.4
Total	51	100.0	27	100.0
Average age of fleet	11.9 years		15.6 years	

Of the 27 vessels for the 1986–89 fleet, one was sold during the time period covered by the questionnaire, one was going to be sold, and one sank. The most noticeable change from the prior study is the increase in the average age of the fleet. Sixty-three percent of the fleet is now 16 years old and older, as opposed to only about 18 percent in the previous reporting period. High mortgages are the norm. Together with an aging fleet, other indications of financial decline are (1) owners making less than full interest payments on their mortgages (see discussion in processors' section), (2) the fact that all capital expenditures were financed by the owners—no outside sources of capital were utilized, and (3) vessels tied up due to a lack of working capital. Perhaps even more revealing is the fact that no new boats were introduced into the fleet during the questionnaire period, thus increasing the average age of the remaining fleet.

Table 2–7 presents data on the cost structure of the U.S. tuna purse seine fleet. Crew expenses remained the primary cost item during the past decade and ranged between about 23 percent and 33 percent of total costs annually during 1979–89. Fuel expenses generally declined as a share of total costs after 1985, as diesel fuel prices dropped substantially. On the other hand, insurance expenses increased substantially during the decade, reaching 12 percent of total costs in 1989. Repair expenses, which fluctuate annually, accounted for nearly 17 percent of total costs in 1989, up from about 9 percent in 1986. It is believed that the refitting of vessels to fish in the western Pacific was the primary cause of this rise.

[9] As of 12/31/85 and 12/31/89, respectively.

Government Involvement

In addition to the regulation of the dolphin catch noted earlier, the U.S. government is involved in tuna harvesting in two areas—access to fishing grounds and financial assistance.

Access to Fishing Grounds

Because most U.S. tuna vessels operate beyond the 200-mile fishery zone claimed by the United States, U.S. vessels' fishery access is controlled primarily by foreign governments and international agreements negotiated with the United States. Such access control presents problems because the United States neither claims unilateral jurisdiction over tuna resources nor recognizes such claims of other nations. The reason for this exclusion of tuna from national fishery jurisdiction is that tuna are highly migratory and that, because tuna populations typically spend only a few weeks or months per year in the waters adjacent to any one country, no one country has the ability to effectively manage or control the fishing of these populations. The U.S. position is that the proper management arrangement is a multilateral one, preferably including all nations in the region within which tuna populations migrate.

An example of such a multilateral agreement is one negotiated in 1986 between the United States and the South Pacific Forum Fisheries Agency (SPFFA), representing about 15 nations and island states in the southern and southwestern Pacific. This region encompasses most of the grounds through which tuna stocks in the western Pacific migrate, and the western Pacific, as noted, is an important fishing area for the U.S. harvesting sector. The agreement basically provides for access by U.S. fishing vessels to the fishery zones claimed by SPFFA members, in return for which the vessels pay certain fees and the U.S. Government provides certain economic development assistance. The achievement of this agreement in 1986 ended several years of disputes over fishing rights, which included the seizure of U.S. fishing vessels by individual nations whose claims of national jurisdiction over tuna were rejected by the United States.

Financial 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 man-made 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.

Financial assistance for vessel construction is available to the tuna industry through the Production Credit Association system of the Farm Credit Administration and through the Fisheries Obligation Guarantee Program and the Fishing Vessel Capital Construction Fund Program of the National Marine Fisheries Service. In general, these programs provide for relatively low-cost financing and tax deferrals.[10]

The Processing Sector

Production

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 byproducts, primarily tuna-based pet food. Tuna loins (which comprise the lighter meat) are processed for human consumption, and the red meat 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 are typically mixed together by U.S. 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); and (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 in oil. Water pack accounted for 75 percent of total U.S. production of canned tuna in 1989. 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 1989, 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.[11]

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

United States production of canned tuna (table 2-8) as reported by the National Marine Fisheries Service of the Department of Commerce ranged from 545.0 million pounds in 1985 to 686.3 million in 1989. The value of U.S. canned tuna production rose from $820.8 million in 1985 to $1.1 billion in 1989. Table 2-8 also shows U.S. production by type and pack for 1985-89. Light meat tuna accounted for between 75 percent and 80 percent of U.S. canned tuna production during the period. Such production consisted primarily of chunk form. Production of albacore or white meat tuna accounted for between 20-25 percent and consisted primarily of solid form.

United States canners are continuing to shift their production from tuna canned in oil to tuna canned in water or brine. According to industry sources, the increase in the production of canned tuna in water started to occur in the early 1980s as a result of a shift in consumer preference to water-packed tuna rather than oil-packed tuna. The trend toward water-packed tuna has continued with U.S. production of water packed accounting for 75 percent of U.S. canned tuna production in 1989.

United States production of canned tuna as reported by responses to the Commission's questionnaire generally increased during 1986-89, totaling 34.6 million cases in 1989, up 6 percent from 1986 (table 2-9). Light meat tuna accounted for between 75 percent and 79 percent of U.S. canned tuna production during the period. Such production consisted primarily of light chunk form. Production of albacore or white meat tuna, primarily of solid form, declined during the period from 25 percent of production in 1985 to 21 percent in 1989.

[10] Respondents to Commission questionnaires reported vessel mortages with principals totalling approximately $8 million financed by the Farm Credit Administration. For further details, see U.S. International Trade Commission, *Competitive Conditions in the U.S. Tuna Industry*, USITC Publication 1912, October 1986, p. 37.

[11] During 1990, most U.S. tuna processors downsized to a 6-1/8 ounce can for chunk and solid tuna, following the lead of StarKist.

Table 2-8
Canned tuna: U.S. production by type and pack, 1985-89

Type and pack	1985	1986	1987	1988	1989
			Quantity (1,000 pounds)		
Albacore					
Solid	116,493	141,726	122,675	114,953	118,229
Chunk	14,859	15,327	17,180	16,166	19,052
Flakes and grated	648	288	36	(2)	(2)
Total	132,000	157,341	139,891	131,119	137,281
Light meat:					
Solid	7,937	6,728	22,055	8,619	10,842
Chunk	405,054	471,881	491,829	457,977	536,933
Flakes and grated	(1)	882	216	468	1,206
Total	412,991	479,491	514,100	467,064	548,981
Grand total	544,991	636,832	653,991	598,183	686,262
			Value (1,000 dollars)		
Albacore:					
Solid	240,308	291,102	277,470	278,745	301,348
Chunk	29,001	29,253	34,873	38,419	43,943
Flakes and grated	653	440	52	(2)	(2)
Total	269,962	320,795	312,395	317,164	345,291
Light meat:					
Solid	11,903	9,109	33,391	15,115	16,317
Chunk	538,904	550,978	670,487	627,487	695,068
Flakes and grated	(1)	636	170	443	1,086
Total	550,807	560,723	704,048	643,045	712,471
Grand total	820,769	881,518	918,446	960,209	1,057,762
			Unit value (per pound)		
Albacore:					
Solid	$2.06	$2.05	$2.26	$2.42	$2.55
Chunk	1.95	1.91	2.03	2.38	2.31
Flakes and grated	1.01	1.53	1.44	(2)	(2)
Total	2.05	2.04	2.23	2.42	2.52
Light meat:					
Solid	1.50	1.35	1.51	1.75	1.50
Chunk	1.33	1.17	1.36	1.37	1.29
Flakes and grated	(1)	.72	.79	.95	.90
Total	1.33	1.17	1.37	1.38	1.30
Grand total	1.51	1.38	1.40	1.61	1.54

[1] Included with albacore.
[2] Included with light meat.

Source: Compiled from official statistics of the U.S. Department of Commerce, National Marine Fisheries Service of the United States 1986-89.

Table 2-9
Canned tuna: U.S. production by type of pack in thousands of standard cases, 1986-89

Type of pack	1986	1987	1988	1989
Water:				
White	6,466	6,003	6,160	6,546
Light	15,461	17,731	17,385	19,310
Total in water	21,927	23,733	23,545	25,857
Oil:				
White	1,544	1,091	956	820
Light	9,047	8,869	8,345	7,913
Total in oil	10,590	9,960	9,300	8,734
Total in Water & Oil:				
White	8,010	7,094	7,116	7,367
Light	24,508	26,600	25,730	27,224
Grand Total	32,517	33,694	32,845	34,591

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

The following tabulation shows the share of U.S. canned tuna production accounted for by various production locations, during 1987–89 (data from prehearing brief of StarKist Foods, Inc., p. 11, in percent):

Location	1987	1988	1989
Puerto Rico	63	57	55
American Samoa	32	37	39
California	6	6	6
Total	100	100	100

During 1987–89, the share of U.S. canned tuna production supplied by Puerto Rican canneries declined, whereas the share supplied by the American Samoan canneries increased. Puerto Rico's share of U.S. canned tuna production declined by 8 percentage points over the period, reflecting in part, production cutbacks. The share of U.S. canned tuna production from American Samoa increased by 7 percentage points during this period whereas production in California remained constant.

Shipments

Data on U.S. shipments of canned tuna by U.S. processors, as reported by responses to the Commission's questionnaires, are presented in table 2–10. Such shipments declined 4 percent between 1986 and 1988, then increased by 8 percent in 1989. The reported value of processors' shipments increased by 16 percent during the period. The average unit value per standard case of tuna rose from $29.76 in 1985 to $36.04 in 1988, then fell to $33.46 in 1989.

Distribution of shipments of U.S. processed canned tuna in retail-size containers for selected categories, institutional-size containers, and total shipments for 1986–89 are shown in table 2–11. Shipments of tuna in retail-size containers accounted for the majority of shipments. In the retail sector, U.S. shipments of the processors' own brand generally increased during the period, whereas shipments of private-label tuna generally declined. Shipments of institutional-sized containers fluctuated during the period, with the processors' own brand accounting for between 66 and 75 percent of institutional shipments during the period.

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, ranged from 82 percent in 1987 to 85 percent in 1989.

Inventories

Data on U.S. processors' inventories are presented in table 2–12. Inventories of canned tuna increased by 32 percent during 1986–89. Inventories of canned tuna in water accounted for the increase, primarily lightmeat, as inventories rose from 5.5 million cases in 1986, to 8.4 million cases in 1989, or by 52 percent. Inventories of canned tuna in oil generally declined during the period by 13 percent. As a proportion of shipments, inventories increased from 23 percent in 1986 to 29 percent in 1989.

Capacity and Capacity Utilization

Domestic capacity to process tuna increased from 41.5 million cases in 1986 to 45.1 million cases in 1989, or by 9 percent (table 2–13). Capacity utilization generally declined slightly during the period from 79 percent in 1987 to 77 percent in 1989.

Number and Location Of Operations

Six U.S. processors of canned tuna currently account for the vast majority of U.S. production.[12] The names of these processors and the locations of their processing facilities are shown in table 2–14. The three largest firms, accounting together for about 80 percent of domestic production of canned tuna in 1989, are StarKist Seafood Company, Bumble Bee Seafoods, and Van Camp Seafood. During 1988–89, Van Camp Seafood and Bumble Bee Seafoods were purchased by Asian companies. The following are brief descriptions of these three companies.

StarKist Seafood Company

StarKist is the largest U.S. tuna processor, with over one-third of the volume of the domestic market[13] and with substantial interests in tuna markets worldwide. StarKist was founded in 1917, as a processor of a variety of seafoods. Since 1963, StarKist has been a wholly owned subsidiary of H.J. Heinz Company (Heinz), a Pennsylvania-based processed-food conglomerate. Heinz owns also 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.

[12] 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.

[13] H.J. Heinz Company, *1989 Annual Report*, p. 45.

Table 2-10
Canned tuna in water or oil: U.S. processors' domestic shipments,[1] by types, 1986-89

Product	1986	1987	1988	1989
	Quantity (1,000 standard cases)			
Tuna in water:				
Whitemeat	5,981	6,201	5,839	6,039
Lightmeat	18,600	19,024	18,826	21,984
Total, tuna in water	24,581	25,225	24,665	28,022
Tuna in oil:				
Whitemeat	1,378	1,240	1,044	909
Lightmeat	9,440	8,764	8,115	7,730
Total, tuna in oil	10,818	10,004	9,158	8,639
Grand total	35,399	35,229	33,823	36,661
	Value (1,000 dollars)			
Tuna in water:				
Whitemeat	259,504	295,065	320,141	327,449
Lightmeat	485,667	545,930	591,065	632,993
Total, tuna in water	745,171	840,995	911,206	960,442
Tuna in oil:				
Whitemeat	59,071	57,129	55,943	48,748
Lightmeat	249,408	250,924	251,740	217,578
Total, tuna in oil	308,479	308,053	307,683	266,326
Grand total	1,053,650	1,149,048	1,218,889	1,226,768
	Unit value (per case)			
Tuna in water:				
Whitemeat	$43.39	$47.58	$54.83	$54.22
Lightmeat	26.11	28.70	31.40	28.79
Average, tuna in water	30.31	33.34	36.94	34.27
Tuna in oil:				
Whitemeat	42.87	46.07	53.59	53.63
Lightmeat	26.42	28.63	31.02	28.15
Average, tuna in oil	28.52	30.79	33.60	30.83
Average, all tuna	29.76	32.62	36.04	33.46

[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 2-11
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, institutional-size containers for selected categories, and total shipments of canned tuna in institutional-sized containers, 1986-89

Year	Retail		Institutional		Total
	Processors own brand[1]	Private label	Processors own brand	Private label	
	Quantity (1,000 standard cases)				
1986	29,611	4,380	933	475	35,399
1987	28,916	4,809	1,067	437	35,229
1988	28,436	4,238	858	291	33,823
1989	31,257	3,851	1,102	450	36,661
	Share of total shipments (percent)				
1986	83.6	12.4	2.6	1.3	100.0
1987	82.1	13.7	3.0	1.2	100.0
1988	84.1	12.5	2.5	0.9	100.0
1989	85.3	10.5	3.0	1.2	100.0

[1] Also referred to as "advertised retail brands."

Note.—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 2-12
Canned tuna: U.S. processors' inventories, by types, as of Dec. 31 of 1986-89

Item	1986	1987	1988	1989
	Quantity (1,000 standard cases)			
Tuna in water:				
Whitemeat	1,911	1,546	1,684	2,151
Lightmeat	3,594	4,108	5,906	6,244
Total, tuna in water	5,505	5,653	7,590	8,395
Tuna in oil:				
Whitemeat	611	393	356	317
Lightmeat	1,861	1,885	1,965	1,829
Total, tuna in oil	2,472	2,278	2,321	2,145
Grand total	7,977	7,931	9,911	10,540
	Ratio of inventories to shipments (percent)			
Tuna in water:				
Whitemeat	32.0	24.9	28.8	35.6
Lightmeat	14.6	21.6	31.4	28.4
Total, tuna in water	22.4	22.4	30.8	30.0
Tuna in oil:				
Whitemeat	44.3	31.7	34.1	34.9
Lightmeat	19.7	21.5	24.2	23.7
Total, tuna in oil	22.9	22.8	25.3	24.8
Grand total	22.5	22.5	29.3	28.7

Note.—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 2-13
Canned tuna: U.S. production, capacity, and capacity utilization, 1986-89

Period	Production in water	In oil	Total	Capacity	Capacity Utilization
	1,000 standard cases				Percent
1986	21,927	10,590	32,517	41,503	78.3
1987	23,733	9,960	33,694	42,904	78.5
1988	23,545	9,300	32,845	43,160	76.1
1989	25,857	8,734	34,591	45,107	76.7

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Approximately 16 percent of the total worldwide sales of Heinz during 1987-89 was accounted for by tuna and tuna-related products, the single largest component of the company's sales.[14] In addition to the "StarKist" brand of canned tuna, StarKist also produced the "9-Lives" brand of tuna-based and other pet foods. In 1988, following reorganization, pet-food products were separated from StarKist Foods, which was already renamed StarKist Seafood Company, and became a separate entity, Heinz Pet Products Company.[15]

Through wholly owned subsidiaries, StarKist operates two U.S. tuna processing plants, whose locations are shown in table 2-14. In addition, StarKist operates tuna processing plants and/or frozen tuna collection stations in Canada, Ghana, France, Colombia, and in other foreign locations and nontuna (pet food) factories in locations around the United States. After being shut down since October 1985 because of a dispute over inspection and product quality, StarKist Foods, Canada, reopened its St. Andrews facility in New Brunswick in November 1988. In mid-1990, StarKist again closed this plant, citing price cuts by canners using Asian imports as the cause of the closure.[16]

In 1984, "in response to continued high costs and the Government's failure to provide relief

[14] H.J. Heinz Company, Form 10-K filed with the Securities and Exchange Commission for fiscal years 1987-89, p. 2.
[15] H.J. Heinz Company, *1989 Annual Report*, p. 45.
[16] See "Post Hearing Brief of StarKist Seafood Company", Sept. 14, 1990, p. 13-14.

Table 2-14
Canned tuna: U.S. processors, location by firms and processing plants, 1990

Firm	U.S. processing plants
Bumble Bee Seafoods, Inc San Diego, CA	Mayaquez, PR. Sante Fe Springs, CA.
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. (closed August 1990)
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. (closed June 1990)

Source: Compiled from information submitted in response to questionnaires of the U.S. International Trade Commission.

from low-priced canned tuna imports,"[17] StarKist closed its Terminal Island, California, tuna-processing plant. Capacity was increased by 22 percent at the company's Puerto Rico plant, reportedly making it the largest tuna processing facility in the world. In 1988, at the company's American Samoa plant, StarKist completed its expansion program, reportedly making that facility the second largest in the world, with a daily raw fish packing capacity of 900,000 pounds.[18]

Bumble Bee Seafoods

Bumble Bee is the second largest U.S. tuna processor, accounting for approximately 23 percent of the market for canned tuna. Bumble Bee began processing fish (other than tuna) in 1899. In 1937, the firm started canning albacore in Oregon and has since been best known as a producer of canned albacore (and salmon). Late 1970s and early 1980s the firm, as an operating division of Castle & Cooke, Inc., expanded by canning lightmeat tuna. 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. The Pillsbury Company, a U.S. food processor, purchased Bumble Bee in the summer of 1988[19]. In September of 1989, Bumble Bee was purchased by Unicord, a private concern of Thailand, for U.S. $269 million.

[17] H.J. Heinz Company, *1985 Annual Report*, p. 17.
[18] H.J. Heinz Company, *1988 Annual Report*, p. 18.
[19] "Turn on to Tuna," *Seafood International*, Dec. 1988, p. 29.

Unicord is a subsidiary of a larger group owned by the Thai Konuntakiet family.[20] Unicord is an agribusiness conglomerate and has established itself as one of the world's largest tuna packers. Unicord is Thailand's largest tuna exporter. Unicord relies on imports of raw tuna for its production of canned tuna and seeks long-term contracts on such procurements to ensure continuous supplies for its production lines. Among its major suppliers of raw tuna are Japan, Taiwan, the United States, Maldives, Papua New Guinea, and Solomon Islands.

Unicord's U.S. operation currently operates a single tuna-processing plant in Puerto Rico and a plant that processes tuna loins in Sante Fe Springs, CA., (table 2-14). In addition, Unicord owns a tuna cannery in Manta, Ecuador, which produces canned tuna for sale in South America and supplies tuna loins for its Puerto Rico plant.[21] Unicord distributes canned tuna in the United States under the "Bumble Bee" label from its own U.S. production facility, as well as from its plants in Thailand. In 1988, 48 percent of Unicord's sales were accounted for by exports to the United States, 35 percent to Europe, 8 percent to Japan, and the remainder to the rest of the world.

[20] "Bumble Bee takeover," *Seafood International*, Oct. 1989, p. 17.
[21] Submission by counsel on behalf of Bumble Bee Seafoods, Inc., in connection with Commission investigation 332-291, Sept. 14, 1990, p. 1.

Van Camp Seafood

Van Camp is the third largest U.S. tuna processor, accounting for 20 percent of the U.S. market for canned tuna.[22] Prior to November 15, 1988, Van Camp was a division of Ralston Purina Company, a Missouri-based producer of processed foods, pet food, and livestock and poultry feeds. Seafoods accounted for approximately 7 percent of Ralston Purina's total sales in 1987[23] (latest data available). Van Camp accounted for substantially all of the parent company's seafood sales. Van Camp produced canned tuna and salmon under the "Chicken of the Sea" label.

On November 15, 1988, P.T. Management Trust (Mantrust), a privately held Indonesian concern, purchased Van Camp and its "Chicken of the Sea" canned tuna brand from Ralston Purina for $260 million.[24] Mantrust, established in 1958, is one of Indonesia's significant food conglomerates. The company has significant holdings in agribusinesses, distribution and trading, retail industries, and shipbuilding. Mantrust's U.S. operation currently operates a single tuna-processing plant in American Samoa (table 2-14). In June of 1990, the firm closed down its processing plant in Ponce, Puerto Rico.

Mantrust distributes canned tuna in the United States under the "Chicken of the Sea" label from its own U.S. production facility, as well as from its facilities in Indonesia. Mantrust has three tuna canneries operating in Indonesia, and distributes canned tuna both to the United States and to western Europe. According to industry sources, Mantrust has a joint venture factory operation with the U.S. tuna fleets cooperative association located in Bali.[25]

[22] "Implications of Thailand's Unicord buy out of Bumble Bee," *World Fishing*, October 1989, p. 53.
[23] Ralston Purina Company, *1987 Annual Report*, p. 15.
[24] Ralston Purina Company, *Annual Report*, p. 22.

Employment and Wages

Industrywide employment in the United States, hours worked, and wage data for all U.S. cannery locations for 1986-89 are presented in table 2-15. Average employment for production and related workers producing canned tuna at all reporting establishments declined between 1986 and 1988, but increased slightly in 1989. Total hours worked and wages fluctuated during the period. Fringe benefits provided to production and related workers increased from $15.5 million in 1986 to $20.2 million in 1989.

The following information on employment and wage rates at U.S. cannery locations has been derived from public statements submitted to the U.S. International Trade Commission, and provides a general discussion regarding the trends of these aspects. During 1985-90, employment in the tuna processing industry in the continental United States declined as companies shifted processing to offshore locations.[26] Employment at Pan Pacific's Terminal Island facility declined from 1,228 workers in 1984 to 525 workers in 1989.

[25] "Industry in Indonesia to grow", *Seafood International*, October 1988, p. 35.
[26] As of November 1990, there are 2 active facilities in the continental United States—a Terminal Island, CA tuna processing plant owned and operated by Pan Pacific, and a Sante Fe Springs, CA plant owned and operated by Bumble Bee where tuna loins are processed.

Table 2-15
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, 1985-89

Item		*1985*	*1986*	*1987*	*1988*	*1989*
Average number employed in the reporting establishments:						
All persons	number	14,197	12,458	12,601	12,151	12,051
Production and related workers producing						
All products	number	13,393	12,040	12,190	11,679	11,690
Canned tuna	do	12,887	11,122	11,118	10,882	10,957
Hours worked by production and related workers producing:						
All products	1,000 hours	21,738	24,392	23,687	25,276	24,259
Canned tuna	do	21,121	21,118	20,388	21,768	21,129
Wages paid to production and related workers producing:						
All products	1,000 dollars	106,362	109,490	108,847	111,382	112,634
Canned tuna	do	101,745	95,439	95,897	98,123	100,799
Value of fringe benefits provided to production and related workers producing:						
All products	1,000 dollars	13,630	15,531	18,925	19,501	20,194
Canned tuna	do	13,037	14,587	18,139	18,870	19,715

[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.

The company is now operating on a 4-day week and man hours worked declined from over 2 million hours in 1984 to less than 1 million in 1989.[27] Employment in Puerto Rico's tuna canneries declined from approximately 15,000 jobs in 1982 to 8,000 in 1989. As of July 1990 the number employed by the canneries totalled approximately 6,600, a decline of 1,400 workers since 1989.[28] Employment in tuna-processing operations in American Samoa increased from 3,318 in 1985 to approximately 4,700 in 1989.[29]

The average wage rate, including fringe benefits, for cannery workers in American Samoa is $3.40 per hour; in Puerto Rico, the minimum wage rate is $7.47 per hour; and in the continental United States, the average wage rate is $12.00 per hour.

Average hourly wages in U.S. locations (continental, Puerto Rico, and American Samoa) generally increased from 1986 through 1989, 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 2-15, increased by 6 percent, from $4.52 per hour in 1986 to $4.77 per hour in 1989.

Data presented in tables 2-13 and 2-15 also indicate that productivity in tuna-canning operations, as measured by the hours worked per case of tuna produced, increased between 1986 and 1989. The number of hours required per case of tuna produced at all locations declined 6 percent, from 0.65 hours per case in 1986 to 0.61 hours per case in 1989. The number of hours required to produce a case of tuna has declined considerably since the Commission's 1986 332 investigation in which the combined hours worked (period 1979-85) per case produced averaged 0.74 hours.

Tuna canneries are vital to the economies of local communities in American Samoa and Puerto Rico where they are a major source of employment. In American Samoa, the tuna canneries account for more that 35 percent of direct, nongovernment employment.[30] According to a recent survey, counting indirect employment, this share jumps to more than 88 percent.[31] The government of American Samoa testified at the Commission's public hearing that alternative employment opportunities in American Samoa for tuna cannery workers are very limited.[32]

The employment provided by tuna canneries in Puerto Rico is less concentrated than in American Samoa since the economy of Puerto Rico is more diverse. Nevertheless, such employment has been important to the communities of Ponce and Mayaguez, where the canneries are located. In is estimated that the tuna canneries in Mayaguez account for about 20 percent of that community's employment.[33] Local and Commonwealth officials have stressed that, historically, the tuna industry has been the "backbone" of the economy of Mayaguez since the early 1960s.[34] Likewise, local government officials in Ponce and Mayaguez stressed the importance of the employment provided by the tuna industry in internal resolutions submitted to the Commission.[35]

Sources of Raw Material Used by the Processing Sector

Raw tuna

In the production of canned tuna, U.S. processors can use either domestic or imported raw (fresh, chilled, or frozen) tuna as raw material with nearly perfect substitutability.[36] Table 2-16 shows U.S. processors domestic and imported purchases of raw tuna for 1986-89. Total purchases of raw tuna, measured by quantity, remained fairly stable, ranging from a low of 1.0 billion pounds in 1988 to a high of 1.1 billion pounds in 1987. Purchases of domestic tuna as a share of the quantity of total purchases increased steadily from 44 percent in 1986 to 52 percent in 1988. In 1989, processors' purchases of domestic tuna declined to 46 percent of the total.

Tables 2-17 and 2-18 show the quantity and value of raw tuna purchased by U.S. processors from both domestic and foreign sources, by species and by quarters, for 1986-89.

Yellowfin and skipjack accounted for between 95 and 99 percent of the domestic quantity purchased by processors during the period. Purchases of yellowfin peaked in 1987, accounting for 63 percent of total domestic purchases,

[27] Testimony of Charles F. Woodhouse, President, GR Foods, Inc., Official Transcript of Proceedings, Aug. 16, 1990, p. 147.

[28] See "*Presentation of the Government of the Commonwealth of Puerto Rico*", by Mr. Hector Melendez, Deputy Administrator, Economic Development Administration, Aug. 16, 1990, p. 2.

[29] *Various Industries in American Samoa*, U.S. Department of Labor, 1990, p. 32.

[30] Ibid., p. 9.

[31] LMR Fisheries Research Inc., *The Economic Position of American Samoa in the 1990 International Tuna Industry*, May 1990, pp. 27-30. This report was commissioned by StarKist Samoa, Inc. and was included as exhibit A in the prehearing submission of Starkist Foods, Inc.

[32] Testimony of Mr. William P. Coleman III, Chief of Staff, Office of the Governor, American Samoan Government, transcript of public hearing, pp. 28-29.

[33] Prehearing brief of StarKist Seafood Company, p. 13.

[34] Commission staff interview with officials of local and Commonwealth government officials, Mayaguez, August 30, 1990.

[35] City Council of the Municipal Government of Ponce, Internal Resolution No. 4, Series 1990-91, August 14, 1990; Municipal Assembly of the Municipality of Mayaguez, Resolution No. 11, Series 1990-91, August 24, 1990.

[36] According to officials of most U.S. processing companies interviewed by the Commission's staff.

Table 2-16
Raw tuna: Processors purchases, domestic, imported, and total, 1986-89

Purchases	*1986*	*1987*	*1988*	*1989*
	Quantity (1,000 pounds)			
Domestic	467,565	537,952	533,431	492,020
Imported	586,091	533,125	484,787	568,576
Total	1,053,656	1,071,077	1,018,218	1,060,596
	Percent of total			
Domestic	44	50	52	46
Imported	56	50	48	54
Total	100	100	100	100

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 2-17

Processors domestic purchases of raw tuna by species, by quarters, 1986-89, (Quantity = 1,000 pounds, Value = $1,000)

	Albacore		*Yellowfin*		*Skipjack*		*Other*		*Total*	
By quarter	*Quantity*	*Value*	*Quantity*	*Value*	*Quantity*	*Value*	*Quantity*	*Value*	*Quantity*	*Value*
1986:										
1st	29	15	68,908	23,259	35,216	10,701	8	3	104,161	33,978
2nd	91	49	61,434	21,976	55,074	16,891	216	78	116,815	38,994
3rd	4,412	2,284	78,158	28,111	39,702	12,435	15,254	5,406	137,526	48,236
4th	1,645	1,003	53,616	18,857	53,321	17,234	481	173	109,063	37,267
Total	6,177	3,351	262,116	92,203	183,313	57,261	15,959	5,660	467,565	158,474
1987:										
1st	16	9	80,382	29,197	57,217	18,724	0	0	137,615	47,930
2nd	28	15	92,642	35,652	56,150	19,170	0	0	148,820	54,837
3rd	2,502	1,841	82,289	42,972	38,279	17,888	525	267	123,595	62,968
4th	1,238	966	85,177	44,575	41,507	19,893	0	60	127,922	65,494
Total	3,784	2,831	340,490	152,396	193,153	75,675	525	327	537,952	231,229
1988:										
1st	1,190	1,314	52,858	25,874	55,237	25,566	0	0	109,285	52,753
2nd	2,266	2,172	66,879	35,348	83,886	40,681	4	2	153,035	78,203
3rd	5,045	4,822	46,955	22,396	70,720	32,767	821	427	123,541	60,412
4th	3,363	3,961	55,549	27,479	88,635	39,286	23	12	147,570	70,738
Total	11,864	12,269	222,241	111,096	298,478	138,299	848	441	533,431	262,106
1989:										
1st	9	7	44,443	20,827	59,044	24,564	0	0	103,496	45,398
2nd	1,046	1,177	51,350	23,739	81,517	32,124	0	0	133,913	57,040
3rd	1,737	1,570	74,389	34,560	60,191	23,327	1,290	558	137,607	60,015
4th	1,823	1,799	77,352	37,812	37,563	14,991	266	119	117,004	54,721
Total	4,615	4,553	247,534	116,938	238,315	95,006	1,556	677	492,020	217,174

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 2-18

Processors imported purchases of raw tuna by species, by quarters, 1986-89, (Quantity = 1,000 pounds, Value = $1,000)

	Albacore		*Yellowfin*		*Skipjack*		*Other*		*Total*	
By quarter	*Quantity*	*Value*	*Quantity*	*Value*	*Quantity*	*Value*	*Quantity*	*Value*	*Quantity*	*Value*
1986:										
1st	49,703	40,016	43,646	15,853	50,990	15,440	2,677	645	147,016	71,953
2nd	70,138	54,140	40,999	15,111	42,047	12,743	4,040	1,522	157,224	83,516
3rd	63,373	48,565	29,774	10,439	44,258	13,008	2,348	932	139,753	72,943
4th	44,770	31,798	35,731	13,294	52,147	16,956	9,450	3,374	142,098	65,421
Total	227,984	174,518	150,150	54,697	189,442	58,147	18,515	6,472	586,091	293,834
1987:										
1st	46,848	33,740	14,545	5,303	38,572	12,250	6,805	2,557	106,770	53,850
2nd	40,428	31,206	38,952	15,632	29,993	10,195	3,328	1,353	112,701	58,386
3rd	56,889	53,417	61,839	35,778	59,978	25,554	3,878	1,987	182,584	116,736
4th	57,624	60,967	20,509	10,899	48,233	23,648	4,704	2,717	131,070	98,232
Total	201,789	179,331	135,845	67,612	176,776	71,648	18,715	8,614	533,125	327,204
1988:										
1st	46,298	47,264	27,124	14,596	47,836	22,270	3,080	1,588	124,338	85,718
2nd	47,525	51,704	20,917	10,750	31,137	14,776	2,106	1,119	101,685	78,349
3rd	52,255	58,876	21,120	11,524	69,705	34,265	2,446	1,379	145,526	106,044
4th	52,662	62,217	18,656	8,301	38,963	16,758	2,957	1,461	113,238	88,738
Total	198,740	220,061	87,817	45,171	187,641	88,069	10,589	5,547	484,787	358,847
1989:										
1st	56,734	66,408	38,666	18,026	44,154	16,806	1,495	677	141,049	101,917
2nd	55,928	63,993	33,323	15,881	78,239	30,416	5,521	2,576	173,011	112,866
3rd	37,580	40,172	35,700	16,579	43,908	16,329	2,274	881	119,462	73,962
4th	43,784	48,639	38,519	19,253	49,959	19,730	2,792	1,662	135,054	89,283
Total	194,026	219,212	146,208	69,740	216,260	83,281	12,082	5,796	568,576	378,028

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

then declined to 42 percent in 1988, but increased to 50 percent in 1989. Purchases of skipjack as a share of total domestic purchases increased from 36 percent in 1987 to 56 percent in 1988, then fell to 48 percent in 1989.

During 1986–89, approximately 97 percent (by quantity) of processors' purchases of imported raw tuna consisted of albacore, skipjack, and yellowfin. Purchases of imported albacore declined during the period, accounting for between 34 and 41 percent of imported tuna purchases. Skipjack purchases increased as a share of total purchases from 32 percent in 1986 to 38 percent in 1989, and yellowfin purchases declined from 26 percent in 1986 to 18 percent in 1988 then increased to 26 percent in 1989.

The raw tuna purchased by U.S. processors is caught in several ocean areas of the world, including the Pacific, the Atlantic, and the Indian Ocean. The following tabulation shows the share of domestic and imported tuna cannery receipts of U.S. processors, by ocean of origin, during 1985–89(data from *Statistics and Market News*, Southwest Region, NMFS, in percent):

Ocean of origin	*1985*	*1986*	*1987*	*1988*	*1989*
Domestic-caught raw tuna:					
Eastern Atlantic	0	0	0	0	0
Western Atlantic	3	1	¹	¹	0
Total Atlantic	3	1	¹	¹	0
Eastern Pacific	45	44	44	50	41
Western Pacific	52	55	56	50	59
Total Pacific	97	99	100	100	100
Indian	0	0	0	0	0
Total Domestic	100	100	100	100	100
Imported raw tuna:					
Eastern Atlantic	18	21	21	21	20
Western Atlantic	22	19	11	6	6
Total Atlantic	41	40	32	27	26
Eastern Pacific	18	21	23	13	26
Western Pacific	29	23	27	38	27
Total Pacific	47	44	50	51	53
Indian	12	16	19	22	20
Total Imported	100	100	100	100	100

¹ Less than 0.5 percent.

During 1985–89, U.S. processors' domestic receipts of frozen tuna primarily originated from the Pacific, with the share of tuna from the eastern Pacific generally declining while that from the western Pacific increasing. U.S. processors' receipts of imported frozen tuna originated from the Pacific, Atlantic, and the Indian Ocean. The share of imported raw tuna receipts originating from the Atlantic Ocean declined from 41 percent in 1985 to 26 percent in 1989, with the bulk of the decline occurring in the western Atlantic. The share of imported raw tuna receipts supplied from the Pacific area during 1985–89, generally increased accounting for 53 percent of the receipts in 1989. The share of cannery receipts from the Indian Ocean increased steadily from 12 percent in 1985 to 22 percent in 1988 before declining to 20 percent in 1989.

Loins

A relatively recent development in the canned tuna industry is the use of precooked tuna loins as a raw material. Tuna firms have been experimenting with the technology to produce and utilize frozen loins for the past decade. However, firms have not utilized loins on a commercial scale until quite recently, as increasing competition in the U.S. market stimulated U.S. processors to decrease production costs.

The use of loins as a raw material provides processors with distinct advantages compared with whole tuna. These advantages are primarily cost-related. First, labor costs are significantly reduced, as at least 60 percent of total labor costs in a traditional tuna cannery is employed in producing tuna loins.[37] Second, and perhaps more important, freight costs are substantially reduced by shipping frozen loins. Depending on the species and size of fish, the loin represents less than half the weight of the whole fish; the waste products are not transported with loins. Third, by using loins, processors can streamline their production process. Several U.S. processors stated that using loins enables them to reduce production costs in the range of $1.50–2.00 per case of canned tuna.[38]

The primary disadvantage of using frozen loins is the effect that freezing and thawing have on quality. This concerns both yields, which affect costs, and final product quality, which affects demand. U.S. producers who are using loins claim the quality differences between using loins and frozen tuna are minor because of the development of technology.

It is believed that most, if not all, U.S. canned tuna producers are using loins to some extent. At one extreme, Bumble Bee has opened a tuna cannery in California that exclusively uses frozen loins as a raw material. Another processor is reported to be opening a similar facility on the U.S. east coast.

U.S. processors are importing loins from a variety of sources. The main sources are Thailand and Latin America. Thai loins generally are utilized in plants on the U.S. west coast, while Latin American loins are utilized in plants on Puerto Rico. Additional data on U.S. imports of loins are provided in the section on U.S. imports further in the report.

[37] Commission staff interviews with officials of United States, Thai, and Indonesian canned tuna producers.
[38] Commission staff interviews with officials of U.S. canned tuna firms.

Changes In Industry Structure

For several decades prior to the 1980s, southern California was the principal processing center for the U.S. tuna industry. U.S. tuna harvesters historically were based in California to be accessible to the eastern tropical Pacific Ocean, a major tuna fishery; the processors naturally developed near their raw tuna supplies. During the 1950s, U.S. tuna companies began to shift some of their production facilities to offshore sites in Puerto Rico and American Samoa. During 1980–85, most U.S. tuna processors closed their continental U.S. operations, with only one processing plant still operating in California by 1985 (table 2-19).[39]

The major recent development in the U.S. tuna processing sector was the acquisition by Asian buyers of two of the largest U.S. brands of canned tuna, namely Bumble Bee and Van Camp. In 1988–89, P.T. Management Trust of Indonesia, purchased Van Camp and its "Chicken of the Sea" canned tuna brand from Ralston Purina. In September of 1989, Unicord of Thailand purchased Bumble Bee. As a result of these acquisitions, Asian countries now control over 50 percent of the U.S. tuna market.

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.

Labor costs

Although labor is a relatively small item in the overall cost of producing a can of tuna,[40] 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. territories. 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.[41] 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.[42] 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.[43] 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.

[39] Bumble Bee opened a plant in February 1990 that processes tuna loins.

[40] See the discussion on cost of production in tuna processing later in the report.

[41] 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.

[42] 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.

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

Table 2-19
U.S. tuna canneries, by plant locations, 1980 and 1985-90

Plant locations	*1980*	*1985*	*1986*	*1987*	*1988*	*1989*	*1990*
Continental United States	12	1	1	1	1	1	[1]2
Puerto Rico	5	5	5	5	5	5	3
American Samoa	2	2	2	2	2	2	2
Hawaii	1	0	0	0	0	0	0
Total	20	8	8	8	8	8	7

[1] Bumble Bee opened a plant in February 1990 that processes tuna loins.

Source: 1980, 1985-89 from National Marine Fisheries Service; 1990 data compiled from data submitted to the U.S. International Trade Commission.

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.

Financial Experience of U.S. Tuna Processors

This section of the report provides information on the financial experience of U.S. tuna processors during calendar years 1979–89. The information was obtained principally through questionnaires sent to the firms, with additional information from staff discussions with company officials. Six U.S. processors accounted for virtually all U.S. production of canned tuna during 1979–89. All six producers provided data covering (1) overall operations of their establishments in which canned tuna is produced, (2) financial data on operations relating to tuna for human consumption, and (3) financial data on operations relating to tuna-based pet food.

As indicated by a comparison of tables 2–20 through 2–22, canned tuna for human consumption and tuna-based pet food accounted for more than 99 percent of sales revenue of the establishments in which tuna was produced from 1986 to 1989. The remaining revenues are relatively insignificant and came from sales of fishmeal, which is derived from tuna scrap.

We note that five of the six firms operate on a fiscal year basis other than a calendar year, and only two firms have similar fiscal years. It was not possible to obtain data on the basis of a common accounting period, nor was it possible for the staff to consolidate data obtained on the basis of any uniform period. The discussion will generally be limited to the most current period for which data was collected, 1986 to 1989.

Overall Establishment Operations

Aggregate financial data for the six firms are presented in table 2–20. Pretax income rose sharply from about $63.0 million in 1985 to $111.8 million in 1986, capping four years of steady increases. Thereafter, such income decreased steadily, including a precipitous decline from $95.0 million in 1988 to $21.7 million in 1989. Moreover, even though overall net income was positive in 1989, five of the six firms had net losses (data not shown in table 2–20), as opposed to one or two during the previous three years. The three major components contributing to the decline are (1) the decrease in gross profits, (2) the increase in selling, general, and administrative (SG&A) expenses, and (3) the increase in net interest expense.[44]

[44] Although not indicated in table 2–20, SG&A expense is the difference between gross profit and operating income, and net interest expense is the primary difference between operating income and net income.

Overall net sales rose irregularly from 1986 to 1989 by about 12.5 percent, as four of the six processors enjoyed sales increases. However, cost of goods sold increased by an even greater amount (18.4 percent) resulting in a decline in gross profits of about $28.5 million. The trend of increased costs also carried into SG&A expenses, albeit to a lesser extent, as they increased by about $9 million from $95 million to about $104 million.

The single biggest reason for the $90 million decrease in pretax income from 1986 to 1989 was the $47 million increase in net interest expense from about $3 million in 1986 to about $50 million in 1989. There are two primary reasons for this huge increase. The first is the buy-out of processors in the 1988–89 time frame, leading to an increase in debt and the associated interest. The second is that processors refinanced a substantial portion of the tuna boats in which they had a controlling financial interest, paying off outstanding mortgages and financing the boats directly. In such a financial arrangement, interest income can only be accrued by the processor to the extent it is actually received. Discussions indicated that the boat owners were paying much less interest than their mortgages would normally dictate, perhaps in order to conserve cash for repairs/capital expenditures. Whatever the reason, the processors are receiving less than the interest on the financing incurred to refinance the vessels.

Income From the Production of Canned Tuna for Human Consumption

Overall financial data for the six firms on this segment of their operations are presented in table 2–21. This segment accounts for almost all of establishment net sales (between 94.6 and 96.5 percent), operating income, and pretax income. Sales increased fairly steadily from 1986 to 1989, by about $158 million (14.7 percent); however, cost of goods sold (see table 2–23 for the detailed components) increased even more, by over $175 million (20 percent).

The single largest item of cost of goods sold, frozen tuna, accounted for $149 million of the increase. This large increase was primarily due to the large increase in the purchase price of tuna. Other raw materials (consisting primarily of cans, labels, and boxes) also had a large ($39 million) increase. On the other hand, direct labor and other factory costs combined decreased by about $13 million, the result of plant modernization and closings.

Not surprisingly, virtually all of the depreciation reported by the processors was associated with this segment of their operations. Depreciation expense remained fairly steady from 1986 to 1987 before increasing by about 23 percent in 1988 and then another 49 percent in 1989. This trend mirrors the overall level of capital expenditures by the firms, which from 1986 to 1989 was

Table 2-20

Financial experience of U.S. tuna processors on the overall operations of their establishments within which canned tuna is produced, fiscal years 1979-89

Item	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
	Value (1,000 dollars)										
Net sales	1,027,697	1,115,691	1,307,480	1,202,093	1,158,003	1,189,011	1,163,438	1,132,708	1,222,527	1,305,394	1,273,701
Cost of goods sold	852,533	917,861	1,112,889	1,071,367	990,434	991,730	962,493	923,195	1,015,124	1,087,611	1,092,706
Gross profit (loss)	175,164	197,830	194,591	130,726	167,569	197,281	200,945	209,513	207,403	217,783	180,995
Operating income (loss)	73,940	80,783	63,796	2,319	32,293	74,331	81,769	114,592	111,586	110,866	76,963
Net income (loss) before income taxes	54,706	61,852	28,226	(174,316)	(6,819)	1,521	62,901	111,755	100,166	95,035	21,706
Depreciation and amortization included above	16,561	16,583	18,608	17,992	18,107	17,456	15,588	15,520	15,415	19,026	28,537
	Share of net sales in percent										
Cost of goods sold	83.0	82.3	85.1	89.1	85.5	83.4	82.7	81.5	83.0	83.3	85.8
Gross profit (loss)	17.0	17.7	14.9	10.9	14.5	16.6	17.3	18.5	17.0	16.7	14.2
Net income (loss) before income taxes	5.3	5.5	2.2	(14.5)	(0.6)	0.1	5.4	9.9	8.2	7.3	1.7
	Number of firms reporting—										
Operating losses	2	2	3	5	3	1	2	1	0	1	1
Data	5	5	5	6	6	6	6	6	6	6	6

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 2-21

Financial experience of U.S. tuna processors on their operations producing canned tuna for human consumption only, fiscal years 1979-89

Item	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
	Value (1,000 dollars)										
Net sales	960,687	1,037,591	1,220,005	1,111,621	1,073,153	1,056,654	1,042,946	1,071,008	1,163,765	1,250,024	1,228,685
Cost of goods sold	832,909	864,265	1,040,683	996,189	942,210	885,028	866,789	873,684	965,540	1,040,897	1,048,848
Gross profit (loss)	127,778	173,326	179,322	115,432	130,943	171,626	176,157	197,324	198,225	209,127	179,837
General, selling and administrative expenses	87,333	101,477	115,217	106,555	117,397	105,542	100,905	90,586	92,482	103,525	101,589
Operating income (loss)	40,445	71,849	64,105	8,877	13,546	66,084	75,252	106,738	105,743	105,602	78,248
Interest income/ (expense)	(15,160)	(19,266)	(35,367)	(39,732)	(24,598)	(4,932)	(5,447)	(3,580)	(6,904)	(9,572)	(50,256)
Other income/ (expense), net	(890)	1,410	(10,336)	(30,813)	(39,341)	(65,735)	(11,873)	(951)	(4,010)	(6,256)	(5,000)
Net income (loss) before income taxes	24,395	53,993	18,402	(61,668)	(50,393)	(4,583)	57,932	102,207	94,829	89,774	22,992
Depreciation and amortization included above	11,799	12,485	14,421	13,871	14,591	14,957	13,773	15,260	15,171	18,644	27,725
	Share of net sales in percent										
Cost of goods sold	86.7	83.3	85.3	89.6	87.8	83.8	83.1	81.6	83.0	83.3	85.4
Gross profit (loss)	13.3	16.7	14.7	10.4	12.2	16.2	16.9	18.4	17.0	16.7	14.6
General, selling and administrative expenses	9.1	9.8	9.4	9.6	10.9	10.0	9.7	8.5	7.9	8.3	8.3
Operating income (loss)	4.2	6.9	5.3	0.8	1.3	6.3	7.2	10.0	9.1	8.4	6.4
Net income (loss) before income taxes	2.5	5.2	1.5	(5.5)	(4.7)	(0.4)	5.6	9.5	8.1	7.2	1.9
	Number of firms reporting—										
Operating losses	2	0	2	4	2	1	2	1	0	1	1
Data	5	5	5	6	6	6	6	6	6	6	6

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 2-22
Financial experience of U.S. tuna processors on their operations producing tuna-based pet food, fiscal years 1984-89

Item	1984	1985	1986	1987	1988	1989
			Value (1,000 dollars)			
Net Sales	119,512	112,053	59,879	55,812	51,051	41,132
Cost of goods sold	92,875	86,370	47,597	46,423	42,353	39,563
Gross profit (loss)	26,637	25,683	12,282	9,389	8,698	1,569
General, selling and administrative expenses	17,256	18,196	4,335	3,335	3,392	2,443
Operating income (loss)	9,381	7,487	7,947	6,054	5,306	(874)
Interest income/(expense)	(611)	(940)	516	(103)	(137)	52
Other income/(expense), net	(1,522)	(593)	1,178	(403)	134	(53)
Net income (loss) before income taxes	7,248	5,954	9,641	5,548	5,303	(875)
Depreciation and amortization included above	742	532	260	238	382	812
			Share of net sales (in percent)			
Cost of goods sold	77.7	77.1	79.5	83.2	83.0	96.2
Gross profit (loss)	22.3	22.9	20.5	16.8	17.0	3.8
General, selling and administrative expenses	14.4	16.2	7.2	6.0	6.6	5.9
Operating income (loss)	7.8	6.7	13.3	10.8	10.4	(2.1)
Net income (loss) before income taxes	6.1	5.3	16.1	9.9	10.4	(2.1)
			Number of firms reporting			
Operating losses	0	1	1	1	0	1
Data	5	5	4	4	4	4

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

$15.8 million, $12.4 million, $26.8 million, and $31.4 million, respectively (during this period 97.5 percent of such expenditures went towards this segment of operations). Another factor contributing to the increase in depreciation expense in 1989 is the buy-out of processors. In such situations, the purchased assets are revalued to their fair market value, leading to an increase in the depreciable basis.

Interest, other, and SG&A expenses are virtually fully allocated to this segment—see the overall operations section above for a detailed discussion. As with overall operations, five of the six firms suffered net losses (data not shown in table 2-21) in 1989 as opposed to one or two the previous three years.

Income From the Production of Tuna-based Pet Food

Table 2-22 details the financial experience of processors in this segment of their operations. Such sales and income are becoming an increasingly smaller portion of overall operations, steadily decreasing from 5.3 percent of net sales in 1986 to 3.2 percent in 1989. Net sales, gross profits, operating income, and net income all steadily decreased during the period. Processors attribute this downward trend to previous cannery shut-downs and sales, and a decrease in demand for the product.

Consumers are apparently not purchasing as much fish- and meat-based pet food (which is costlier than cereal-based pet food) as they used to, especially the more expensive brands. As a result, the "red" tuna, which cannot be used for anything else (except fishmeal, which fetches an even lower price), must be sold at increasingly reduced prices just to increase marketability. This decreased selling price is the main reason the cost of goods sold increased from 77.7 percent of tuna-based pet food sales in 1984 to 96.2 percent in 1989.

Cost Structure of U.S. Tuna Processors

Table 2-23 presents data on the cost structure of U.S. tuna processors. Raw tuna is the largest cost item, accounting for about two-thirds of total costs. This share fluctuates substantially according to raw tuna prices. During the past decade, this share ranged between 56 percent and 71 percent annually. The second largest cost item category, other raw materials (comprising mainly cans, labels, and packaging material), accounted for a generally rising share of total costs during the past decade; the share of total cost accounted for by this category totaled 16 percent in 1989. Direct labor accounted for a generally declining share of production costs during 1979-89 and totaled about 8 percent of total costs in 1989. Increasing labor productivity and use of mechanization contributed to this decline.

Capital Expenditures

The following tabulation shows capital expenditures by U.S. tuna processors during 1986-89 (data submitted in response to questionnaires of

the U.S. International Trade Commission, in thousands of dollars):

Item	*1986*	*1987*	*1988*	*1989*
Machinery and equipment ...	13,098	11,467	16,420	19,841
Building or leasehold improvements	2,651	839	6,127	8,454
Land or land improvements	0	0	258	2,832
Tuna fishing vessels	39	86	3,948	252
Total	15,788	12,392	26,753	31,379

Total industry capital expenditures increased substantially during 1986–89. U.S. canned tuna producers upgraded and expanded the use of machinery and equipment and made other physical improvements in their production facilities in order to improve the production flow and increase yields.

Summary

The financial health of the U.S. tuna-processing industry is mixed. Although net sales the last two years are almost as high as they have been during any time since 1979, not all firms are sharing equally in levels of profitability. Five of the six firms had overall net losses in 1989, including two for at least the third year in a row. The 1989 gross profit level decreased sharply and cash flow[45] is down markedly from approximately $127 million in 1986 to approximately $50 million in 1989. Tuna firms have closed inefficient canneries and modernized others. Unprofitable tuna boats were disposed of or refinanced.

[45] Cash flow is defined as net income or loss before taxes plus depreciation and amortization.

Table 2-23

Canned tuna: U.S. processors' cost of goods sold on operations producing canned tuna for human consumption, by cost components, fiscal years 1979-89

Item	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
	Value (millions of dollars)										
Cost of goods sold:											
Raw tuna	460.0	481.3	603.8	544.6	491.2	421.5	366.8	531.3	591.6	690.2	680.3
Other raw materials	65.0	57.8	56.4	63.9	69.2	89.6	84.2	129.0	156.5	148.2	168.0
Direct labor	72.8	66.2	79.5	73.0	81.0	69.3	51.5	73.4	83.7	83.5	79.7
Other factory costs	115.7	92.5	112.1	124.3	136.6	113.9	156.1	139.9	133.7	118.9	120.9
Total	713.6	697.8	851.8	805.9	778.1	694.2	658.6	873.6	965.5	1,040.8	1,048.9
	(In percent)										
Cost of goods sold:											
Raw tuna	64.5	69.0	70.9	67.6	63.1	60.7	55.7	60.8	61.3	66.3	64.9
Other raw materials	9.1	8.3	6.6	7.9	8.9	12.9	12.8	14.8	16.2	14.3	16.0
Direct labor	10.2	9.5	9.3	9.1	10.4	10.0	7.8	8.4	8.7	8.0	7.6
Other factory costs	16.2	13.2	13.2	15.4	17.6	16.4	23.7	16.0	13.8	11.4	11.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commmission.

Chapter 3
The U.S. Tuna Market

Overview

The U.S. market for tuna comprises two distinct segments—one for frozen tuna and one for canned tuna. The customers of the raw 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 the great bulk of the U.S. supply of raw 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 raw tuna.[1] The United States consumes about a third of the total world supply of tuna (raw weight basis) and between a half and two thirds of the total world supply of canned tuna (standard case basis).[2]

U.S. consumption of all fish products totaled approximately 3.9 billion pounds in 1989, or about 15.9 pounds per capita.[3] 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 1979–89 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.

Canned tuna, the most commonly consumed fish product in the United States, contributed to the rise in overall fish consumption during the period under review. The tabulation at the bottom of the page shows U.S. per capita consumption of major fish items, including canned tuna, during 1986–89 (data from the U.S. Department of Commerce, National Marine Fisheries Service, in pounds).

U.S. per-capita canned tuna consumption rose to a record-high level of 3.9 pounds in 1989 after lingering at 3.5–3.6 pounds the previous 3 years.

Market Profile

Canned tuna is the most ubiquitous seafood item in the United States and is consumed in an estimated 85 percent of all U.S. households.[4] Most canned tuna is purchased at retail outlets (mainly supermarkets) and consumed in the home. It has been estimated that canned tuna alone accounts for more than half of total retail seafood purchases in the United States market[5] and that about 94 percent of total U.S. canned tuna supplies are consumed in the home.[6] 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. During 1986–89, the share of shipments accounted for by the retail sector ranged between 86 and 89 percent, with the share held by the institutional sector accounting for the remainder (table 3–1). Within these sectors, there are distinct subsectors based on the packing medium (water vs. oil), the type of meat (white vs. light), and the label type (advertised (or processors' own) 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. During 1986–89, the lightmeat sector accounted for approximately 78 to 81 percent of the U.S. canned tuna market, with the remainder accounted for by the whitemeat sector (table 3–2). 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

[1] Japan consumes a large amount of fresh and frozen tuna, with a smaller proportion of their raw tuna supply being utilized for canned tuna compared with that of the United States.

[2] Dennis M. King 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.

[3] 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.

[4] Graham Kitson and D.L. Hustis, *The Tuna Market*, ADB/FAO INFOFISH Market Study, vol. 2 (Kuala Lumpur: INFOFISH, March 1983), p. 4.

[5] King and Bateman, *The Economic Impact of Recent Changes in the U.S. Tuna Industry*, 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.

[6] 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.

Year	Canned products				Fillets and steaks	Sticks and portions	Shrimp, all preparations	Total, all fish products
	Tuna	Salmon	Other	Total				
1986	3.6	.5	1.3	5.4	3.3	1.8	2.2	14.7
1987	3.5	.4	1.2	5.1	3.5	1.7	2.4	15.7
1988	3.6	.3	0.8	4.7	3.0	1.5	2.4	15.2
1989	3.9	.3	.9	5.1	3.0	1.3	2.3	15.9

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.

Table 3-1
Canned tuna: Shipments,[1] by market segments, 1986-89

Year	Retail			Institutional	Total
	Processors' own brand	Private label	Total, retail		
	Quantity (1,000 pounds)				
1986	451,835	67,117	518,952	82,865	601,817
1987	460,197	72,276	532,473	90,156	622,629
1988	621,248	101,600	722,848	92,397	815,245
1989	720,079	99,428	819,507	101,897	921,404
	Share of total (percent)				
1986	75	11	86	14	100
1987	74	12	86	14	100
1988	76	12	88	12	100
1989	78	11	89	11	100

[1] Includes both domestically produced and imported canned tuna.

Note.—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.

tuna in oil from 74 percent in 1986 to 82 percent in 1989 (table 3-3). This share is up from 45 percent in 1979. 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 the west coast market has preferred lightmeat tuna.

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 1986-89, the share of the advertised-brand retail market sector held by U.S.-produced canned tuna ranged between 85 and 89 percent, with the balance held by imports (table 3-4).[7] The share of the institutional-market sector held by imports during the period ranged between 68 and 76 percent, and the imports' share of the private-label retail market segment rose from 20 percent during 1986-88 to 24 percent in 1989, with corresponding declines in shares of these market sectors held by U.S. supplies.

Supply and Demand Factors

Many factors affect the supply of and the demand for raw 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 raw 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 affect both the U.S. and world tuna catches include the condition of world tuna stocks, fishing effort, and exogenous forces, such as weather. The condition of world tuna stocks is subject to biological and environmental factors that are largely outside the realm of market forces, such as reproductive cycles, water and air temperature cycles, and water quality. Fishing effort is affected, to a degree, by market forces, both for raw and canned tuna, the primary force being price. Also, the availability of imported raw tuna to the U.S. market is affected by conditions in competing world raw-tuna markets.

The demand for raw tuna in the U.S. market is determined mainly by the raw material requirements of U.S. canned tuna producers; demand is determined to a lesser extent by the retail and restaurant trade. Processors' raw material requirements are directly affected by conditions in the U.S. market for canned tuna. The nature of the demand for raw tuna by U.S. canned tuna producers varies somewhat by source and by cannery location. Historically, U.S. producers of canned tuna relied on a relatively steady supply of raw tuna from U.S. tuna vessels and purchased virtually all of their output.[8] Imported raw tuna generally was used to supplement U.S.-produced raw tuna supplies, although the share of total raw tuna utilization by U.S. canned tuna producers accounted for by imports frequently exceeded the share held by U.S.-produced raw tuna. Now, U.S. tuna processors face increasing competition for raw tuna supplies as tuna canning industries develop and expand worldwide and as the U.S. tuna harvesting capacity continues to decline.

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

[7] A portion of this share was accounted for by imports that are distributed by U.S. processors under their advertised brand labels.

[8] With the development of tuna fishing grounds in the Western Pacific area and the growth of the Thai tuna canning industry, much of the catch by U.S. tuna seiners is now exported.

Table 3-2

Canned tuna: U.S. shipments of whitemeat and lightmeat tuna, and share of shipments, by source, 1986-89

Year	Whitemeat			Lightmeat			Total		
	Domestic	Import	Total	Domestic	Import	Total	Whitemeat	Lightmeat	Total
	Quantity (1,000 pounds)								
1986	156,195	11,622	167,817	477,906	113,861	591,767	167,817	591,767	759,584
1987	138,333	10,628	148,961	518,700	105,944	624,644	148,961	624,644	773,605
1988	138,762	17,394	156,156	501,735	128,681	630,416	156,156	630,416	786,572
1989	143,657	27,593	171,249	530,868	173,043	703,911	171,249	703,911	875,160
	Share of total (percent)								
1986	93	7	100	81	19	100	22	78	100
1987	93	7	100	83	17	100	19	81	100
1988	89	11	100	80	20	100	20	80	100
1989	84	16	100	75	25	100	20	80	100

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 3-3
Canned tuna: Production, beginning inventories, imports for consumption, ending inventories, and apparent consumption, by types of pack, 1986-89

Item	1986	1987	1988	1989
	Quantity (1,000 pounds)			
Production:				
Tuna in water	427,577	462,794	459,128	504,212
Tuna in oil	206,505	194,220	181,350	170,313
Total	634,082	657,014	640,478	674,525
Beginning inventories:				
Tuna in water	114,886	119,730	118,775	164,756
Tuna in oil	69,762	48,204	44,421	45,200
Total	184,648	167,934	163,196	210,010
Imports:				
Tuna in water	236,322	211,358	244,188	347,791
Tuna in oil	611	328	317	423
Total	236,933	211,686	244,505	348,214
Ending inventories:				
Tuna in water	119,730	118,775	164,756	202,137
Tuna in oil	48,204	44,421	45,260	41,828
Total	167,934	163,196	210,016	243,965
Apparent consumption:				
Tuna in water	659,055	675,107	656,335	814,622
Tuna in oil	228,674	198,331	180,828	174,168
Total	887,729	873,438	838,163	988,790
	Share of total (percent)			
Production:				
Tuna in water	67	70	72	75
Tuna in oil	34	30	28	25
Total	100	100	100	100
Beginning inventories:				
Tuna in water	62	72	73	78
Tuna in oil	38	28	27	22
Total	100	100	100	100
Imports:				
Tuna in water	100	100	100	100
Tuna in oil	(1)	(1)	(1)	(1)
Total	100	100	100	100
Ending inventories:				
Tuna in water	71	73	78	83
Tuna in oil	29	27	22	17
Total	100	100	100	100
Apparent consumption:				
Tuna in water	74	77	78	82
Tuna in oil	26	23	22	18
Total	100	100	100	100

[1] Less than 0.05 percent.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 3-4
Canned tuna: Market shares of shipments, by market segments and sources, 1986-89

Year	Retail						Institutional		Total	
	Processors' own brand		Private label		Total, retail					
	Domestic	Import	Domestic	Import	Domestic	Import	Domestic	Import	Domestic	Import
1986	88	12	80	20	87	13	32	68	80	20
1987	88	12	80	20	87	13	31	69	79	21
1988	89	11	81	19	88	12	24	76	81	19
1989	85	15	76	24	84	16	30	70	78	22

Note.—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.

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 population, prices of canned tuna and of competing food items, consumer preferences, and disposable income levels. The U.S. population was approximately 249 million persons in 1989, up about 9 percent from 228 million persons in 1980.[9] Most of the population is concentrated in major metropolitan areas.[10]

The demand for canned tuna is specifically 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. The following tabulation shows retail price indexes for fresh and frozen chicken parts and for ground beef during 1986–89 (data from the Bureau of Labor Statistics, 1986=100):

Product	*1986*	*1987*	*1988*	*1989*
Fresh and frozen chicken parts	100.0	99.8	107.7	118.4
Ground beef	100.0	106.5	110.6	108.9

The data in the tabulation above reveal that retail prices of chicken and beef products that are believed to compete most closely with canned tuna rose considerably during 1986–89. In particular, retail prices of fresh and frozen chicken parts escalated in 1989. Comparable data are not available on retail prices of canned tuna. However, as discussed later in this report, such prices declined in 1989.

Consumer preferences are another factor that determines the demand for canned tuna. U.S. consumers have become increasingly health conscious in recent years. This has increased the preference and demand for canned tuna packed in water at the expense of tuna packed in oil.

The level of consumers' disposable income influences the demand for canned tuna, inasmuch as disposable income combined with the population determines the potential 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 1986–89 (compiled from official statistics of the U.S. Department of Commerce):

Year	*Aggregate*		*Per capita*[1]	
	Nominal	*Real*[2]	*Nominal*	*Real*[2]
	(billions of dollars)		*(dollars)*	
1986	3,013	2,635	12,469	10,905
1987	3,206	2,677	13,140	10,970
1988	3,478	2,793	14,116	11,337
1989	3,780	2,907	15,191	11,681

[1] In terms of noninstitutional population, persons 16 years of age and over.
[2] Real in 1982 dollars.

Both aggregate and per capita disposable income showed significant growth during the period.

Apparent Consumption

Raw Tuna

Table 3-5 shows U.S. apparent consumption of raw (fresh and frozen) tuna.[11] Such consumption increased irregularly during 1986–89 and totaled 1.0 billion pounds the latter year. Imports accounted for between 55–61 percent of such consumption during 1986–89. Since 1983, imports of raw tuna have increased their share of U.S. raw tuna consumption, mainly as the result of the contraction of the U.S. tuna fleet and the resulting declines in U.S. landings. Also, beginning in 1984, exports of raw tuna by the U.S. tuna fleet increased substantially and further decreased the supply of U.S.-caught tuna available to U.S. processing plants, as more U.S. vessels shifted to the western Pacific area.

Consumption patterns of raw 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 raw

[9] *Statistical Abstract of the United States*, 1990, U.S. Department of Commerce.
[10] Tuna industry members have indicated that major metropolitan areas are the primary markets for canned tuna.

[11] The discussion presented here on raw 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 raw 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.

Table 3-5
Raw tuna: U.S. cannery receipts, imports, exports, and apparent consumption, 1986-89

Year	U.S. cannery receipts: Domestic[1]	Imports[2]	Exports	Apparent consumption	Ratio of imports to consumption	Ratio of exports to production[3]
		1,000 pounds			Percent	
1986	454,386	592,916	67,492	979,810	61	13
1987	507,872	557,530	59,926	1,005,482	55	11
1988	486,638	534,302	79,908	941,032	57	14
1989	451,984	618,152	53,692	1,016,444	61	11
		Short tons				
1986	227,193	296,458	33,746	489,905		
1987	253,936	278,768	29,963	502,741		
1988	243,319	267,151	39,954	470,516		
1989	225,992	903,076	26,846	508,222		

[1] Includes receipts in Puerto Rico, American Samoa, and California.
[2] Includes direct unloadings by foreign flag vessels at U.S. processing facilites in American Samoa.
[3] Production is the sum of U.S. cannery receipts from domestic sources and exports.

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.

Source: Compiled from official statistics of the U.S. Department of Commerce, National Marine Fisheries Service.

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 raw albacore tuna is much less than that of raw tropical tuna on an absolute basis, as shown in the following tabulation (from the U.S. Department of Commerce):

Share (percent) of total U.S. apparent consumption				
Species	1986	1987	1988	1989
Tropical	76	79	77	80
Albacore	24	21	23	20
Total	100	100	100	100

Table 3-6 shows U.S. apparent consumption of raw tropical tuna. Such consumption followed the same pattern as that for overall consumption, as the bulk of total U.S. raw tuna consumption is accounted for by tropical tuna. Also, the share of consumption of raw tropical tuna accounted for by imports is significantly lower than that of the overall consumption, and ranged between 44 and 52 percent during 1986-89. This is due to the fact that the bulk of domestic raw tuna supplies available to U.S. processors is provided by purse seiners, which concentrate on catching tropical tuna.

[1] —*Continued*
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. The Commission's staff believes that the data presented here represent the most accurate information as to the actual consumption of raw tuna by U.S. tuna processors.

Table 3-7 shows U.S. apparent consumption of raw albacore tuna. The consumption pattern for albacore is different than that for 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 raw albacore tuna; the share of such consumption provided by imports ranged between 93 and 98 percent during 1986-89.

The preceding discussion pertained to the consumption of raw 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 and major metropolitan areas, with consumption occurring mainly in restaurants. The increasing popularity of sushi restaurants and of grilled fish steaks (of which tuna is a popular item) has increased the demand for fresh tuna.

Canned Tuna

Table 3-8 shows U.S. apparent consumption of canned tuna. Such consumption declined in quantity during 1986-88, from 888 million pounds in the former year to 828 million pounds in the latter year, before rising to 989 million pounds in 1989. The rise in 1989 consumption, which was 19 percent greater than the previous year's level, was supplied by substantial increases in both production and imports. The estimated value of consumption rose each year during

Table 3-6
Raw tropical tuna: U.S. cannery receipts, imports, exports, and apparent consumption, 1986-89

Year	U.S. cannery receipts: Domestic[1]	Imports[2]	Exports	Apparent consumption	Ratio of imports to consumption	Ratio of exports to production[3]
		1,000 pounds			Percent	
1986	447,332	368,332	67,492	748,172	49	13
1987	502,020	354,814	58,244	798,590	44	10
1988	471,318	336,838	79,908	728,248	46	14
1989	442,222	425,188	53,692	813,718	52	11
		Short tons				
1986	223,666	184,166	33,746	374,086		
1987	251,010	177,407	29,122	399,295		
1988	235,659	168,419	39,954	364,124		
1989	221,111	212,594	26,846	406,859		

[1] Includes receipts in Puerto Rico, American Samoa, and California.
[2] Includes direct unloadings by foreign flag vessels at U.S. processing facilites in American Samoa.
[3] Production is the sum of U.S. cannery receipts from domestic sources and exports.

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.

Source: Compiled from official statistics of the U.S. Department of Commerce, National Marine Fisheries Service.

Table 3-7
Raw albacore tuna: U.S. cannery receipts, imports, exports, and apparent consumption, 1986-89

Year	U.S. cannery receipts: Domestic[1]	Imports[2]	Exports	Apparent consumption	Ratio of imports to consumption	Ratio of exports to production[3]
		1,000 pounds			Percent	
1986	7,054	224,584	0	231,638	97	0
1987	5,672	202,722	1,682	206,712	98	23
1988	15,320	197,464	0	212,784	93	0
1989	9,762	192,964	0	202,726	95	0
		Short tons				
1986	3,527	112,292	0	115,819		
1987	2,836	101,361	841	103,356		
1988	7,660	98,732	0	106,392		
1989	4,881	96,482	0	101,363		

[1] Includes receipts in Puerto Rico, American Samoa, and California.
[2] Includes direct unloadings by foreign flag vessels at U.S. processing facilites in American Samoa.
[3] Production is the sum of U.S. cannery receipts from domestic sources and exports.

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.

Source: Compiled from official statistics of the U.S. Department of Commerce, National Marine Fisheries Service.

1986-89, from approximately $1.2 billion in 1986 to $1.5 billion in 1989. The rise in value resulted from steadily increasing unit values during 1986-88 which offset a decline in the quantity consumed and from a substantial rise in the quantity consumed in 1989 despite a decline in the unit value that year. The share of consumption supplied by imports generally rose from slightly more than a quarter in 1986 to slightly more than a third in 1989; the 35 percent import market share in 1989 was a record.

The U.S. market for canned tuna is showing signs of weakness in 1990. According to retail market data, retail sales volume in the U.S. market is down 2.6 percent in quantity and 5.1 percent in value for the 52-week period between September 1989 and September 1990.[12] In addition, U.S. imports of canned tuna during January-August 1990 were 22 percent lower in quantity than that during the same period during the previous year.[13] Another indication of the slack U.S. market is a downward trend in retail prices in 1990.

[12] Data from SAMI issues no. 302-314, the Arbitron Co. Data provided by telephone from a U.S. tuna processor.
[13] See discussion on imports further in this chapter.

Table 3-8

Canned tuna: U.S. production, beginning inventories, imports for consumption, exports of domestic merchandise, ending inventories, and apparent consumption, 1986-89

Year	Production[1]	Beginning[2] inventories	Imports	Exports	Ending[2] inventories	Apparent consumption	Ratio (percent) of imports to consumption	Ratio (percent) of ending inventories to consumption
				Quantity (1,000 pounds)				
1986	634,086	184,648	236,933	(3)	167,944	887,723	27	19
1987	657,025	167,944	211,685	(3)	163,201	873,453	24	19
1988	640,482	163,201	244,504	(3)	210,011	828,176	29	25
1989	674,515	210,011	348,212	(3)	243,960	988,778	35	25
				Value (1,000 dollars)				
1986	970,152	282,511	229,047	(3)	256,954	1,224,756	19	21
1987	1,097,232	280,466	206,920	(3)	272,546	1,312,072	16	21
1988	1,184,892	301,922	298,666	(3)	388,520	1,396,960	21	28
1989	1,160,166	361,219	375,911	(3)	419,611	1,477,685	25	28
				Unit value (dollars per pound)				
1986	1.53	1.53	.97	(4)	1.53	1.38	(4)	(4)
1987	1.67	1.67	.98	(4)	1.67	1.50	(4)	(4)
1988	1.85	1.85	1.22	(4)	1.85	1.67	(4)	(4)
1989	1.72	1.72	1.08	(4)	1.72	1.49	(4)	(4)

[1] Includes production by U.S. firms and subsidiaries in American Samoa and Puerto Rico.
[2] Includes importers' inventories.
[3] Negligible.
[4] Not meaningful.

Note.— Data may differ slightly from those in table 3-3 due to rounding.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and from official statistics of the U.S. Department of Commerce, National Marine Fisheries Service.

One canned tuna marketing official stated that a major reason for the downturn in the U.S. market in 1990 is the consistent use of promotions and discounting in the trade.[14] This practice has resulted in consistently low prices, both at the wholesale and retail levels. Consumers at both levels feel that the prices will remain at discounted levels and, as a result, are not purchasing as much product in order to take advantage of discounts. In effect, the discounted prices have become the norm.

Customs Treatment

Tariff Rates

The current U.S. rates of duty applicable to imports of raw and canned tuna are shown in appendix D. 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.[15] However, for canned tuna, shipments from American Samoa may enter duty free because raw 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 (19 U.S.C. 1303) were being provided, directly or indirectly, to firms in the Philippines engaged in the manufacture, production, or export of canned tuna. As a result, the ITA, on March 31 1983, instituted a countervailing duty investigation (48 FR 15505).[16] 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. Accordingly, 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. On March 25, 1988, after conducting an administrative review, the ITA announced that the countervailing duty was revoked, effective January 1, 1986. A copy of the Federal Register notice announcing the ITA termination is in appendix E.

[14] Telephone conversation with the Vice President for marketing of a major U.S. canned tuna producer and distributor, Nov. 5, 1990.

[15] See headnote 3(a) of the *Tariff Schedules of the United States*, Annotated, 1986, app. E.

[16] 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.

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. In general, foreign fishing vessels are not permitted to land their catch of fish, including 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 HTS heading 9815 (see app. D). The term "American fishery" is defined in U.S. note 1 of subchapter XV of the HTS 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 HTS heading 9815. A portion of the catch is transshipped from locations outside the United States to U.S processing facilities and, as such, is classified under HTS heading 9815. However, inasmuch as U.S. imports of fresh and raw tuna currently are duty free under HTS subheadings 0302.31–0302.39 and 0303.41–0303.49, the duty-free treatment of imports of tuna under HTS heading 9815 is not of particular concern. However, should duties or quotas be imposed at some future time on imports of tuna under HTS subheadings 0302.31–0302.39 and 0303.41–0303.49, the question of the requirements for free entry of tuna under HTS heading 9815 would become important. Whether or not tuna could be entered under HTS heading 9815 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.

Quotas

There are no quotas on U.S. imports of raw 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.[17] 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

[17] Presidential Proclamation 3128, Mar. 16, 1956.

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.[18] 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 the then current 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). 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 1986-89 (data from the U.S. Customs Service, in thousands of pounds; tabulation from *Fisheries of the United States, 1989,* National Marine Fisheries Service):

Year	Quota	Imports under quota	Imports over quota
1986	81,092	81,092	153,057
1987	91,539	91,539	123,364
1988	85,185	85,185	193,784
1989	76,734	76,734	234,323

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.

Industry and government sources have related that the quota has been filled quite early in recent years, sometimes as early as January. Some industry members have expressed a desire to eliminate the tariff-rate quota and replace it with an ad valorem tariff in order to eliminate adverse marketing practices and administrative burden.

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 of 1972 (MMPA) (16 U.S.C. 1361 et seq.). In the past, embargoes on imports of tuna products generally have been 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). More recently, however, the focus of embargoes of tuna products has shifted to the authority of 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.[19] Appendix F provides more detailed information on embargoes on tuna products.

Health and Sanitary Regulations and Labeling Requirements

United States imports of canned tuna are subject to the same health and sanitary regulations that apply to domestically produced canned tuna. The regulations 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 issued by the U.S. Customs Service (19 CFR part 134), 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 and 5 percent.[20]

[18] For the purposes of this investigation, however, production facilities in American Samoa are included as part of the domestic industry. There is ample precedent to do so. The U.S. Trade Representative directed the Commission to do so in the prior section 332 investigation on the tuna industry (332-224). 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, and, the National Marine Fisheries Service includes American Samoa in U.S. production statistics.

[19] See 16 U.S.C. 1371.

[20] H.R. Throm, "Quality Aspects of Canned Tuna Imported to the United States," *Proceedings of Infofish Tuna Trade Conference* (Bangkok: INFOFISH, Feb. 25-27, 1986), pp. 114-118.

Distribution

Raw tuna

The distribution of raw 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 raw tuna. Distribution patterns for raw tuna generally vary according to its source (domestic or foreign), market (fresh versus canned), destination (American Samoa, Puerto Rico, or California), and species (white or light). Distribution 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 raw tuna.

Raw tuna generally is marketed either through contracts with individual vessels, tuna-fishing companies, or through brokers. Most of the raw 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 raw 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 raw tuna in the event that their raw material needs decrease. In general, the proportion of raw tuna supplies procured through contracts is higher for albacore than for yellowfin and skipjack, owing to the relative scarcity of albacore. Also, larger processors tend to contract for a greater proportion of their raw tuna supplies because of their greater demand and need for a consistent and reliable source of raw material.

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, more than 200 brokers 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 broker 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.

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.

A major consideration concerning canned tuna marketing is slotting fees. Slotting fees are charged by retailers to tuna manufacturers in order to provide shelf space to carry their product. The fees generally range between $1,000–$30,000 for one account and one item, depending on the market (with New York being the highest). Once a firm loses a slot, it generally must repay the slotting fee to regain the account. A recent study by several food retailer and manufacturer associations provides information on the practice of slotting fees and likely will generate continued debate over the subject.[21]

Prices

Price Determination

Prices in the U.S. tuna market are set at each of the three levels of the market: the primary production level, at which raw tuna landed by harvesters is delivered to processors (ex-vessel prices); the middle, or wholesale level, at which processors deliver canned tuna to distributors or directly to retailers and institutions (wholesale

[21] The report, titled "Managing the Process of Introducing and Deleting Products in the Grocery and Drug Industry," was commissioned by a Joint Industry Task Force comprising the Grocery Manufacturers of America, the Food Marketing Institute, the National-American Wholesale Grocers Association, the National Food Brokers Association, and the National Association of Chain Drug Stores. Domestic tuna producers have indicated that their buyers may gain leverage by using this practice to negotiate prices between domestic and imported product.

prices); and the 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 prices.[22]

Price Levels and Trends

Exvessel prices

Average exvessel prices can be determined by using unit values. The following tabulation presents data on the average unit value of albacore, skipjack, and yellowfin delivered by U.S. purse seiners to U.S. processors during 1986–89 (data in dollars per short ton, from the National Marine Fisheries Service):

Species	*1986*	*1987*	*1988*	*1989*
Albacore	1,189	1,697	1,883	1,914
Yellowfin	903	865	1,433	1,270
Skipjack	723	853	1,095	912
Average, all species	863	1,132	1,377	1,258

The annual average unit values of all major species of tuna at the ex-vessel level increased markedly (60 percent) during 1986–88 before falling somewhat in 1989. The decline in 1989 prices resulted from a world glut of yellowfin and skipjack that year.

In addition, the Commission requested U.S. processors to submit, through questionnaires, their purchases of raw tuna from domestic and import sources on a quarterly basis. Data on the unit value of these purchases, which can be used to approximate average exvessel prices, are presented in tables 3-9 and 3-10. In general, the price movements followed the same trend as discussed above.

[22] For more detail, see Conditions of Competition in the U.S. Tuna Industry, USITC Publication 1912, October 1986, pp. 59–65.

Table 3-9
Raw tuna: Quarterly unit values of U.S. processors' purchases of domestically-caught raw tuna, by species, 1st quarter 1986–2nd quarter 1990

(Per short ton)

Year and quarter	*Albacore*	*Yellowfin*	*Skipjack*	*Other*	*Average*
1986:					
Q1	$1,034	$675	$608	$750	$652
Q2	1,077	715	613	722	668
Q3	1,035	719	626	709	701
Q4	1,219	703	646	719	683
Average	1,085	704	625	709	678
1987:					
Q1	1,125	726	654	(1)	796
Q2	1,071	770	683	(1)	737
Q3	1,472	1,044	935	1,017	1,019
Q4	1,561	1,047	959	(1)	1,024
Average	1,496	895	784	1,246	860
1988:					
Q1	2,208	979	926	(1)	965
Q2	1,917	1,057	970	1,000	1,022
Q3	1,912	954	927	1,040	978
Q4	2,356	989	886	1,043	959
Average	2,068	1,000	927	1,040	983
1989:					
Q1	1,556	937	832	(1)	877
Q2	2,250	925	788	(1)	852
Q3	1,808	929	775	865	872
Q4	1,974	978	798	895	935
Average	1,973	945	797	870	883
1990:					
Q1	2,306	968	864	1,183	990
Q2	2,177	961	780	538	963
Average	2,236	964	825	817	976

[1] No purchases reported.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 3-10
Raw tuna: Quarterly unit values of U.S. processors' purchases of imported raw tuna, by species, 1st quarter 1986-2nd quarter 1990

(Per short ton)

Year and quarter	Albacore	Yellowfin	Skipjack	Other	Average
1986:					
Q1	$1,610	$726	$606	$482	$979
Q2	1,544	737	606	753	1,062
Q3	1,533	701	588	794	1,044
Q4	1,421	744	650	714	921
Average	1,531	729	614	699	1,003
1987:					
Q1	1,440	729	635	752	1,009
Q2	1,544	803	680	813	1,036
Q3	1,878	1,157	852	1,025	1,279
Q4	2,116	1,063	981	1,155	1,499
Average	1,777	995	811	921	1,227
1988:					
Q1	2,042	1,076	931	1,031	1,379
Q2	2,176	1,028	949	1,063	1,541
Q3	2,253	1,091	983	1,128	1,457
Q4	2,363	890	860	988	1,567
Average	2,215	1,029	939	1,048	1,480
1989:					
Q1	2,341	932	761	906	1,445
Q2	2,288	953	778	933	1,305
Q3	2,138	929	744	775	1,238
Q4	2,222	1,000	790	1,190	1,322
Average	2,260	954	770	959	1,330
1990:					
Q1	2,058	839	485	1,086	1,543
Q2	2,095	537	891	1,094	1,581
Average	2,077	762	778	1,090	1,562

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Wholesale prices

The Commission requested U.S. processors and importers to submit, through questionnaries, information on their shipments, sales and prices during January-March 1986-April-June 1990, for a variety of tuna products categorized by container size, brand, packing medium, and the pack style. Data on wholesale prices are given in tables 3-11 through 3-14. On an annual basis, wholesale prices[23] followed the trend of raw tuna price movements. Such prices generally increased through 1988 and, then, generally declined in 1989. Prices of import shipments generally were lower than domestic shipments. In the extremely competitive water pack, light-meat, retail sector, import prices ranged between 11 and 24 percent lower than prices of domestic product for advertised brands, and between 1 percent higher and 13 percent lower than prices of domestic product for private labels.

According to industry officials, U.S. buyers (wholesale/retail distributors) of canned tuna generally are willing to pay a premium for domestically-produced product.[24] The reasons for this are service and risk related, such as faster delivery and better return policies offered by U.S. firms.

Retail prices

Direct price competition between domestic tuna producers and importers occurs at the wholesale level. At the retail level, such price competition is less direct. Retail prices vary substantially by the large variety of pack types and by geographic location and change frequently, making comparisons difficult.

The Commission was provided with data regarding retail prices for various tuna packs and brands during July 1988-February 1990.[25] These data are presented in figures 3-1 through 3-4. Figure 3-1 shows retail price movements for all can sizes of lightmeat tuna packed in water from various sources compared with average retail prices for all canned tuna. In general, retail lightmeat canned tuna prices in the U.S. market trended downward during the period. Lightmeat tuna retail prices were below the benchmark average price for all canned tuna during the period. Domestic advertised brand prices for lightmeat canned tuna packed in water were higher than

[23] Annual wholesale prices were approximated using the average unit values of processors' and importers' shipments.

[24] Testimony of Richard Atchison, President, Caribe Tuna, Inc., transcript of public hearing, p. 86. This point was made during numerous Commission staff interviews with tuna industry officials.

[25] Data from SAMI issues no. 285-1 through 306-4, the Arbitron Co. Data were provided by Mitsubishi Foods, Inc., with the permission of SAMI.

Table 3-11
Canned tuna: Unit values of U.S. producers' shipments, by product, 1986-89
(Per case)

Product	1986	1987	1988	1989
Water pack:				
White-meat:				
Retail:				
Advertised brand	$44.36	$48.47	$55.68	$55.12
Private label	36.15	41.85	47.35	44.92
Institutional:				
Advertised brand	39.17	42.42	52.86	49.93
Private label	40.51	44.95	51.27	52.91
Light-meat:				
Retail:				
Advertised brand	26.87	29.47	31.87	29.24
Private label	22.22	24.88	27.73	24.74
Institutional:				
Advertised brand	23.34	25.66	31.30	29.18
Private label	23.23	27.68	30.14	27.11
Oil pack:				
White-meat:				
Retail:				
Advertised brand	43.94	46.64	55.05	55.65
Private label	33.25	41.76	44.70	42.68
Institutional:				
Advertised brand	(1)	(1)	(1)	(1)
Private label	53.03	40.00	55.56	36.95
Light-meat:				
Retail:				
Advertised brand	27.02	29.64	31.78	29.02
Private label	22.94	24.15	27.67	23.84
Institutional:				
Advertised brand	30.03	31.77	33.62	29.27
Private label	33.84	37.25	42.85	41.14

[1] No shipments reported.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 3-12
Canned tuna: Unit values of U.S. importers' shipments, by product, 1986-89
(Per case)

Product	1986	1987	1988	1989
Water pack:				
White-meat:				
Retail:				
Advertised brand	$37.62	$36.42	$46.11	$50.43
Private label	34.12	34.20	41.72	41.79
Institutional:				
Advertised brand	33.97	33.98	46.85	42.45
Private label	33.55	32.09	41.68	39.56
Light-meat:				
Retail:				
Advertised brand	24.19	24.87	25.68	25.30
Private label	22.45	22.10	26.30	24.03
Institutional:				
Advertised brand	22.72	23.51	28.70	25.44
Private label	20.63	20.90	26.69	24.21
Oil pack:				
White-meat:				
Retail:				
Advertised brand	(1)	(1)	(1)	(1)
Private label	(1)	(1)	(1)	(1)
Institutional:				
Advertised brand	(1)	(1)	(1)	(1)
Private label	(1)	(1)	(1)	(1)
Light-meat:				
Retail:				
Advertised brand	(1)	(1)	(1)	(1)
Private label	(1)	(1)	(1)	(1)
Institutional:				
Advertised brand	(1)	(1)	(1)	(1)
Private label	(1)	(1)	(1)	(1)

[1] No shipments reported.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 3-13

Canned tuna: Quarterly weighted average prices for retail-size containers, by product, 1st quarter 1986-2nd quarter 1990

(Per case)

Year and quarter	Product: Private label: Water: White solid		Chunk light		Oil: Chunk light		Advertised brand: Water: White solid		Chunk light		Oil: Chunk light	
	Domestic	Import	Domestic	Import	Domestic	Import	Domestic	Import	Domestic	Import	Domestic	Import
1986:												
1	$38.50	$41.10	$23.12	$22.85	$23.71	(1)	$42.29	$44.22	$25.49	$23.83	$26.52	(1)
2	36.11	28.45	23.21	22.95	23.44	(1)	40.40	40.16	26.32	24.70	26.47	(1)
3	38.03	36.35	23.45	23.20	24.58	(1)	42.42	40.85	25.21	24.00	25.22	(1)
4	36.32	35.58	22.38	23.31	24.75	(1)	40.98	39.34	24.72	23.82	25.03	(1)
1987:												
1	36.05	34.80	23.13	22.29	23.13	(1)	42.66	39.15	24.35	23.58	24.57	(1)
2	38.50	34.99	22.85	23.30	22.93	(1)	40.88	39.26	23.22	23.06	24.68	(1)
3	39.91	36.69	24.20	23.27	24.67	(1)	44.93	40.58	29.30	26.10	27.90	(1)
4	44.46	40.19	25.71	24.62	27.56	(1)	51.93	47.95	31.76	29.72	31.91	(1)
1988:												
1	48.75	47.19	29.33	27.23	29.53	(1)	52.62	49.85	30.92	29.05	30.99	(1)
2	45.73	46.04	29.79	28.57	30.20	(1)	52.81	52.12	31.23	29.33	31.10	(1)
3	49.28	48.36	29.19	28.35	29.81	(1)	52.16	55.21	30.29	28.77	30.38	(1)
4	49.21	48.09	29.43	27.52	29.69	(1)	56.69	53.38	29.46	28.29	29.57	(1)
1989:												
1	47.53	44.44	27.61	26.10	27.36	(1)	54.66	50.32	28.40	26.98	28.46	(1)
2	47.33	41.16	26.87	25.48	26.26	(1)	49.54	43.06	27.54	25.61	27.53	(1)
3	47.09	40.19	24.19	23.05	24.87	(1)	50.57	44.83	26.74	23.91	26.70	(1)
4	44.29	38.90	25.30	22.81	25.25	(1)	50.40	45.51	26.98	24.82	26.88	(1)
1990:												
1	46.72	39.79	26.21	24.46	25.78	(1)	51.40	46.08	27.45	25.10	27.57	(1)
2	47.65	41.10	25.85	23.28	25.63	(1)	50.53	49.88	26.16	23.97	26.40	(1)

[1] No prices reported.

Note.—Prices reported are on a f.o.b. east coast basis. Insufficient data were reported on an f.o.b. west coast basis to report.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 3-14

Canned tuna: Quarterly weighted average prices for institutional-size containers, by product, 1st quarter 1986-2nd quarter 1990

(Per case)

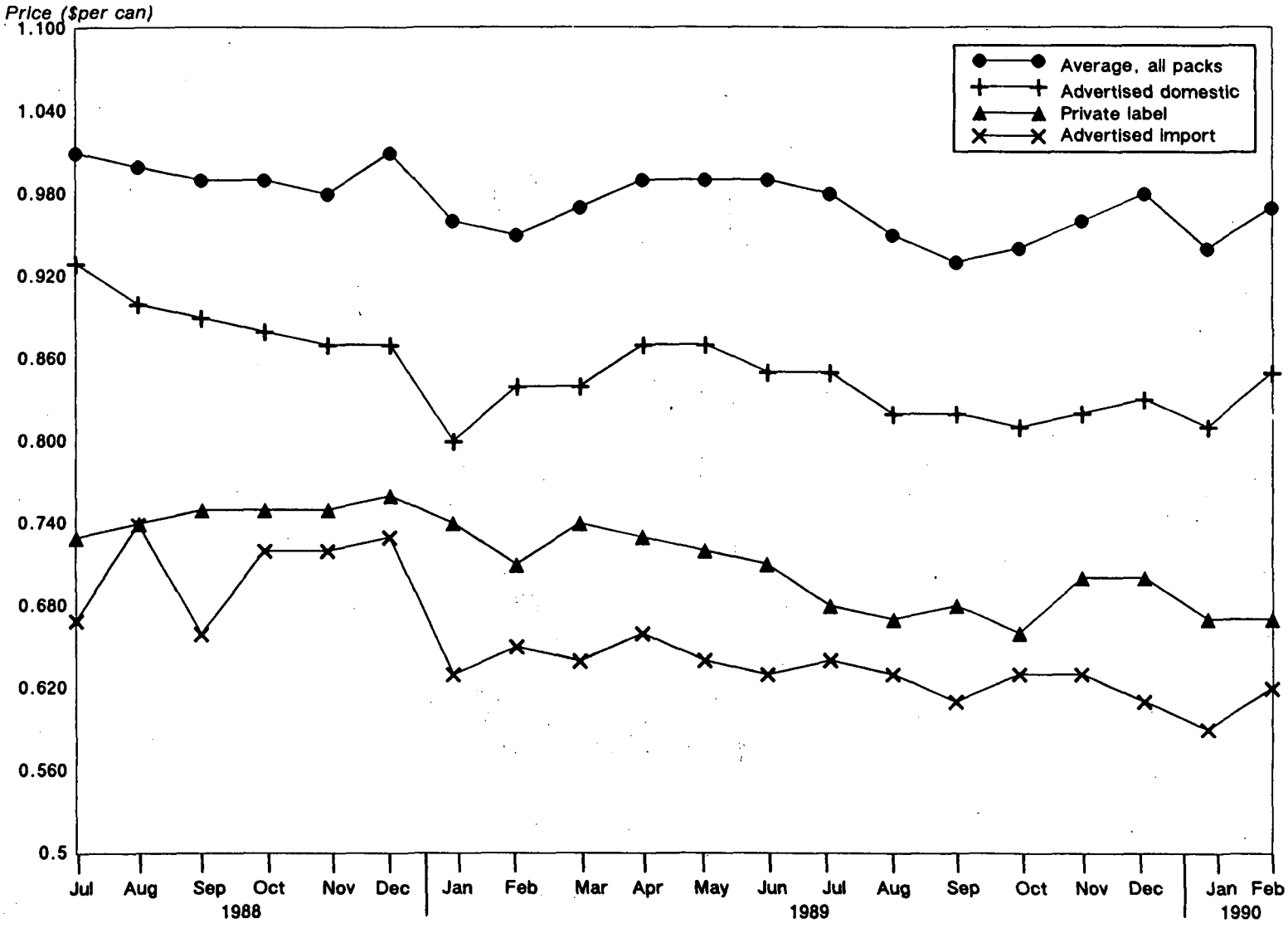
Year and quarter	Product: Private label: Water: White solid		Chunk light		Oil: Chunk light		Advertised brand: Water: White solid		Chunk light		Oil: Chunk light	
	Domestic	Import	Domestic	Import	Domestic	Import	Domestic	Import	Domestic	Import	Domestic	Import
1986:												
1	$48.06	$38.10	$29.54	$20.80	(1)	(2)	$46.66	$38.59	$28.14	$24.26	(1)	(2)
2	45.09	36.09	27.43	21.73	(1)	(2)	49.31	38.73	28.65	25.03	(1)	(2)
3	41.01	34.19	21.32		(1)	(2)	47.11	37.39	28.24	25.31	(1)	(2)
4	44.08	40.21	25.98	21.49	(1)	(2)	46.59	37.79	28.13	24.45	(1)	
1987:												
1	40.82	32.66	25.85	21.18	(1)	(2)	46.51	36.71	28.45	24.43	(1)	(2)
2	43.29	32.67	27.66	22.13	(1)	(2)	42.53	36.28	22.91	24.91	(1)	(2)
3	50.15	35.27	28.35	21.47	(1)	(2)	51.91	39.76	25.37	26.46	(1)	(2)
4	54.84	40.12	27.48	22.78	(1)	(2)	49.42	46.21	26.75	28.47	(1)	
1988:												
1	53.96	43.49	35.17	26.00	(1)	(2)	53.40	50.24	27.90	29.74	(1)	(2)
2	59.34	42.91	34.34	27.22	(1)	(2)	56.90	51.79	29.41	31.79	(1)	(2)
3	60.20	46.46	34.34	27.22	(1)	(2)	57.27	51.93	31.09	32.21	(1)	(2)
4	61.36	48.12	35.37	28.51	(1)	(2)	57.17	51.13	29.07	31.10	(1)	
1989:												
1	61.41	44.58	34.22	25.66	(1)	(2)	58.38	49.83	31.43	29.80	(1)	(2)
2	61.51	44.13	34.74	24.10	(1)	(2)	58.84	47.14	33.67	28.22	(1)	(2)
3	61.72	36.19	32.01	23.50	(1)	(2)	57.41	46.40	32.89	26.02	(1)	(2)
4	62.15	41.42	24.36	23.42	(1)	(2)	56.24	45.44	31.93	25.94	(1)	(2)
1990:												
1	55.24	40.08	29.32	23.04	(1)	(2)	57.10	44.10	30.99	26.05	(1)	(2)
2	61.98	39.28	27.61	22.19	(1)	(2)	54.77	43.73	30.71	26.06	(1)	(2)

[1] Confidential.
[2] No prices reported.

Note: Prices reported are on a f.o.b. east coast basis. Insufficient data were reported on an f.o.b. west coast basis to report.

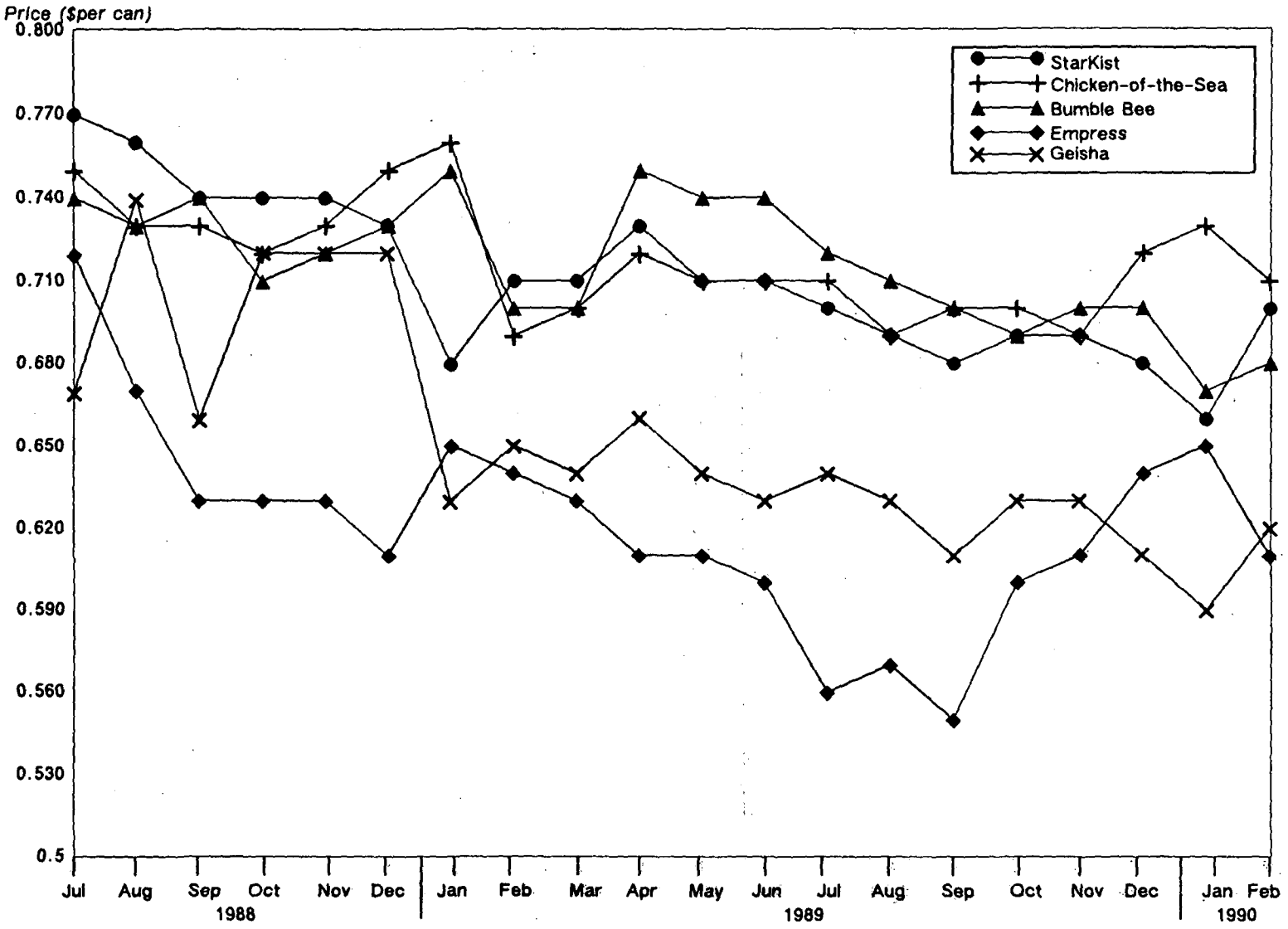
Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Figure 3-1
Canned tuna: U.S. retail prices, average, all packs vs. selected lightmeat in water packs



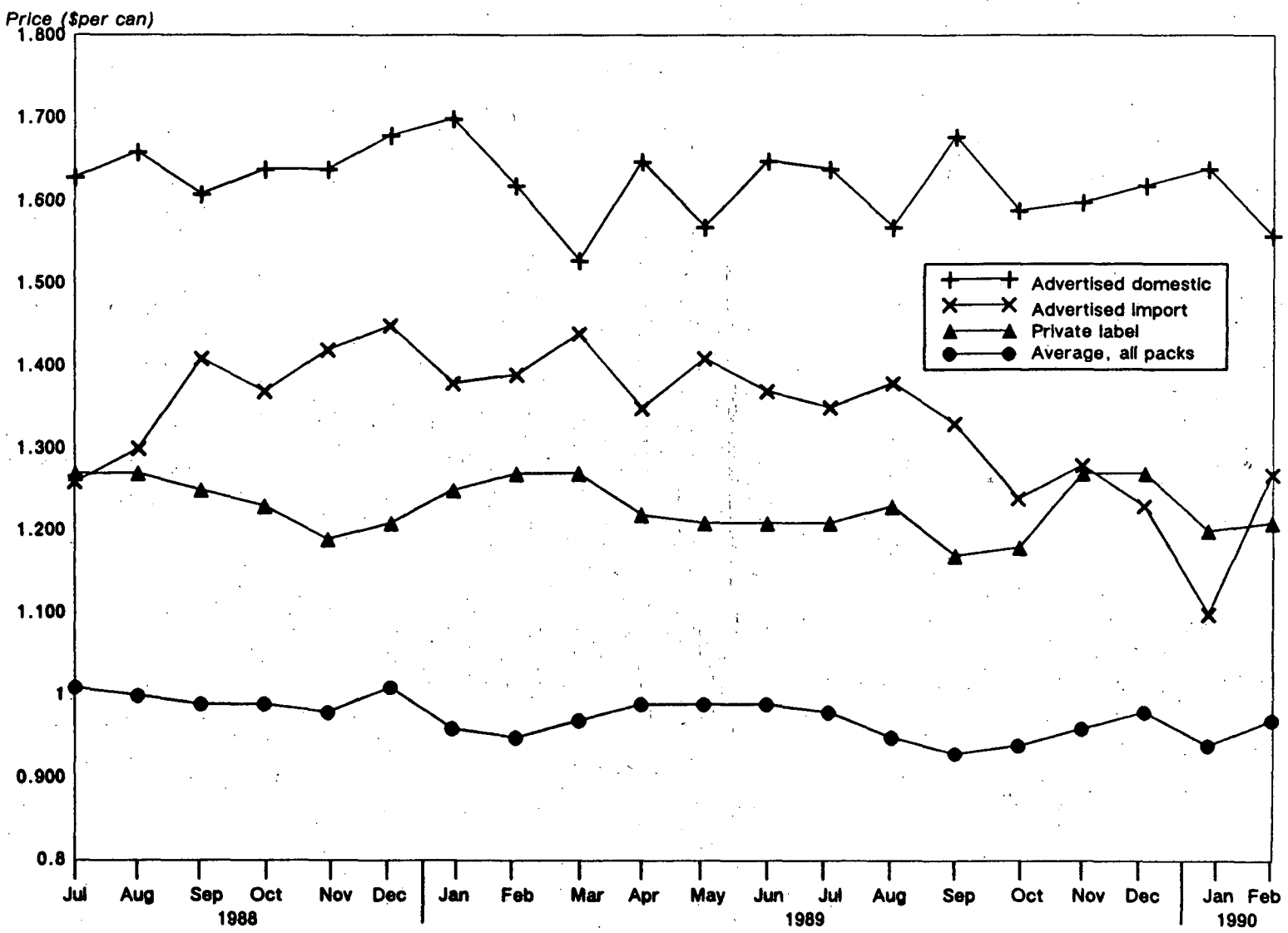
Source: SAMI issue no. 285-1 through 306-4, the Arbitron Co.

Figure 3-2
Canned tuna: U.S. retail prices, selected brands, chunk light in water, 6.5 oz



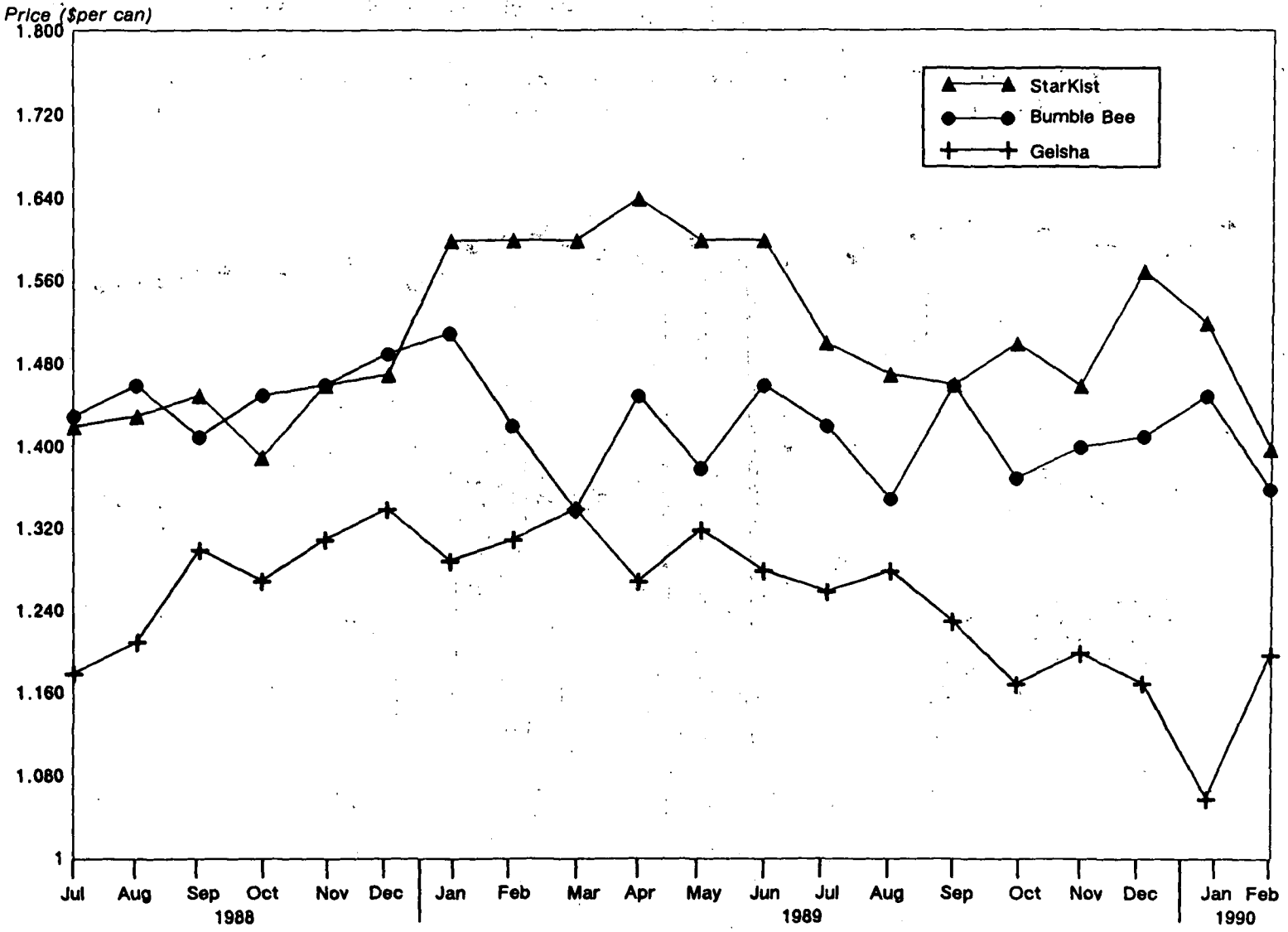
Source: SAMI issue no. 285-1 through 306-4, the Arbitron Co.

Figure 3-3
Canned tuna: U.S. retail prices, average, all packs vs. selected whitemeat in water packs



Source: SAMI issue no. 285-1 through 306-4, the Arbitron Co.

Figure 3-4
Canned tuna: U.S. retail prices, selected brands, solid white in water, 6.5 oz



Source: SAMI issue no. 285-1 through 306-4, the Arbitron Co.

private label prices, which in turn, were higher than imported advertised brand prices. This price gap is influenced, in large part, by the fact that a larger share of domestic advertised brand lightmeat water pack canned tuna comprises larger, odd-sized cans (such as 9.25 ounce and 12.5 ounce packs). The price gap between private label and import advertised brand packs (which are predominantly 6.5 ounce cans) reflects the intense competition currently occuring between these two categories in the U.S. market, as distributors of imported brands reportedly are aggressively attempting to capture market share at the expense of domestically-produced private labels.[26]

As for the standard, 6.5 ounce can pack, figure 3-2 shows retail price movements for selected domestic and imported brands of lightmeat tuna. In general, retail prices trended downward during the period, and there was a significant price gap between domestic (StarKist, Bumble Bee, Chicken-of-the-Sea) and imported (Geisha, Empress) brands.

Although there is less import competition in the albacore pack market, retail prices vary significantly. Figure 3-3 shows retail price movements for all can sizes of whitemeat tuna packed in water from various sources compared with average retail prices for all canned tuna. In general, retail whitemeat canned tuna prices in the U.S. market were relatively steady during the period. Whitemeat tuna retail prices were above the benchmark average price for all canned tuna during the period. Domestic advertised brand prices for whitemeat canned tuna packed in water were higher than imported advertised brand prices, which in turn, were higher than private label prices.

As for the standard, 6.5 ounce can pack, figure 3-4 shows retail price movements for selected domestic and import brands of whitemeat tuna. In general, retail prices for the 6.5 ounce category fluctuated more than the aggregated prices during the period, and there were significant price gaps between each of the brands, with the import brand significantly lower in price than the domestic brands. These fluctuations reflected the competitive pricing strategies of the brands.

During the course of Commission interviews, several U.S. producers stated that, in general, retail price markups in the U.S. market range from a "breakeven" margin of 20 percent above wholesale prices to about 35 percent. However, markups are generally lower for the standard, 6.5 ounce can size, since this pack size is the one most commonly subject to promotions and discounts. As a result, U.S. processors reportedly enjoy higher profit margins on odd-size can packs.[27]

[26] Commission staff interview with officials of Mitsubishi Foods, Inc., September 20, 1990. Mitsubishi presented proprietary information to support claims of increasing price competition from branded imported canned tuna that is affecting domestically-produced private label packs. Also, see testimony of Richard Atchison, President, Caribe Tuna, Inc., transcript of public hearing, pp. 80-81.

Trade

Exports

Raw tuna

Data on U.S. exports of raw tuna are not separately reported by the Bureau of the Census. However, the National Marine Fisheries Service reports data on exports of raw tuna by U.S. purse seine vessels. The following tabulation shows such exports, by species, during 1986-89 (data from *Statistics and Market News,* Southwest Region, National Marine Fisheries Service, in short tons):

Species	*1986*	*1987*	*1988*	*1989*
Skipjack	22,207	16,256	23,013	17,837
Yellowfin[1]	11,539	12,866	16,941	9,009
Albacore	0	841	0	0
Total	33,746	29,963	39,954	26,846

[1] Includes a small quantity of bigeye, blackfin, and bluefin.

With the closing of tuna-processing plants in southern California in the early 1980s, the export market for raw tuna has received increasing attention from the U.S. tuna fleet. Industry sources have indicated that the 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. Licensing arrangements between U.S. and Thai processors to send canned tuna to the U.S. market and, more recently, Indonesian ownership of Van Camp and Thai ownership of Bumble Bee led to increased raw material requirements by Indonesian and Thai producers. Much of the raw material has been supplied by U.S. purse seine vessels, particularly as Thailand has insignificant tuna resources in its waters. Such exports are expected to continue in the future.

Exports of raw tuna to other countries are believed to be minor relative to those to Thailand. U.S. tuna vessel operators have been reluctant to enter the world tuna market, prefering to sell to 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

[27] Commission staff interviews with officials of several U.S. tuna processors.

buyers for particular product-quality characteristics, and extra costs such as transshipment costs. However, the continuing movement of the U.S. fleet to the western Pacific and the increasingly global nature of the tuna market is changing this emphasis.

Canned tuna

Data are not separately collected on U.S. exports of canned tuna. Even more so than with raw 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; an increasing presence of low-cost imports from Asian sources in European markets; 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

Raw tuna

Imports are a vital source of raw material for U.S. tuna processors. U.S. imports of raw (fresh, chilled and frozen) tuna increased irregularly from 207 thousand metric tons, valued at $239 million, in 1986 to 218 thousand metric tons, valued at $297 million, in 1989 (table 3-15). The major suppliers, in terms of quantity, were Taiwan (21 percent in 1989), France (12 percent), Venezuela (11 percent), and Ghana (9 percent).

Table 3-15
Fresh, chilled, or frozen tuna: U.S. imports for consumption, by principal sources, 1986-89, January-August 1989 and January-August 1990

Source	1986	1987	1988	1989	January-August 1989	January-August 1990
			Quantity (1,000 kilograms)			
Taiwan	39,495	49,743	44,726	46,096	33,462	27,563
Japan	14,676	13,293	18,075	16,535	11,631	12,516
Venezuela	22,219	14,855	7,950	23,074	14,959	7,517
France	27,881	24,007	12,736	25,959	19,999	7,949
Ghana	20,125	17,392	21,219	19,194	11,532	13,533
Vanuatu (New Hebrides)	1,472	0	6,623	15,976	10,685	27
Neth Antilles	3,592	367	1,345	4,493	4,147	67
Spain	8,180	11,626	9,733	13,408	11,821	6,850
Mexico	536	17,198	6,682	12,227	5,117	2,724
All other	69,186	50,732	38,565	41,375	27,684	23,719
Total	207,363	199,212	167,652	218,337	151,462	102,467
			Value (1,000 dollars)			
Taiwan	65,195	99,115	108,394	100,195	73,160	58,775
Japan	22,846	23,049	33,832	35,070	25,022	24,490
Venezuela	19,375	13,572	7,293	20,970	13,151	7,657
France	24,995	18,045	9,278	19,465	15,141	5,814
Ghana	18,152	12,859	15,347	13,837	8,345	9,849
Vanuatu (New Hebrides)	2,705	0	6,973	13,462	9,064	31
Neth Antilles	6,319	509	3,891	12,183	11,519	103
Spain	9,643	13,307	7,937	12,011	10,080	4,844
Mexico	1,115	15,679	5,830	10,565	4,326	2,695
All other	68,161	55,105	54,680	58,950	40,773	35,183
Total	238,507	251,240	253,456	296,707	210,581	149,441
			Unit value (per kilogram)			
Taiwan	$1.65	$1.99	$2.42	$2.17	$2.16	$2.13
Japan	1.56	1.73	1.87	2.12	2.15	1.96
Venezuela	0.87	0.91	0.92	0.91	0.88	1.02
France	0.90	0.75	0.73	0.75	0.76	0.73
Ghana	0.90	0.74	0.72	0.72	0.72	0.73
Vanuatu (New Hebrides)	1.84	0	1.05	0.84	0.85	1.15
Neth Antilles	1.76	1.39	2.89	2.71	2.78	1.53
Spain	1.18	1.14	0.82	0.90	0.85	0.71
Mexico	2.08	0.91	0.87	0.86	0.85	0.99
All other	0.99	1.09	1.42	1.42	1.47	1.48
Average	1.15	1.26	1.51	1.36	1.39	1.46

Note.—Because of rounding, figures may not add to the totals shown.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Import patterns differ according to species. Raw albacore imports, which supply the bulk of U.S. albacore processing raw material, ranged in quantity during 1986–89 between 65 thousand metric tons in 1988 to 74 thousand metric tons in 1989; the value of such imports increased steadily from $117 million in 1986 to $160 million in 1989, or by 37 percent (table 3–16). Taiwan was the major import supplier during the period, accounting for between roughly one-half and two-thirds of total U.S. albacore imports annually during 1986–89. Japan was the second leading supplier and accounted for between 14 and 17 percent annually during the period.

United States imports of raw tropical tuna (mainly skipjack and yellowfin), which account for a smaller share but a larger quantity of U.S. processors' needs,[28] fluctuated during 1986–89, declining from 134 thousand metric tons, valued at $121 million, in 1986 to 103 thousand metric tons, valued at $106 million, in 1988 before rising to 144 thousand metric tons, valued at $136 million, in 1989 (table 3–17). The major suppliers were Venezuela, France, and Ghana.

United States imports of raw tuna from particular countries can be quite erratic. This is basically a result of the method of procurement of imported raw tuna by U.S. processors. These processors usually buy imported raw 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 raw 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

[28] The reason for this is that the bulk of U.S. supplies of raw tuna is tropical tuna.

Table 3-16
Fresh, chilled, or frozen albacore: U.S. imports for consumption, by principal sources, 1986-89, January-August 1989 and January-August 1990

Source	1986	1987	1988	1989	January-August 1989	January-August 1990
			Quantity (1,000 kilograms)			
Taiwan	37,246	44,339	39,793	43,953	32,223	22,741
Japan	12,280	9,641	10,795	12,005	7,745	8,209
Neth Antilles	3,307	263	1,296	4,272	3,971	0
Mauritius	632	8	3,322	4,138	2,391	1,408
Reunion	0	0	1,737	2,580	1,854	479
Panama	696	75	1,789	2,025	2,025	2,624
Spain	3,397	4,245	371	1,078	591	0
Singapore	164	1,625	1,753	637	419	300
Portugal	3	355	1,204	1,023	1,023	904
All other	15,623	8,404	2,877	2,192	1,411	1,068
Total	73,348	68,955	64,940	73,905	53,654	37,733
			Value (1,000 dollars)			
Taiwan	58,895	83,994	92,043	92,348	66,938	47,879
Japan	18,781	18,197	26,294	29,378	20,318	18,772
Neth Antilles	5,925	410	3,735	11,913	11,316	0
Mauritius	1,097	14	6,375	7,609	4,914	2,374
Reunion	0	0	2,681	3,982	2,861	739
Panama	537	204	2,761	3,176	3,176	4,049
Spain	5,551	7,869	1,042	2,817	1,675	0
Singapore	282	3,670	4,537	2,366	1,498	1,343
Portugal	12	561	1,860	1,457	1,457	1,394
All other	26,152	14,595	6,432	5,401	3,770	2,534
Total	117,232	129,515	147,759	160,447	117,922	79,085
			Unit value (per kilogram)			
Taiwan	$1.58	$1.89	$2.31	$2.10	$2.08	$2.11
Japan	1.53	1.89	2.44	2.45	2.62	2.29
Neth Antilles	1.79	1.56	2.88	2.79	2.85	0
Mauritius	1.74	1.69	1.92	1.84	2.05	1.69
Reunion	0	0	1.54	1.54	1.54	1.54
Panama	0.77	2.74	1.54	1.57	1.57	1.54
Spain	1.63	1.85	2.80	2.61	2.83	0
Singapore	1.72	2.26	2.59	3.71	3.57	4.47
Portugal	4.51	1.58	1.54	1.42	1.42	1.54
All other	1.67	1.74	2.24	2.46	2.67	2.37
Average	1.60	1.88	2.28	2.17	2.20	2.10

Note.—Because of rounding, figures may not add to the totals shown.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 3-17
Fresh, chilled, or frozen tropical tuna: U.S. imports for consumption, by principal sources, 1986-89, January-August 1989 and January-August 1990

Source	1986	1987	1988	1989	January-August 1989	January-August 1990
			Quantity (1,000 kilograms)			
Venezuela	22,196	14,850	7,940	23,038	14,936	7,513
France	27,496	23,192	12,736	25,629	19,669	7,949
Ghana	20,125	17,125	21,219	19,194	11,532	13,533
Vanuatu (New Hebrides)	0	0	6,623	15,976	10,685	27
Mexico	536	17,197	6,678	12,203	5,113	2,724
Spain	4,783	7,381	9,361	12,330	11,230	6,850
Ecuador	12,405	10,410	6,305	9,155	5,292	9,046
Taiwan	2,249	5,404	4,932	2,143	1,664	4,822
Japan	2,396	3,652	7,280	4,530	3,885	4,308
All other	41,828	31,046	19,638	20,235	13,802	7,963
Total	134,015	130,258	102,713	144,432	97,808	64,734
			Value (1,000 dollars)			
Venezuela	19,345	13,559	7,278	20,884	13,084	7,637
France	24,485	16,787	9,278	18,956	14,631	5,814
Ghana	18,152	12,447	15,347	13,837	8,345	9,849
Vanuatu (New Hebrides)	0	0	6,973	13,462	9,064	31
Mexico	1,115	15,674	5,823	10,487	4,310	2,695
Spain	4,092	5,438	6,896	9,194	8,406	4,844
Ecuador	8,311	8,500	7,037	8,255	4,780	7,340
Taiwan	6,300	15,121	16,352	7,847	6,222	10,896
Japan	4,065	4,852	7,539	5,691	4,704	5,717
All other	35,410	29,346	23,176	27,647	19,112	15,534
Total	121,275	121,725	105,697	136,260	92,659	70,356
			Unit value (per kilogram)			
Venezuela	$0.87	$0.91	$0.92	$0.91	$0.88	$1.09
France	0.89	0.72	0.73	0.74	0.74	0.73
Ghana	0.90	0.73	0.72	0.72	0.72	0.73
Vanuatu (New Hebrides)	0	0	1.05	0.84	0.85	1.15
Mexico	2.08	0.91	0.87	0.86	0.84	0.99
Spain	0.86	0.74	0.74	0.75	0.75	0.71
Ecuador	0.67	0.82	1.12	0.90	0.90	0.81
Taiwan	2.80	2.80	3.32	3.66	3.74	2.26
Japan	1.70	1.33	1.04	1.26	1.21	1.33
All other	0.85	0.95	1.18	1.37	1.38	1.95
Average	0.90	0.93	1.03	0.94	0.95	1.09

Note.—Because of rounding, figures may not add to the totals shown.

Source: Compiled from official statistics of the U.S. Department of Commerce.

any other. The principal difference between suppliers is the species that are available. For example, during 1986–89, U.S. imports of raw albacore tuna were supplied primarily by Taiwan; U.S. imports of raw yellowfin were supplied primarily by Venezuela; and, U.S. imports of raw skipjack were supplied primarily by France.

Many other countries also supply raw tuna to the U.S. market both in substantial and small quantities. Generally, of course, the various countries that export raw tuna to the U.S. market are those adjacent to the larger tuna fishing areas of the world, including 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. And, more recently, Pacific and Indian Ocean island nations, such as Vanuatu and the Seychelles, have become suppliers.

U.S. imports of raw tuna have declined during January–August 1990 by nearly a third compared with the corresponding period of 1989 (table 3–15). Demand is lower mainly because of a decline in U.S. canned tuna processing in Puerto Rico.

Loins

U.S. imports of tuna loins[29] increased substantially during the period under review. Such imports rose from 132 metric tons, valued at $325,000, in 1986 to 3.6 thousand metric tons, valued at nearly $6 million, in 1989 (table 3–18). During January–August 1990, such imports

[29] Loins basically are the lighter-meat, edible portion of tuna, similar to fillets.

Table 3-18
Tuna loins: U.S. imports for consumption, by principal sources, 1986-89, January-August 1989 and January-August 1990

Source	1986	1987	1988	1989	January-August 1989	January-August 1990
			Quantity (1,000 kilograms)			
Ecuador	91	999	1,261	1,934	1,058	2,245
Mexico	0	0*	0	815	815	0
Costa Rica	0	0	0	788	227	1,063
Japan	31	52	28	15	6	0
Venezuela	0	5	0	43	0	1,164
Colombia	0	0	0	14	14	471
Malaysia	0	0	0	3	3	0
Korea, South	0	0	0	1	0	0
China	0	0	0	0*	0*	0
All other	11	138	28	3	3	14,166
Total	132	1,194	1,316	3,616	2,127	19,109
			Value (1,000 dollars)			
Ecuador	180	2,149	2,731	3,527	2,057	4,290
Mexico	0	2	0	1,435	1,435	0
Costa Rica	0	0	0	751	442	477
Japan	132	248	144	99	41	1
Venezuela	0	8	0	86	0	2,240
Colombia	0	0	0	34	34	1,067
Malaysia	0	0	0	16	16	0
Korea, South	0	0	0	2	0	0
China	0	0	0	1	1	0
All other	13	260	98	1	1	42,685
Total	325	2,667	2,973	5,951	4,027	50,760
			Unit value (per kilogram)			
Ecuador	$1.98	$2.15	$2.17	$1.82	$1.94	$1.91
Mexico	0	6.06	0	1.76	1.76	0
Costa Rica	0	0	0	0.95	1.95	0.45
Japan	4.32	4.75	5.25	6.36	6.95	21.28
Venezuela	0	1.65	0	2.00	0	1.93
Colombia	0	0	0	2.40	2.40	2.26
Malaysia	0	0	0	4.66	4.66	0
Korea, South	0	0	0	2.31	0	0
China	0	0	0	3.11	3.11	0
All other	1.21	1.88	3.51	0.38	0.38	3.01
Average	2.46	2.23	2.26	1.65	1.89	2.66

Note.—Because of rounding, figures may not add to the totals shown.

Source: Compiled from official statistics of the U.S. Department of Commerce.

totaled 19 thousand metric tons, valued at $51 million. Ecuador supplied most of the imports during 1986-89, accounting for between 54 and 96 percent of the annual quantity. However, in 1990, Thailand accounted for the bulk of such imports. During January-August 1990, U.S. imports of tuna loins from Thailand totaled 14 thousand metric tons, valued at $43 million. This represented about three-quarters of the quantity and 84 percent of the value of such imports during the period. Thailand seized the leading position as a supplier of loins to the U.S. market after Bumble Bee opened a tuna canning plant in California in February 1990. This plant is totally supplied by loins imported from their parent firm, Unicord, in Thailand. Loins imported from Latin American sources (Ecuador, Venezuela, Costa Rica) are processed mainly in tuna canning plants in Puerto Rico.

Canned tuna

U.S. imports of canned tuna, which increased tremendously during 1979-85 (298 percent in quantity and 221 percent in value during the period), continued to increase during 1986-89. Such imports rose from 107 thousand metric tons, valued at $229 million, in 1986 to 158 thousand metric tons, valued at $376 million, in 1989 (or by 47 percent in quantity and 64 percent in value) (table 3-19). This continued 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 generally has been strong during 1986-89 and was fueled by favorable economic conditions, generally declining canned tuna prices, and shifting consumer dietary preferences. Second, the share of the total U.S. supply of canned tuna produced by U.S. processors has declined, particularly since 1982.

Table 3-19
Canned tuna: U.S. imports for consumption, by principal sources, 1986-89, January-August 1989 and January-August 1990

Source	1986	1987	1988	1989	January-August 1989	January-August 1990
			Quantity (1,000 kilograms)			
Thailand	69,082	66,647	81,168	112,620	85,913	66,736
Taiwan	12,964	11,759	10,892	12,644	9,294	5,044
Philippines	12,693	9,461	8,394	15,426	11,181	10,013
Indonesia	370	683	2,202	10,269	6,762	5,917
Japan	4,789	2,127	1,529	1,116	822	434
Malaysia	1,089	714	1,281	1,932	1,260	1,055
Ecuador	1,309	2,319	3,773	1,313	1,110	269
Venezuela	3,324	1,322	80	1,036	55	464
Singapore	563	208	754	284	111	1,250
All other	1,290	782	835	1,308	1,053	626
Total	107,472	96,021	110,907	157,948	117,560	91,809
			Value (1,000 dollars)			
Thailand	139,561	135,368	207,538	260,996	202,277	153,870
Taiwan	34,483	34,809	41,759	44,857	33,418	17,194
Philippines	23,124	16,577	18,629	31,129	23,335	17,710
Indonesia	690	1,247	5,690	19,667	13,686	11,511
Japan	14,755	7,375	6,992	5,172	3,799	1,858
Malaysia	3,160	1,985	3,964	5,131	3,354	2,870
Ecuador	2,603	4,481	9,366	2,912	2,564	544
Venezuela	6,389	2,467	200	1,943	98	920
Singapore	1,140	452	1,974	768	270	1,241
All other	3,142	2,160	2,554	3,337	2,587	1,985
Total	229,047	206,920	298,666	375,911	285,387	209,702
			Unit value (per kilogram)			
Thailand	$2.02	$2.03	$2.56	$2.32	$2.43	$2.28
Taiwan	2.66	2.96	3.83	3.55	3.60	3.41
Philippines	1.82	1.75	2.22	2.02	2.09	1.77
Indonesia	1.87	1.83	2.58	1.92	2.02	1.95
Japan	3.08	3.47	4.57	4.64	4.62	4.28
Malaysia	2.90	2.78	3.09	2.66	2.66	2.72
Ecuador	1.99	1.93	2.48	2.22	2.31	2.02
Venezuela	1.92	1.87	2.52	1.87	1.77	1.98
Singapore	2.03	2.17	2.62	2.70	2.44	0.99
All other	2.44	2.76	3.06	2.55	2.46	3.17
Average	2.13	2.15	2.69	2.38	2.43	2.28

Note.—Because of rounding, figures may not add to the totals shown.

Source: Compiled from official statistics of the U.S. Department of Commerce.

In a related development, U.S. tuna processors have procured a portion of their supplies overseas since 1984. Furthermore, two former U.S. tuna processing firms have recently been purchased by foreign tuna processors who have increased the share of their branded products accounted for by imports from their home-country canneries.

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 1989, approximately 52 percent of the quantity and 69 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. Other important sources of imported canned tuna in the U.S. market include the Philippines (10 percent of the quantity of total imports in 1989), Taiwan (8 percent), and Indonesia (7 percent). Imports from each of these sources generally increased during 1986-89.

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 1986-89 (table 3-20).

This is attributable, in part, 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 (table 3-21).

U.S. canned tuna import levels have declined substantially during 1990. Such imports totaled 92 thousand metric tons during January-August 1990; this level is 22 percent below the level during the corresponding period in 1989 (table 3-19). Such imports are down from every major supplier, as the U.S. canned tuna market has become saturated in 1990.

Table 3-20
Canned tuna, in water: U.S. imports for consumption, by principal sources, 1986-89, January-August 1989 and January-August 1990

Source	1986	1987	1988	1989	January-August 1989	January-August 1990
			Quantity (1,000 kilograms)			
Thailand	69,082	66,647	81,168	112,619	85,912	66,736
Taiwan	12,964	11,758	10,891	12,643	9,293	5,042
Philippines	12,693	9,460	8,394	15,426	11,181	10,013
Indonesia	370	683	2,202	10,269	6,762	5,917
Japan	4,789	2,123	1,525	1,114	822	433
Malaysia	1,089	714	1,281	1,932	1,260	1,055
Ecuador	1,309	2,319	3,773	1,313	1,110	269
Venezuela	3,324	1,322	80	1,036	55	464
Singapore	563	208	754	284	111	1,250
All other	1,013	638	696	1,120	920	504
Total	107,195	95,871	110,763	157,757	117,425	91,684
			Value (1,000 dollars)			
Thailand	139,561	135,368	207,538	260,993	202,274	153,870
Taiwan	34,483	34,804	41,755	44,854	33,415	17,188
Philippines	23,124	16,572	18,629	31,129	23,335	17,710
Indonesia	690	1,247	5,690	19,667	13,686	11,511
Japan	14,755	7,357	6,960	5,157	3,796	1,852
Malaysia	3,160	1,985	3,964	5,131	3,354	2,870
Ecuador	2,603	4,481	9,366	2,912	2,564	544
Venezuela	6,389	2,467	200	1,943	98	920
Singapore	1,140	452	1,974	768	270	1,241
All other	2,015	1,318	1,846	2,433	1,931	1,257
Total	227,920	206,051	297,922	374,987	284,724	208,963
			Unit value (per kilogram)			
Thailand	$2.02	$2.03	$2.56	$2.32	$2.35	$2.31
Taiwan	2.66	2.96	3.83	3.55	3.60	3.41
Philippines	1.82	1.75	2.22	2.02	2.09	1.77
Indonesia	1.87	1.83	2.58	1.92	2.02	1.95
Japan	3.08	3.46	4.56	4.63	4.62	4.27
Malaysia	2.90	2.78	3.09	2.66	2.66	2.72
Ecuador	1.99	1.93	2.48	2.22	2.31	2.02
Venezuela	1.92	1.87	2.52	1.87	1.77	1.98
Singapore	2.03	2.17	2.62	2.70	2.44	0.99
Total other	1.99	2.06	2.65	2.17	2.10	2.49
Average	2.13	2.15	2.69	2.38	2.42	2.28

Note.—Because of rounding, figures may not add to the totals shown.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 3-21
Canned tuna, in oil: U.S. imports for consumption, by principal source, 1986-89, January-August 1989 and January-August 1990

Source	1986	1987	1988	1989	January-August 1989	January-August 1990
			Quantity (1,000 kilograms)			
Spain	85	87	77	101	59	50
Italy	15	18	18	27	26	13
Portugal	32	39	44	40	27	20
Japan	0	3	4	2	0	0
Canada	0	0	0	19	19	33
Korea, South	0	0	0	2	2	7
Thailand	0	0	0	0*	0*	0
Taiwan	0	1	1	1	1	2
All other	145	1	0	0	0	0
Total	277	149	144	192	135	125
			Value (1,000 dollars)			
Spain	486	570	435	597	393	404
Italy	99	118	108	147	141	96
Portugal	101	153	165	139	100	95
Japan	0	18	32	15	3	6
Canada	0	0	0	11	11	102
Korea, South	0	0	0	11	11	28
Thailand	0	0	0	3	3	0
Taiwan	0	5	5	2	2	6
All other	441	6	0	0	0	2
Total	1,127	869	744	924	664	740
			Unit value (per kilogram)			
Spain	$5.72	$6.56	$5.63	$5.94	$6.68	$8.11
Italy	6.73	6.64	6.14	5.52	5.43	7.58
Portugal	3.13	3.96	3.72	3.51	3.67	4.82
Japan	0	5.78	8.55	6.58	5.84	6.78
Canada	0	0	0	0.56	0.56	3.11
Korea, South	0	0	0	4.34	4.34	4.31
Thailand	0	0	0	6.27	6.27	0
Taiwan	0	3.36	3.70	2.87	2.87	3.24
All other	3.04	4.03	0	0	0	5.08
Total	4.07	5.82	5.16	4.82	4.91	5.93

Note.—Because of rounding, figures may not add to the totals shown.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Chapter 4
The European Canned Tuna Industry and Market

The European Tuna Industry

This section discusses the important tuna harvesting and processing sectors of the European Community (EC). Spain and France are the principal tuna harvesting nations. Spain, France, Italy, and, to a lesser extent, Portugal are the major processors of canned tuna.

The Harvesting Sector

Production

During 1986–88, Spanish production of tuna and tuna-like species have been fairly stable ranging between 156,000 metric tons and 159,000 metric tons as shown in table 4–1 (the latest data available). French tuna production amounted to an estimated 120,000 tons in 1989.

Data are not available for total tuna catches for both Spain and France; however, catches by Spanish and French purse seine fleets in the western Indian Ocean for 1987–89 are shown in table 4–2. The Spanish and French fleets' catch during 1987–89 annually accounted for about 95 percent of the total catch in the Indian Ocean.

Spanish and French Landings by Species

Skipjack and yellowfin are the main tuna species harvested in the western Indian Ocean by Spanish and French fishermen, with smaller catches of bigeye and albacore. Skipjack, the leading species caught during 1987–89, increased by 45 percent over the 3 years, totaling 140,280 metric tons in 1989. Yellowfin catches increased from 59,862 metric tons in 1987 to 101,345 tons in 1988, then declined to 65,533 in 1989. According to industry sources, the decline in yellowfin catches in 1989 was believed to be due to unfavorable oceanographic conditions, which caused the tuna to remain deeper and thus less accessible to harvest.[1]

Production by Type of Vessel

Purse seiners, trollers, and long liners are the principal vessel types used to harvest tuna by EC fishermen. Purse seine vessels accounted for the bulk of the EC catch of tuna during 1985–89. In 1988, over 1,000 EC vessels of 33–82 feet trolled commercially for tuna on a seasonal basis. Tuna caught using the trolling method are normally of a higher quality because they suffer little damage during capture and thus command higher prices.

Number and Location of Producers

The western Indian Ocean and the fishing grounds off the coast of West Africa in the Atlantic were the principal fishing grounds for the Spanish and French tuna fleets during 1985–89. Prior to 1985, most of the Spanish and French tuna purse seiners fished the eastern Atlantic; however, because of a decline in yellowfin catches, many transferred their operations to the western Indian Ocean, primarily in the area around the Seychelles.

[1] Seychelles Fishing Authority, *Tuna Bulletin*, Fourth Quarter 1989, p. 3.

Table 4-1
Fresh and frozen tuna: EC production, imports, exports, and supply 1986–89
(In metric tons)

Country and item	*1986*	*1987*	*1988*	*1989*
Spain:				
Production	159,433	155,793	157,291	(1)
Imports	26,327	88,916	126,046	118,418
Exports	55,234	42,884	113,002	122,496
Supply	130,526	201,825	170,335	(1)
Portugal:				
Production	(1)	13,500	17,000	13,000
Imports	10,980	9,600	10,700	11,000
Exports	229	300	300	100
Supply	(1)	22,800	27,400	23,900
Italy:				
Production	(2)	(2)	(2)	(2)
Imports	110,458	119,592	113,545	(1)
Exports	931	604	1,098	(1)
Supply	109,527	118,988	112,447	(1)
France:				
Production	108,842	114,160	140,142	[3]120,000
Imports	22,400	27,765	36,894	(1)
Exports	84,008	82,531	78,491	(1)
Supply	47,234	59,394	98,545	(1)

[1] Not available.
[2] Fresh and frozen tuna production by Italy is believed to be minimal with less than 5,000 tons produced annually.
[3] See "Cannery Changes in France," *Seafood International*, September 1990, p. 61.

Source: Spain data compiled from report from U.S. Embassy, Madrid, August 1990; Portuguese data compiled from report from U.S. Embassy, Lisbon, August 1990; Italian and France data compiled from FAO statistics, except as noted.

Table 4-2
Tuna: Catch by major country, species, and total species, in the Western Indian Ocean, 1987-89
(In metric tons)

Country and Year	Yellowfin	Skipjack	Other	Total All Species
1987:				
Spain	26,259	43,696	376	70,331
France	33,603	53,008	1,296	87,907
All other	1,850	2,742	13	4,605
Total	61,712	99,446	1,685	162,843
1988:				
Spain	50,631	61,709	1,238	113,578
France	50,714	48,755	1,110	100,579
All other	4,938	8,124	436	13,498
Total	106,283	118,588	2,784	227,655
1989:				
Spain	36,255	86,518	2,101	124,874
France	29,278	53,762	880	83,920
All other	3,910	7,718	595	12,223
Total	69,443	147,998	3,576	221,017

Source: Compiled from Seychelles Fishing Authority, *Tuna Bulletin*, Fourth quarter 1988 and 1989.

The following tabulation shows the average number of purse seiners fishing in the Indian Ocean, by country, for 1986-89:[2]

Country	1986	1987	1988	1989
France	20	18	20	19
Spain	11	12	15	22
Mauritius	1	2	3	3
All other[1]	2	2	5	4
Total	34	34	43	48

[1] Includes vessels from Ivory Coast, Panama, United Kingdom, Soviet Union, Japan, and India.

As the tabulation shows, France and Spain dominated the tuna purse seine fishing effort in the Indian Ocean during 1986-89, accounting for 85 percent of the purse seiners in 1989. The number of French vessels remained fairly constant; however, the Spanish fleet doubled from 11 in 1986 to 22 in 1989.

Another major fishing area for Spanish and French vessels was the Guinea Gulf in the Atlantic. Eleven French seiners harvested 40,648 tons of tuna in 1989, an increase of 28 percent from 31,640 tons harvested in 1988. Sixty-seven percent of the catch consisted of yellowfin.

According to the Spanish Official State Bulletin, the Spanish fleet with licenses for tuna in 1989 consisted of 808 vessels, down from 1,440 vessels in 1988. Approximately 760 of these vessels are small (less than 30 meters in length) and employ 12 to 15 crewmen. The remaining vessels consist of large freezer seiners employing more than 30 crewmen per vessel. The freezer ships harvest tuna from the middle and south Atlantic and the Indian Ocean.[3]

[2] Ibid., Fourth Quarter 1988 and 1989.
[3] U.S. Department of State, Report from U.S. Embassy, Madrid, August 1990.

The Processing Sector

The major tuna processing countries of the EC include Italy, France, Spain, and, to a lesser extent, Portugal. Italy imports the bulk of its raw tuna supplies, whereas Spain, France, and Portugal rely on domestic landings and imports of raw tuna supplies.

Production

Table 4-3 shows canned tuna production for Italy, Spain, France, and Portugal for 1986-89.

Italy

During 1986-89, Italian canned tuna production generally increased, totaling 85,000 tons in 1989 (table 4-3). Canned tuna in Italy is processed mainly from imported fresh and frozen tuna since domestic raw tuna catches are small, with fewer than 5,000 tons being caught in 1989. Fresh and frozen tuna imports totaled 119,592 tons in 1987, then declined to 113,545 tons in 1988[4] (latest data available). Seychelles, Spain, Mexico, Panama, France, and the Ivory Coast were among the principal suppliers of Italy's imports of raw tuna. Implementation of new technology and the opening of new processing plants have substantially increased Italy's tuna canning capacity. In 1989, 85 percent of Italy's canned tuna was packed in olive oil, 10 percent in water, and the remaining 5 percent in seed oils.[5]

Spain

During 1986-89, production of canned tuna by Spanish canneries increased by 20 percent to 71,000 tons (table 4-3). Spanish tuna processors rely on both domestic and imported raw tuna for

[4] "Tuna Oversupply of frozen and canned tuna," *Globefish*, February 1989, p. 9.
[5] U.S. Department of State, Report from U.S. Embassy, Rome, August 1990.

Table 4-3
Canned tuna: EC production, by major countries, 1986-89
(In metric tons)

Country	1986	1987	1988	1989
Italy	78,700	84,000	80,000	85,000
Spain	59,346	62,402	67,690	[1]71,000
France	48,500	49,333	46,871	[2]54,000
Portugal	12,000	10,300	11,200	14,000
Total	194,546	206,035	205,761	224,000

[1] Estimated.
[2] See "Cannery Changes in France," *Seafood International*, September 1990, p. 60.

Note.—A small amount of specialty tuna (i.e. packed in tomato sauce) is processed in Denmark; however, the above 4 countries account for the bulk of canned tuna production in the EC.

Source: Data on Italy, Spain, and France compiled from FAO statistics, except as noted. Data on Portugal compiled from U.S. Embassy, Lisbon, August 1990.

canned tuna production. Spanish imports of fresh, chilled, or frozen tuna increased during 1986-89, from 26,327 metric tons in 1986 to 118,418 tons in 1989 (table 4-1). Principal suppliers of fresh and frozen tuna to Spain include Ecuador, the Ivory Coast, Venezuela, Mexico, and South Africa.

France

French production of canned tuna generally increased during 1986-89, totaling approximately 54,000 metric tons in 1989 (table 4-3). The decline in French canned tuna production in 1988 could be attributed to higher production costs, which apparently forced StarKist to close two plants and reduce the volume of raw materials. Also, French canners are reportedly concentrating more on value-added packs.[6] During 1986-89, imports of canned tuna rose steadily from 34,000 tons in 1986 to 45,000 tons in 1989.

Although France supplies much of its own raw tuna, it also relies on imports. During 1986-88, French imports of fresh and frozen tuna increased from 22,400 metric tons in 1986 to 36,894 metric tons in 1988 (table 4-1). Principal suppliers of imported raw tuna to French canneries include Senegal (landed primarily by French seiners), Spain, the Ivory Coast, Venezuela, and the United States.

Various French companies have invested in foreign tuna operations. An example is a tuna processing facility in Madagascar, built at a total cost estimated at ECU14.5 million. The facility includes a can manufacturing plant, a fishmeal unit, and a cold warehouse. About 10,000 metric tons of canned tuna production is expected in its first year of operation, increasing to a maximum of 20,000 metric tons in subsequent years. Peche et Froid, Ocean Indien, a joint venture between Malagasy partners and the French group, Peche et Froid (the leading French seafood canner), will own and manage the facility employing approximately 270 local people.[7] Peche et Froid is also a major shareholder of the SAIB cannery in Dakar, Senegal, and the PFIC cannery in Abidjan, Ivory Coast.[8]

Another joint venture is a tuna cannery located in Fishing Port, Victoria, Seychelles. The cannery is owned by two French companies, Pecheurs de France and Armement Cooperatif Finisterien (ACF) (30 percent ownership), and the Government of Seychelles (70 percent).[9] The ACF also owns more than 40 seiners licensed to fish in Seychelles' waters. In addition, the French tuna company, Saupiquet has canneries in Senegal and the Ivory Coast.[10]

Portugal

Portuguese production of canned tuna generally increased during 1986-89, totaling 14,000 metric tons in the latter year (table 4-3). Processors purchase both domestic and imported raw tuna for their canned tuna operations. Imports of fresh and frozen tuna increased steadily, totaling 11,000 tons in 1989 (table 4-1). Principal suppliers of fresh and frozen tuna include Spain, Mexico, Brazil, and Venezuela. Fifteen processing plants with a total capacity of 15,000 tons annually were operating in 1989. Production of canned tuna for the export market consists of tuna packed in olive oil, whereas tuna packed for the domestic market is packed in vegetable oils other than olive oil.[11]

The European Tuna Market[12]

The European region figures prominently in the changing structure of the global tuna market.

[6] *Infofish Trade News*, No. 11/89, Kuala Lumpur, Malaysia, June 15, 1989.

[7] "Tuna factory coming up," *INFOFISH*, May 1988, p. 9.

[8] "France, European marketplace," *Seafood International* April 1988, p. 27.

[9] U.S. Department of Commerce, Office of International Affairs, Foreign Fisheries Analysis Branch, *The Fisheries of Seychelles*, IFR 89/96, p. 4.

[10] "Canning Changes in France," *Seafood International*, September 1990, p. 61.

[11] Report from U.S. Embassy, Lisbon, August 1990.

[12] For the purposes of this study, Europe comprises Western European countries.

Europe, particularly the EC, has been one of the fastest growth markets for canned tuna in the world in recent years and has affected the strategies of firms in major canned tuna producing and exporting nations. The European market for canned tuna comprises three segments—the EC, other Western European countries, and Eastern Europe.

Europe is second only to the U.S. market in terms of canned tuna consumption. Overall European consumption of canned tuna rose 26 percent during 1986–89 and reached a level of 386,000 metric tons the latter year (table 4–4).[13] The EC countries comprise the great bulk of the European canned tuna market and accounted for 95 percent of total consumption in 1989. The EC market can be generally divided between those countries with and those without canned tuna processing industries. The countries with such industries generally are mature markets and those without are relatively recent markets. Mature markets are France, Italy, Spain, Portugal, Greece, Belgium, and Luxembourg.[14] These markets depend both on domestic production and imports, and have developed characteristics and preferences over the years. Nonmature markets include the remaining EC members and are dominated by the United Kingdom and West Germany. These markets rely on imports for virtually all of their canned tuna supplies. Most of the growth in the EC canned tuna market has been accounted for by nonmature markets, with imports supplying the growth.

Other Western European canned tuna markets have not grown as much as the EC market; however, the growth rate has been substantial. Although accounting for only 5 percent of the European total, consumption of canned tuna by non-EC European nations rose 75 percent during 1986–89 (table 4–4). Virtually all canned tuna supplies in this market are provided by imports.

Data are not available on the Eastern European market for canned tuna. However, inasmuch as disposable income is limited in most Eastern European markets, it is believed that canned tuna is not consumed in significant quantities.

Supply and Demand Factors

The factors that affect the supply of and the demand for canned tuna in the U.S. market also hold, for the most part, for the European market. The supply of canned tuna in the European market is determined by production and import levels. The major factors influencing production are canned tuna market prices, raw material availability, and production costs. The same factors influence the supply of imported canned tuna, with an additional factors being barriers to entry and conditions in alternative markets, such as the United States and Japan.

[13] In comparison, the U.S. market consumed approximately 449,000 metric tons of canned tuna in 1989.

[14] Belgium and Luxembourg do not have tuna harvesting and/or processing industries. However, market conditions and characteristics are affected strongly by those in France.

Table 4-4
Canned tuna: European apparent consumption, 1985-89
(In thousands of metric tons)

Market	*1985*	*1986*	*1987*	*1988*	[1]*1989*
EC:					
Italy	66	83	91	87	97
France	55	77	86	91	[2]92
Spain	39	55	55	55	[2]57
United Kingdom	34	33	32	44	61
West Germany	18	24	29	26	30
Portugal	6	9	7	8	10
Belgium and Luxembourg	5	6	7	7	7
Netherlands	2	3	5	5	6
Denmark	2	3	3	4	3
Greece	1	1	1	[1]1	[1]1
Ireland	([3])	([3])	1	1	1
Total, EC	228	294	317	329	365
Other Western Europe:					
Switzerland	[2]4	[2]4	[2]5	[2]5	[2]6
Finland	1	2	4	4	5
Sweden	2	3	4	3	5
Austria	[2]2	[2]2	[2]4	[2]4	[2]4
Norway	([3])	1	1	1	1
Total, other Western Europe	9	12	18	17	21
Total, Europe	237	306	335	346	386

[1] Preliminary.
[2] Estimated.
[3] Less than 500 metric tons.

Source: Seafood 90, Food News, London, 1990; Food and Agriculture Organization of the United Nations; reports from various U.S. Embassies.

The demand for canned tuna in the European market is principally determined by the number of consumers (or population), disposable income levels, prices of canned tuna and of competing food items, and consumer preferences. The European population was approximately 356 million persons in 1989, up about 1 percent from the 1983 level (table 4-5). Population growth in Europe is not as rapid as in the United States, and any growth in the European canned tuna market will likely result from increases in per capita consumption.

The level of consumers' disposable income influences the demand for canned tuna. The gross domestic product (GDP), one measure of disposable income, for Western European countries increased 62 percent, in nominal terms, during 1983–88 (table 4-6). The GDP in EC countries rose 69 percent during the period. This growth, in addition to population growth, is likely to be a large determinant in any increased demand for tuna if the growth in GDP exceeds the inflation rate for the period.

Consumer preferences play a significant role in the demand for canned tuna. These preferences include type of pack, product quality, and brand loyalty. These preferences vary considerably by each country and are discussed in the following sections.

The supply of canned tuna is affected by European production and the availablity of imports. Europe is a relatively high-cost producing area for canned tuna, owing to its large distance from fish resources and its relatively high labor and environmental costs. In addition, the market relies increasingly on imports for its canned tuna supplies, as demand increases in nonproducing markets. Thus, competition for canned tuna supplies from other markets, particularly from the United States, affects the availability of canned tuna in the European market to an increasingly important degree compared with domestic supply conditions.

Market Profile

The European market for canned tuna is as diverse as the peoples and countries it comprises. Distinct demand preferences and market structures have historically developed within each European country. Thus, the major canned tuna markets within Europe will be discussed separately.

Italy

Italy is the largest EC market for canned tuna. Italy is a mature canned tuna market, the bulk of which is supplied by domestic production. Although imports account for a small share of consumption (12 percent in 1989), Italian imports of canned tuna doubled during 1986–89 (table 4-7). It is believed that the relatively low-priced products from Asian producers (mainly Thailand) are making inroads in the Italian market, particularly in the institutional sector. Italian consumers overwhelmingly prefer yellowfin packed in olive oil.[15]

[15] Richard Elsy, "The European and Middle East Tuna Market: A View from the Pacific Islands," *The Development of the Tuna Industries in the Pacific Islands Region: An Analysis of Options*, David J. Doulman, ed. (Honolulu: East-West Center, 1987).

Table 4-5
Population of Western Europe, by area and country, 1983–88
(In millions)

Area and country	*1983*	*1984*	*1985*	*1986*	*1987*	*1988*
Western Europe:						
EC:						
West Germany	61.42	61.18	61.02	61.05	61.17	61.20
France	54.73	54.95	55.17	55.39	55.63	55.87
United Kingdom	56.38	56.49	56.62	56.76	56.93	57.08
Italy	56.84	57.00	57.13	57.22	57.35	57.44
Ireland	3.51	3.54	3.55	3.54	3.54	3.54
Denmark	5.11	5.11	5.11	5.12	5.13	5.13
Netherlands	14.36	14.42	14.48	14.56	14.66	14.76
Spain	38.17	38.34	38.50	38.67	38.83	39.05
Belgium	9.86	9.86	9.86	9.91	9.92	9.92
Luxembourg	0.37	0.37	0.37	0.37	0.37	0.37
Portugal	10.01	10.09	10.16	10.21	10.25	10.41
Greece	9.85	9.90	9.93	9.97	9.99	10.01
Total, EC	320.61	321.25	321.90	322.77	324.07	324.78
Other Western Europe:						
Norway	4.13	4.14	4.15	4.17	4.19	4.20
Sweden	8.33	8.34	8.35	8.37	8.40	8.44
Finland	4.86	4.88	4.90	4.92	4.93	4.95
Switzerland	6.48	6.44	6.47	6.50	6.55	6.51
Austria	7.55	7.55	7.56	7.56	7.58	7.60
Total, other Western Europe	31.35	31.35	31.43	31.52	31.65	31.70
Total, Europe	351.96	352.60	353.33	354.29	355.72	356.48

Source: Calculated from data in *International Financial Statistics*, various issues. International Monetary Fund, Washington.

Table 4-6
Gross Domestic Product in Western Europe, by area and country, 1983-88
(In billions of U.S. dollars)

Area and country	*1983*	*1984*	*1985*	*1986*	*1987*	*1988*
Western Europe:						
EC:						
West Germany	655.9	617.0	621.8	889.4	1,116.3	1,201.8
France	525.7	499.4	523.1	729.5	882.0	949.9
United Kingdom	200.6	242.6	274.1	259.6	254.3	259.3
Italy	493.4	449.6	425.7	559.0	662.2	685.3
Ireland	13.2	15.9	16.6	13.1	12.4	12.5
Denmark	61.8	56.9	58.0	78.8	92.7	94.0
Netherlands	133.5	124.7	125.9	174.9	212.9	228.3
Spain	155.0	156.2	164.0	228.1	289.2	340.1
Belgium	82.6	78.6	81.8	114.5	142.6	153.9
Luxembourg	3.9	3.8	4.0	5.7	(1)	(1)
Portugal	20.6	19.2	20.8	29.5	36.8	40.8
Greece	35.0	33.8	33.4	39.1	46.2	52.5
Total, EC	2,381.2	2,297.4	2,349.2	3,121.2	3,747.6	4,018.4
Other Western Europe:						
Norway	55.1	55.4	58.2	69.5	83.3	89.4
Sweden	92.6	96.0	100.6	132.7	161.1	181.8
Finland	49.3	51.5	54.3	71.1	89.5	(1)
Switzerland	102.9	93.5	92.8	130.4	160.4	168.4
Austria	66.9	63.9	65.4	93.8	117.7	(1)
Total, other Western Europe	366.8	360.3	371.3	497.5	612.0	439.6
Total, Europe	2,748.0	2,657.7	2,720.5	3,618.7	4,359.6	4,458.0

[1] Not available.

Source: Calculated from data in *International Financial Statistics*, various issues, International Monetary Fund, Washington.

France

The canned tuna market in France is the second largest in the EC. France is a mature market with a relatively slow rate of growth; supply and consumption patterns have remained relatively stable in recent years. The French canned tuna market is supplied about evenly by domestic production and imports. The bulk of the French market is held by the lightmeat-chunk pack, which accounts for about two-thirds of the market.[16] Slightly less than a third of the market is held by specialty packs (such as flakes and hors d'oeuvres), with the remainder held by whitemeat. Tuna packed in brine is overwhelmingly preferred to that in oil. Tuna is consumed in about half of all French households; a growing number of urban households comprising relatively young families with children as well as middle- and upper-income households are consuming canned tuna.[17]

United Kingdom

The United Kingdom is a relatively new market for canned tuna. Canned tuna has been increasingly replacing canned salmon in recent years in this market. Canned tuna is luring younger consumers away from the traditional preference for canned salmon.[18] Relatively high canned salmon prices in the U.K. market during recent years further contributed to the growth in demand for canned tuna.[19] The rate of growth in the U.K. canned tuna market has been high; U.K. imports of canned tuna rose 85 percent during 1986-89 (table 4-8). Imports supply virtually the entire U.K. canned tuna market, as there is no domestic tuna canning industry. Historically, the U.K. canned tuna market exhibited a preference for solid, oil-packed lightmeat tuna (mainly skipjack). However, in recent years, demand has shifted to chunk-style, lightmeat packed in brine; this pack held about one-third of the market in 1986 and is growing.[20] U.K. consumers are becoming increasingly sensitive to health considerations, which has led to the rise in brine-packed tuna, and to price considerations, which has led to a rise in chunk-style pack.

[16] Ibid.
[17] Graham Kitson and D.L. Hostis, *The Tuna Market*, Vol.2, (Kuala Lumpur: ADB\FAO INFOFISH Market Studies, 1983), p. 32.
[18] Roy Ellard, "A Review of the World Market for Canned Tuna," *Proceedings of INFOFISH Tuna Trade Conference* (Bangkok: INFOFISH, February 25-27, 1986) p. 92.
[19] Commission staff interview with Michael Dubbelt, Director, Matrico BV, Denpasar, October 2, 1990.
[20] Elsy, "The European and Middle East Tuna Market," p. 96.

Table 4-7

Canned tuna: Production, imports, exports, and supply in selected European countries, 1980-89

(In thousands of metric tons)

Country and item	1981	1982	1983	1984	1985	1986	1987	1988	1989[1]
France:									
Production	23	30	35	38	38	49	49	47	[2]54
Imports	28	30	34	33	22	34	44	51	45
Exports	1	1	2	5	5	6	7	7	[2]7
Supply	50	59	67	66	55	77	86	91	[2]92
Italy:									
Production	49	48	52	59	65	79	84	80	85
Imports	2	3	3	4	3	6	9	9	12
Exports	2	2	2	2	2	2	2	2	0
Supply	49	48	53	61	66	83	91	87	97
Spain:									
Production	42	40	38	41	43	59	62	68	[2]71
Imports	0	0	0	0	0	0	3/	2	0
Exports	12	2	4	4	4	4	7	11	14
Supply	30	38	34	37	39	55	55	55	[2]57
Portugal:									
Production	8	7	7	9	9	12	10	11	14
Imports	0	0	0	0	0	0	0	0	([3])
Exports	1	2	3	3	3	3	3	3	4
Supply	7	5	4	6	6	9	7	8	10
United Kingdom:									
Production	0	0	0	0	0	0	0	0	0
Imports	19	13	18	24	34	33	32	44	61
Exports	0	0	0	0	0	0	0	0	0
Supply	19	13	18	24	34	33	32	44	61
West Germany:									
Production	0	0	0	0	0	0	0	0	0
Imports	14	15	16	19	18	24	29	26	30
Exports	0	0	0	0	0	0	0	0	0
Supply	14	15	16	19	18	24	29	26	30

[1] Preliminary.
[2] Estimated.
[3] Less than 500 metric tons.

Source: GLOBEFISH; Food News, Food and Agriculture Organization of the United Nations.

Table 4-8
Canned tuna: European imports, 1985-89
(In thousands of metric tons)

Market	1985	1986	1987	1988	[1]1989
EC:					
United Kingdom	34	33	32	44	61
France	22	34	44	51	45
West Germany	18	24	29	26	30
Italy	3	6	9	9	12
Portugal	0	0	0	0	[2]
Belgium and Luxembourg	5	6	7	7	7
Netherlands	2	3	5	5	6
Denmark	2	3	3	4	3
Greece	1	1	1	[3]1	[3]1
Ireland	[2]	[2]	1	1	1
Spain	0	0	[2]	2	0
Total, EC	87	110	133	150	166
Other Western Europe:					
Switzerland	[3]4	[3]4	[3]5	[3]5	[3]6
Finland	1	2	4	4	5
Austria	[3]2	[3]2	[3]4	[3]4	[3]3
Sweden	2	3	4	3	5
Norway	[2]	1	1	1	1
Total, other Western Europe	9	12	18	17	21
Total, Europe	78	122	149	167	187

[1] Preliminary.
[2] Not available.
[3] Estimated.

Source: *Seafood 90*, Food News, London, 1990; Food and Agriculture Organization of the United Nations; reports from various U.S. Embassies.

West Germany

The West German market for canned tuna is the most price-conscious in the EC. Consequently, there have been marked shifts in suppliers over time. These shifts occur among import suppliers, since virtually no canned tuna is produced in West Germany. West German imports of canned tuna rose 25 percent during 1986-89 (table 4-8). Traditionally, the West German market has been dominated by flake and tuna-and-vegetable packs. These packs, which are lower in price than other types of packs, account for about 40 percent of the market.[21] However, in recent years, the market has shifted toward solid and chunk packs, as these have generally declined in price. An increasing share of West German imports has been gained by Thai products in recent years because of their price competitiveness.

Channels of Distribution

The channels of distribution for canned tuna in the European market vary by country. Thus, the major European canned tuna markets will be discussed individually.

[21] Elsy, "The European and Middle East Tuna Market," pp. 97-98.

Italy

The distribution system for canned tuna in Italy is well established. Processors generally sell through brokers, with regional advertised brands being prevalent.[22] Retail markups on canned tuna in Italy are currently about 60 percent.[23] Such markups are generally much higher in European markets than in the U.S. market, mainly because of lower product turnover in Europe.

France

As in Italy, the distribution system for canned tuna in the French market is well established. Processors generally sell canned tuna to distributors who then sell to the retail market. Processors may sell their own advertised label, the distributors label, or a house brand for the particular retail outlet. Most canned tuna in France is ultimately sold through supermarket outlets, with

[22] Kitson and Hostis, *The Tuna Market*, p. 41; Richard Elsy, "The European and Middle East Tuna Market;" Linda Fernandez and Linda Lucas Hudgins, "A Summary of International Tuna Markets: Characteristics and Accessibility for Pacific Island Countries," *The Development of the Tuna Industry in the Pacific Islands Region: An Analysis of Options*, David J. Doulman, ed. (Honolulu: East-West Center, 1987).
[23] Commission staff interview with Michael Dubbelt, Director, Matrico BV, Denpasar, Oct. 2, 1990.

the bulk of sales under processors' advertised brands.[24]

The French market is reportedly becoming more open to imports. First, French canners are increasingly buying loins (both cooked and uncooked) in order to save on labor costs. In the canned sector, retail supermarket chains in France are being purchased by Belgian and Dutch firms, which are beginning to distribute canned tuna that has been imported through other EC countries, such as the United Kingdom and the Netherlands. The French tuna industry reportedly is attempting to block this practice by establishing an EC directive that imposes origin restrictions on canned tuna imports as part of the EC 1992 program. Retail markups on canned tuna in France are currently about 60 percent.[25]

United Kingdom

Imports supply virtually the entire U.K. canned tuna market. Traditionally, canned tuna has been marketed by distributors who possess nationally recognized brands to retail outlets. Distributors traditionally preferred to procure import supplies through Japanese trading companies as insurance against risk of defective and poor quality packs. However, the market is becoming increasingly price competitive, and some distributors are dealing directly with foreign suppliers, especially those in Thailand. As a result, brand competition is also increasing, with retail house brands challenging the established distributor brands.[26] Retail markups on canned tuna in the U.K. market currently range between 40 and 50 percent, depending on the pack.[27]

West Germany

Virtually all canned tuna supplies in West Germany are from imports. The bulk of canned tuna imports are sold through brokers to retail outlets. Brand loyalty is not important in the West German canned tuna market, since the market is relatively price conscious. House brands and brokers' brands dominate the market, and these brands may change along with the source of imports.[28] Retail markups on canned tuna in the West German market currently range between 30–60 percent, depending on the pack.[29]

Imports

Total European imports of canned tuna increased markedly during 1986–89. Such imports rose about 53 percent, from 122,000 metric tons in 1986 to 187,000 metric tons in 1989 (table 4–8). The EC is the primary component of the European canned tuna market.

The EC collectively is now the world's largest importer of canned tuna, surpassing the United States in 1986. EC imports of canned tuna rose 51 percent during 1986–89, from 110,000 metric tons the former year to 166,000 metric tons the latter year (table 4–8). In comparison, U.S. imports of canned tuna rose 46 percent during the period and totaled 158,000 metric tons in 1989. The largest EC canned tuna import markets are France, the United Kingdom, and West Germany. Together, these markets accounted for approximately 82 percent of total EC imports of canned tuna in 1989 (table 4–8).

Imports of canned tuna into other Western European markets, although only about a tenth the magnitude of those into the EC, increased 75 percent during 1986–89.

The primary sources of European canned tuna imports are Thailand, the Ivory Coast, the Philippines, Senegal, and Indonesia (table 4–9). These countries accounted for about 80 percent of total European imports of canned tuna in 1989. Thailand's share of the total increased from 36 percent to 42 percent during 1987–89. Imports from Asia are generally concentrated in nonproducing markets (principally the United Kingdom and West Germany), whereas imports from Africa are concentrated in producing markets (particularly France). In addition, there is significant intra-EC trade in canned tuna, with Spain and Italy providing most of the supplies.

Consumption

European consumption of canned tuna increased substantially during 1986–89, fueled mainly by imports into nonproducing markets. Such consumption rose 26 percent during 1986–89 (table 4–4) and reached a level of 386,000 metric tons the latter year. The largest European consuming markets are Italy (accounting for 25 percent of European consumption in 1989), France (24 percent), the United Kingdom (16 percent), Spain (15 percent), and West Germany (8 percent). Together, these five markets accounted for 87 percent of total European consumption of canned tuna in 1989.

Imports have been supplying an increasing share of European canned tuna consumption. In 1986, imports accounted for about 40 percent of consumption. By 1989, this share increased to 48 percent.

[24] Kitson and Hostis, *The Tuna Market*, p. 32.
[25] Dubbelt interview.
[26] Kitson and Hostis, *The Tuna Market*.
[27] Dubbelt interview.
[28] Kitson and Hostis, *The Tuna Market*.
[29] Dubbelt interview.

Table 4-9
Canned tuna: European imports, by major sources, 1987-89

Source	1987	1988	1989
	Quantity (metric tons)		
Thailand	51,704	63,648	78,728
Ivory Coast	27,179	31,705	29,795
Philippines	10,759	12,555	19,534
Senegal	17,799	16,877	15,136
Indonesia	2,591	3,699	7,220
All other	35,400	36,400	39,246
Total	145,432	164,885	189,659
	Share of total (percent)		
Thailand	36	39	42
Ivory Coast	19	19	16
Philippines	7	8	10
Senegal	12	10	8
Indonesia	2	2	4
All other	24	22	20
Total	100	100	100

Note.—Totals may not agree with others in the report owing to different calculating bases.

Source: *Food News*, July 1990; various reports from U.S. Embassies.

Estimates on per capita canned tuna consumption in major European markets in 1987 are provided in the following tabulation (in pounds per capita):[30]

Country	Consumption
Italy	3.3
France	2.4
United Kingdom	1.2
West Germany	0.6

These estimates are somewhat dated, and per capita consumption has increased significantly, as evidenced by the rise in European canned tuna imports in recent years.

The following tabulation shows estimated annual per capita consumption of canned tuna in Europe during 1986-89 (based on data in tables 4-4 and 4-5, in kilograms):

1986	1987	1988	1989[1]
0.86	0.94	0.97	1.06

[1] Estimated.

According to these data, European per capita consumption of canned tuna increased 23 percent during 1986-89. Although these data are approximations, it is believed that they accurately mirror the trend in European consumption during the period.

Prices

Data on European prices of imported canned tuna are presented in table 4-10. These data represent wholesale level prices. In general, prices trended upward from 1986 and peaked in 1988. Prices fell during the first three quarters of 1989 before recovering into 1990. Prices generally are higher for oil pack compared with water pack, and are higher in the Netherlands compared with prices in the United Kingdom and West Germany. Oil packs are predominantly solid style, which commands a higher price than the chunk style that predominates in water packs. As for different market prices, skipjack packs are generally lower priced than yellowfin packs, and the share of skipjack packs is higher in the latter two markets, particularly in West Germany.

Among like pack styles and markets, prices tended to be lower for imports from Thailand compared with those from Indonesia. This difference likely resulted from substantially higher volumes of shipments from Thailand.

Additional data was provided to the Commission on average unit values of U.S. and EC canned tuna imports from various sources.[31] These data are presented in table 4-11. Average unit values (c.i.f. basis) generally were highest for Thailand, followed by Indonesia and the Philippines.

Table 4-11 also shows that price differences (based on average unit values of imports) between the U.S. and EC markets for the above suppliers. The difference between the average unit value of Thai canned tuna exports to the U.S. and EC markets ranged between approximately 2-9 percent during 1986-89. Several U.S. tuna processors have claimed that Thai exporters are able to maintain low prices in the U.S.

[30] Elsy, "The European and Middle East Tuna Market: A View from the Pacific Islands."

[31] Posthearing submission by StarKist Foods, Inc., app. B.

Table 4-10
Canned tuna: Quarterly wholesale prices in selected European markets, 1986-90
(Per standard case)

Year and quarter	Type of pack, origin and market					
	Water pack: Indonesia to:		Thailand to:			Philippines to:
	Nether-lands	West Germany	Nether-lands	West Germany	United Kingdom	Nether-lands
1986:						
1	$20.90	$(1)	$(1)	$(1)	$(1)	$(1)
2	21.06	(1)	(1)	(1)	(1)	(1)
3	21.14	(1)	(1)	(1)	(1)	(1)
4	21.38	(1)	(1)	(1)	(1)	(1)
1987:						
1	21.65	(1)	(1)	(1)	(1)	(1)
2	21.63	(1)	(1)	(1)	(1)	(1)
3	22.33	(1)	(1)	(1)	(1)	(1)
4	23.22	(1)	(1)	22.63	(1)	(1)
1988:						
1	23.60	(1)	(1)	22.00	(1)	(1)
2	23.73	(1)	(1)	(1)	(1)	(1)
3	1/	(1)	(1)	(1)	(1)	(1)
4	23.38	(1)	(1)	(1)	(1)	(1)
1989:						
1	22.75	(1)	(1)	(1)	(1)	(1)
2	21.00	(1)	(1)	18.25	(1)	20.50
3	19.75	(1)	19.00	18.25	(1)	19.00
4	24.00	(1)	22.00	19.50	22.75	22.21
1990:						
1	23.00	(1)	21.75	(1)	(1)	22.00
2	22.50	(1)	21.00	20.00	(1)	23.20
3	23.00	(1)	21.75	18.50	21.00	21.83
	Oil pack: Indonesia to:		Thailand to:			Philippines to:
	Nether-lands	West Germany	Nether-lands	West Germany	United Kingdom	Nether-lands
1986:						
1	$21.90	$(1)	$(1)	$19.22	$(1)	$(1)
2	22.00	(1)	19.25	18.90	(1)	(1)
3	22.14	(1)	(1)	18.80	(1)	(1)
4	22.30	(1)	(1)	(1)	(1)	(1)
1987:						
1	22.65	(1)	(1)	18.80	(1)	(1)
2	22.65	(1)	(1)	18.79	(1)	(1)
3	22.93	(1)	(1)	18.83	(1)	(1)
4	24.22	(1)	(1)	20.00	(1)	(1)
1988:						
1	24.64	(1)	(1)	(1)	(1)	(1)
2	24.80	(1)	(1)	25.50	(1)	(1)
3	(1)	(1)	(1)	23.75	(1)	(1)
4	(1)	(1)	(1)	23.00	(1)	(1)
1989:						
1	23.60	(1)	(1)	21.40	(1)	(1)
2	21.66	(1)	21.00	19.60	(1)	(1)
3	20.75	(1)	20.67	18.66	25.00	(1)
4	24.17	(1)	23.00	21.86	23.75	(1)
1990:						
1	24.00	(1)	22.75	19.50	(1)	(1)
2	23.33	22.68	22.67	19.50	(1)	(1)
3	24.25	19.50	23.50	19.50	(1)	(1)

[1] No data reported.

Source: Compiled from data in various issues of Infofish Trade Highlights.

Table 4-11
Canned tuna: Average unit values of U.S. and EC imports, by selected sources, 1985-89, and difference between U.S. and EC unit values
(Prices in dollars per standard case; differences in percent)

Source and market	1985	1986	1987	1988	1989
Price:					
Thailand:					
U.S	18.48	18.57	18.92	23.67	21.44
EC	19.18	19.37	20.52	24.99	21.83
Philippines:					
U.S	17.37	17.06	16.59	20.90	19.04
EC	20.73	21.13	21.12	21.13	21.62
Indonesia:					
U.S	17.55	17.31	17.40	24.73	17.99
EC	18.42	19.99	19.52	23.77	20.84
Difference:					
Thailand	3.8	4.3	8.5	5.6	1.8
Philippines	19.3	23.9	27.3	1.1	13.6
Indonesia	5.0	15.5	12.2	-3.9	15.8

Source: Posthearing brief of StarKist Foods, Inc., app. B. Data are on c.i.f. basis, calculated from Eurostat and the U.S. Department of Commerce.

market because of higher prices obtained in the European market.[32] Thai exporters counter that canned tuna prices in the European market are higher than in the U.S. market for several reasons, including a higher share of higher priced solid pack styles exported to the EC; a higher share of higher priced yellowfin tuna packed for the EC market; more stringent quality standards in EC markets that require tuna loins to be "double cleaned" (which increases costs and prices); and a higher percentage of relatively lower priced institutional-sized container packs accounted for in the U.S. market. Thai exporters also claimed that EC prices generally follow U.S. prices for canned tuna; thus, it is in the best interest of Thai exporters to sell at the highest possible price in each market.[33]

Market Barriers

The European canned tuna market poses significant barriers to entry to imports. Appendix G shows EC tariff rates for tuna products. Canned tuna imports generally are subject to a duty of 24 percent ad valorem, a level that is about twice that in the U.S. market. European imports of canned tuna are also subject to health and sanitary and labeling requirements of the various European markets. A proposed EC regulation would standardize these requirements.[34]

In addition to the above requirements, U.S. and foreign tuna industry representatives have stated that substantial nontariff barriers affect the entry of canned tuna into the EC market. These nontariff barriers generally are encountered in the EC markets that possess domestic canned tuna industries, principally France and Italy. According to U.S. and foreign canned tuna industry representatives, the French market is virtually closed to imports from countries other than certain Lome convention countries, former French colonies, and countries with tuna canneries with French equity interests.[35]

According to one U.S. tuna processor, France maintains an import quota on canned tuna.[36] An EC Council Regulation No. 288/82, titled "On Common Rules for Imports," provides for relief measures against imports. These measures include a provision for a "negative list" of products subject to restrictions at the national level (Annex I) as well as for a "surveillance" list of products subject to import licensing requirements (Annex II). According to Annex I, Italy restricts imports of prepared or preserved (including canned) tuna from Japan, while France maintains partial restrictions on such imports.[37] According to Annex II, prepared or preserved (including canned) tuna is not subject to surveillance by any EC member.

One Thai exporter of canned tuna reported encountering a barrier in France whereby the permitted port of entry was distant from the location where the product was required to be inspected, thus making shipments economically unfeasible.[38]

[32] Testimony of Robert Hetzler, Vice President, Star Kist, transcript of public hearing, p. 177. Also, this claim was made during several Commission staff interviews with officials of U.S. tuna processing firms.
[33] Commission staff interviews with officials of several Thai tuna processing firms during the week of Sept. 24, 1990.
[34] COM(89) 654 final, submitted by the Commission on Feb. 12, 1990, Official Journal of the European Communities, No. C 84/58, Apr. 2, 1990.
[35] These include mainly the Ivory Coast, Senegal, and the Seychelles. Imports from these countries generally enter free of duty. Post hearing brief of StarKist Seafood Company, Sept. 14, 1990, p. 5.
[36] Ibid.
[37] No further information is provided in Annex I.
[38] Commission staff interview with officials of a major Thai canned tuna exporter during the week of Sept. 24, 1990.

A general barrier to entry cited by Thai and Indonesian canned tuna exporters was the technical barrier posed by the large variation in can sizes and pack styles that are demanded in European markets, particularly France and Italy.[39] And, the relatively closed distribution systems in these markets poses further entry barriers. Asian canned tuna exporters reportedly are making efforts to improve their distribution networks in European markets.[40]

On a related issue, the French tuna industry is reportedly attempting to persuade the EC Commission to impose origin restrictions on canned tuna imports whereby such imports cannot be entered into one EC country, such as the United Kingdom, and then shipped to another, such as France.[41] Canned tuna exporters in Thailand generally are concerned about the possible effects of standardized import requirements under the so-called "EC 1992" market unification.[42]

Exchange Rates

Several major canned tuna exporters stated that exchange rates between the U.S. dollar and major European currencies play a significant role in determining the profitability of their exports.[43] In general, the U.S. dollar is the currency of choice for world trade in tuna. As a result, exchange rate movements between the dollar and the currencies in major European markets affect the profits to exporters and, to a lesser degree, plays a role in their marketing decisions. However, the degree of this effect is variable, and other factors (such as contract arrangements and long-term market strategies) generally play a superior role to exchange rate fluctuations in export marketing decisions.

Table 4-12 shows annual exchange rates between the U.S. dollar and the currencies of major European canned tuna import markets (as well as the ECU) during 1986-1990. In general, the U.S. dollar declined vis-a-vis these currencies during the period. This situation increased the attractiveness of the European market to canned tuna exporters, particularly those in Thailand. The baht is pegged to the U.S. dollar, and movements between the dollar and European currencies affect Thai tuna exporters accordingly. Thai exporters have increased European market share in the face of generally declining prices, partly as a result of the declining dollar.[44]

EC Fishery Agreements With Nations and Island States in the Indian Ocean and Elsewhere

Fishery agreements between the European Economic Community (EEC) and nations and island states in the Indian Ocean and elsewhere typically give Community vessels the right to fish within the 200-mile exclusive economic zone (EEZ) of the foreign partner. In return for these fishing privileges, the EEC agrees to improve the fishing industry of the foreign partner, either through financial or educational programs. The agreements specify such things as the number of vessels allowed within the EEZ, the total annual catch allowed within the EEZ, and the form of EEC payment. Most of the agreements are effective for three years, with the option to extend the agreement at the end of the three-year period on a yearly basis. The EEC has made fishery agreements that concern the tuna industry with nations in the Indian Ocean and with nations on the coastline of Africa. A short description of a few of these agreements follows.

[39] Commission staff interview with officials of Thai canned tuna exporters during the week of Sept. 24, 1990 and with officials of Indonesian canned tuna exporters on Oct. 2, 1990.

[40] According to an item in a recent issue of *Food News* (Oct. 19, 1990), Unicord (Thailand) is planning to acquire two European tuna companies. In addition, major Thai and Indonesian exporters have been improving their distribution agreements in various European markets in recent years.

[41] Commission staff interviews with official of Thai tuna industry and government officials during the week of Sept. 24, 1990. Also, post hearing brief of Starkist Seafood Company, Sept. 14, 1990, p. 6.

[42] Commission staff interviews with Thai tuna industry and government officials during the week of Sept. 24, 1990.

[43] Commission staff interview with officials of Thai canned tuna exporters during the week of Sept. 24, 1990 and with officials of Indonesian canned tuna exporters on Oct. 2, 1990.

[44] See also "Currency Boost for Tuna Growth," *Food News Europe '90*, Food News, Kent, September 1990.

Table 4-12
Nominal exchange rates of selected European currencies in U.S. dollars, 1986-89 and January-August 1990

(In U.S. dollars)

Currency	*1986*	*1987*	*1988*	*1999*	*January-August 1990*
British pound	1.47	1.64	1.78	1.64	1.90
Deutsche mark	.46	.56	.57	.53	.64
Dutch guilder	.41	.49	.51	.47	.56
ECU	.98	1.15	1.18	1.10	1.32

Source: Calculated from data in International Financial Statistics, October 1990, International Monetary Fund, Washington.

Such an agreement has been reached with the Republic of Seychelles. The agreement went into effect on March 16, 1984, and is still valid. The terms of the agreement were approved for an initial period of three years, and extended for two-year periods following the expiration of the three-year period. Seychelles agreed to grant licenses to 27 Community tuna vessels, with the understanding that no more than 18 of these vessels would be fishing at one time. The amount of tuna available off the coast of Seychelles was not known at the time of the first drafting of this agreement. Consequently, the amount of tuna Community vessels were permitted to catch was not set at a specific number. The owners of the vessels were to pay 20 ECU per ton of tuna caught to the Government of Seychelles, with a three-year ceiling of 3,000,000 ECU. In return for the right to fish within Seychelles' 200-mile EEZ, the EEC contributed 250,000 ECU towards "a scientific programme in Seychelles to gain greater knowledge of fish stocks concerning the region of the Indian Ocean surrounding the Seychelles islands."[45]

An identical agreement (with the exception of an EEC contribution of 350,000 ECU towards Malagasy fisheries research) was reached in February 1986 with the Democratic Republic of Madagascar. It was amended, however, in October 1989. The number of Community tuna vessels granted licenses increased from 27 to 45. The amount of tuna allowed to be caught in one year was set at 12,000 tons. As the number of vessels and the tuna catch increased, so did the EEC contribution to Malagasy fishery studies. A sum of 600,000 ECU was to be paid to the Malagasy treasury to finance Malagasy scientific programs.

There is also an agreement between the EEC and Gabon that was reached on February 26, 1988. In return for $3.5 million dollars, EEC vessels are allowed to fish off the coast of Gabon. In addition to this, the EEC will pay $0.8 million toward Gabonese scientific programs. This agreement will last for a 3-year period.

An agreement has also been reached between the EEC and the Republic of Guinea-Bissau. It was signed on February 27, 1980 and later amended in 1983, 1986, and again in 1987. The EEC vessels will pay 35,000 ECU to the Government of Guinea-Bissau at the beginning of each year. This fee will cover the initial 1,700 tons of tuna caught in that year. There is, however, no limit on the amount of tuna allowed to be landed by the EEC vessels. If the amount of tuna caught in one year exceeds this amount, the EEC will pay an additional 20 ECU per ton of tuna caught.

On March 1, 1988, the EC reached an agreement with Morocco allowing Spanish and Portuguese fishermen access to Moroccan waters. Under the agreement, the EC will pay the Moroccan Government 70 million ECU a year in return for fishing rights for EC vessels with an aggregate capacity of approximately 100,000 gross registered tons (GRT) for 4 years. The agreement does not stipulate a maximum catch for any species; however, provision is made for targeted fishing of tuna, swordfish, squid, octopus and sponge.[46] In addition, Morocco will have access to the EC market for its fishery and agricultural commodities.

On August 23, 1988, the EC and the Republic of Comoros (an island group off SE Africa between Mozambique and Madagascar) signed a 3-year fishing agreement permitting vessels flying the flags of member states of the EC to catch 6,000 metric tons of tuna annually in the Indian Ocean around the Comoros islands. In exchange, the EC will reimburse the Comoros 300,000 ECU per year. In addition, the EC will provide 500,000 ECU over a 3 year period to assist the financing of Comorian scientific and technical programs to evaluate the fishery resources in Comorian waters.[47]

An agreement effective from February 29, 1988 to February 28, 1990 was signed between the EC and the Republic of Senegal. This agreement allowed vessels (including 35 tuna longliners and 48 tuna seiners) of EC member states to fish in Senegal's waters. In return, the EC pays 22.9M ECU to Senegal. The total allowable catch of fish, cephalopods and shrimp was fixed at 30,240 metric tons per year. As part of the agreement, a total of 46,000 tons of tuna caught by the EC fleets must be landed at Senegalese ports . The EC will also contribute 550,000 ECU to further Senegal's fisheries scientific development.[48]

The EC and Guinea have a 3 year agreement (effective until June 1992) establishing fishing rights for EC member states' vessels and financial compensation to Guinea. The agreement allows up to 9,000 tons of fish a month for freezer trawlers, plus fishing rights for 40 freezer tuna seiners and 430 longliners. Up to 10 licences can be granted to pole-and-line tuna vessels. Financial compensation to Guinea amounts to 6million ECU. Shipowners fees are 20 ECU per ton per year for tuna vessels and longliners. An additional 500,000 ECU will be contributed to Guinea to further their fisheries scientific and technical development.[49]

[45] Official Journal No. L 79, 1984.

[46] "EEC/Morocco accord," *INFOFISH*, Mar. 1988, p. 7.

[47] "EEC and Comoros sign agreement", *World Fishing*, Oct. 1988, p. 51.

[48] "EEC signs fishing licence agreement with Republic of Senegal for a total of 30,240 grt, *World Fishing*, Apr 1989, p. 34.

[49] "EC and Equatorial Guinea establish fishing rights up to 1992," *World Fishing*, Aug. 1989, p. 8.

Chapter 5
Other Foreign Tuna Industries

The Tuna Industries of Asia

The Asian region has become a major component in the global tuna market. Asian countries are among the leading producers and exporters of raw and canned tuna, both from traditional and newly developed tuna producing nations. Furthermore, the prospects for additional growth are favorable. The traditional Asian tuna producers are Japan and Taiwan. More recent producers include Thailand and Indonesia. During recent years, major shifts have occurred in the relative importance of each country individually and of the region as a whole regarding the world tuna market. A detailed description of the industries in Thailand, the world's leading tuna exporter, and Indonesia, the fastest growing exporter, follows, as well as a short discussion of the tuna industries in other Asian 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 71 percent of the quantity and 69 percent of the value of total U.S. imports in 1989, compared with 8 percent of the quantity and value of total U.S. imports in 1979 (table 3-19). Moreover, U.S. tuna processors have accounted for a large portion of U.S. canned tuna imports from Thailand since 1985. This relationship began as contractual arrangements for canned tuna supplies between Thai and U.S. processors during a period of restructuring in the U.S. industry. Since then, a Thai tuna processor has purchased a major U.S. processing firm, and more than one Thai tuna processor has been providing U.S. processors with tuna loins, further reinforcing the ties between the U.S. and Thai tuna industries.[1]

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 United States-Thai relationship in tuna trade is one of the most significant issues concerning the role of the U.S. tuna industry in world trade. In addition, the relatively recent growth of the European market has provided an opportunity for Thai tuna exporters to diversify their markets, particularly those exporters without arrangements with U.S. tuna marketing concerns.

Tuna has been harvested on a small scale in Thailand for many years. Although the growth in world tuna trade has stimulated increased harvesting effort, because of limited resources, 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, that 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 it remains almost exclusively export-oriented.

Number and Location of Producers

According to officials of the Thailand Department of Fisheries, tuna fishing effort has increased substantially since the previous Commission tuna study. Specific data are not available on the number of tuna vessels in Thailand. However, there are approximately 1,250 small purse seiners in Thailand, fishing mostly for tuna and other pelagic species.[2] Many of these Thai purse seiners are involved in joint-ventures with Indonesia, the Maldives, and the Philippines[3] In comparison, during the previous Commission tuna study, Thai industry sources estimated the size of the tuna fleet in 1985 to be about 200 small purse seiners, operating primarily within the Thai 200-mile fisheries jurisdiction in the Gulf of Thailand and the Andaman Sea.

Currently some 22 tuna-processing (canning) establishments in Thailand exist,[4] a somewhat smaller number than the 25 to 30 establishments reported in the previous Commission study. The maturity of the Thai tuna canning industry and ever-increasing competition have forced marginal firms to stop producing tuna during the past several years. Although the number of Thai tuna canners is large relative to the the number in the United States, the concentration of output in Thailand is similar to that in the United States. According to a submission by the Thai Food Processors' Association, the top three firms account for 70 to 75 percent of the nation's canned tuna production: Unicord Investment Co., Ltd., and Thai Union Manufacturing Co., Ltd, each account for approximately 25 to 30 percent; and Ta Kong Food Industries Co., Ltd. accounts for about 10 to 15 percent.[5] Other significant Thai tuna canners (at about half the size of Ta Kong) include Tropical Canning (Thailand) Co., Ltd., Pataya Food Industries, Co., Ltd., Kingfisher Holdings Ltd.,[6] and B&M Products, Ltd. Several other smaller firms account for the remaining share of the industry.

[1] For a more detailed discussion, see the previous section on the U.S. industry.

[2] Commission staff interview with Bung-Orn Saisithi, Deputy Director-General, Thailand Department of Fisheries, Sept. 26, 1990.

[3] According to the Thailand Ministry of Fisheries, a problem has arisen where Thai seiners are being seized in Malaysian waters in transit from the fishing grounds to Thailand.

[4] Submission by counsel for the Thai Food Processors Association, Sept. 14, 1990, p. 5.

[5] Ibid.

[6] Kingfisher Holdings Ltd. was formed from Safcol (Thailand) Limited in 1989 after a license and distribution arrangement with Safcol Holdings Limited of Australia was terminated.

Data obtained by Commission fieldwork suggests that this concentration may be somewhat lower. The top three firms are estimated to account for about two-thirds of production, the top eight firms about 85 percent, and the top 20 firms 100 percent.[7]

The bulk of Thai canned tuna processing is accounted for by the larger firms, which are located in the general vicinity of Bangkok. According to Thai industry officals, there are five tuna canneries, accounting for about three-quarters of the total Thai canned tuna production, located in the Samut Sakhon area southwest of Bangkok.[8] The remaining canneries are somewhat scattered to the south along the coast.

Capacity utilization rates in Thai tuna processing are difficult to determine, largely because most of the plants are easily convertible to canning of other (nontuna) products and because capacity levels are highly dependent on the availability of frozen tuna supplies and labor. 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.

According to data provided to the Commission by Thai tuna processors, it is estimated that the current productive capacity is about 1,900 metric tons per day (whole fish input basis), whereas current production is about 1,650 metric tons per day, giving a capacity utilization rate of about 87 percent.[9]

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. Indeed, the contractual and equity relationships between U.S. and Thai tuna packers have directly led to this situation. The principal differences between Thai and U.S. production processes lie in the degree of labor intensity and the application of technology at certain stages of the production process. In general, Thai producers utilize a substantially higher labor content in their tuna production compared with U.S. producers. This is mainly a result of widely different wage rates between the two countries. Specifically, more labor is used in handling frozen tuna, moving the cleaned loins to the can filling machines, in filling the retort baskets, and in the labeling and packing operations. In some canneries, each can is individually cleaned after removal from the retort. With respect to the overall cost of processing tuna in Thailand, a general breakout of the share of total costs accounted for by major cost items was provided by the Thai Food Processors' Association (TFPA) and the Industrial Finance Corporation of Thailand (IFCT). The following tabulation shows the cost structure for tuna processing in Thailand provided by these organizations (data from the U.S. Embassy in Bangkok, in percent):

TFPA Item	*Share*
Fish	68-78
Cans	6.5-15
Labor	5-6
Labels and cartons	1.5-2
Overhead and administration	9.5-10.5

IFCT Item	*Share*
Fish, cans, spices	80.4
Labor	5.5
Interest	3.6
Energy	1.7
Miscellaneous	8.8

The share of total production costs accounted for by frozen tuna varies substantially according to fish prices. The cost of frozen tuna to Thai processors, in turn, varies by species and by country of origin. Unlike U.S. processors, Thai processors prefer smaller species of tuna, such as skipjack and tongol, which have traditionally been supplied by vessels in local Thai waters, the western Pacific, and the Indian Ocean and have therefore constituted the main supply of tuna to their plants. The skills of Thai tuna cleaners are better suited for small fish; the relatively high level of labor involved in cleaning 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. Generally speaking, it is quality differences that explain relative prices for frozen tuna by country of origin. 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.

Tongol is a preferred species for canning because of its light color and its taste. Tongol is similar in these characteristics to albacore; attempts have been made in the past to allow tongol to be labeled as white-meat tuna in the U.S. market. Thai industry sources report that canned tongol commands a premium of $1.50-2.00 per case over other canned lightmeat tuna; conse-

[7] Data obtained through Commission interviews with Thai tuna processors during the week of Sept. 24, 1990.
[8] Commission staff interview with officials of Unicord Co. Ltd., Sept. 24, 1990.
[9] Data provided to Commission staff during fieldwork in Thailand during the week of Aug. 24, 1990.

quently, frozen tongol prices are much higher than the other local species, euthynnus.

The following tabulation shows average prices of domestically caught frozen tuna in Thailand (in dollars per metric ton, data from the Thai Food Procesors' Association):

Year	Price	
	Tongol	Euthynnus
1986	799	586
1987	972	645
1988	1,107	684
1989	961	545

Prices vary as well according to the size of fish. In 1989, one Thai tuna processor reported the prices shown in the following tabulation (data from a submission by the Thai Food Processors Association, in dollars per metric ton):

Species	Size range	Price
Skipjack	0-3 lb.	560
" "	3-4 lb.	680
" "	4-7.5 lb.	840
" "	7.5 lb. up	890
Yellowfin	7.5-20 lb.	1,017
" "	20 lb. up	1,130

Thai tuna processors enjoy a substantial labor cost advantage compared with U.S. processors. Thai wage rates are quite low compared with U.S. wage rates: a starting cannery worker in Thailand earns 90 baht (about $3.50) for an 8-hour workday, a minimum wage set by the Thai government.[10] Several Thai industry sources reported that the average daily wage in tuna canneries is about 100 baht (about $3.90); nonwage labor costs for processors add another 30 baht (about $1.18) per worker per day, for a daily labor cost of about $5.10 per worker. Furthermore, minimum wages in remote areas are even lower and range from 74-84 baht/day ($2.90-3.30).[11]

Although wage rates are considerably lower, Thai processors assert that labor productivity in Thai tuna processing is considerably lower than in the United States, partially offsetting the cost advantage of low wage rates. Several Thai processors reported that the number of man hours required to produce a case of tuna was 2 to 3 times greater than the average U.S. levels.[12] This results from a number of factors, including a higher degree of labor intensity in Thai canneries, the greater amount of labor utilized in double cleaning of loins for higher quality export markets in Canada and Europe, the greater variety of pack types for a large number of export markets, and the generally lower scale of production compared with U.S. processors. Several Thai industry officials stated that their firms are attempting to lower labor intensity and have been taking steps to increase mechanization in their plants.

[10] Commission staff interviews with several Thai tuna company officials in Bangkok during the week of Sept. 24, 1990.

[11] Submission by counsel for the Thai Food Processors' Association, Sept. 14, 1990, p. 10.

[12] Commission staff interviews with officials of several Thai tuna companies in Bangkok during the week of Sept. 24, 1990.

Financial Experience

Industry-wide data on the financial experience of the Thai canned tuna industry are not available. However, information from various sources suggest that the industry generally has experienced positive net returns during the 1980s. Indeed, the relatively swift expansion of the industry is but one indication of this. During the previous Commission investigation, the Thai tuna canning industry claimed that profit margins were in the range of 1 to 2 percent (net return on sales).[13] In a recent published article, the largest Thai tuna firm reportedly experiences profit margins in the range of 3 to 4 percent, with an additional 2 percent margin from the sale of tuna byproducts.[14] The article also reports that the firm experienced positive net profits during 1987 and 1988. In addition, other major Thai tuna canners recently reported that they have experienced positive net returns in recent years.[15]

Production and Trade

Although the harvesting sector of the Thai tuna industry is relatively small, its output has been growing in recent years, as shown in the following tabulation (data from the U.S. Embassy in Bangkok, in metric tons):

Period	Harvest
1982	49,307
1983	85,820
1984	76,838
1985	86,881
1986	93,772
1987	102,619
1988	146,375

The Thai tuna harvest nearly tripled during 1982-88. The tuna species harvested by Thai fishermen are tongol and euthynnus; it is estimated that approximately 60 to 70 percent of the catch is tongol and 30 to 40 percent euthynnus.[16] Of the 1988 total of 146,375 metric tons caught by Thai-flag vessels, 97,925 metric tons was tongol and 53,450 metric tons was euthynnus.[17]

[13] U.S. International Trade Commission, *Competitive Conditions in the U.S. Tuna Industry*, USITC Publication 1912, Oct. 1986, p. 86.

[14] Article in the *Bangkok Post*, May 14, 1990, p. 24. Article reproduced in post hearing brief of StarKist Seafood Co., app. D.

[15] Commission staff interviews with officials of the Thai tuna canning industry during the week of Sept. 24, 1990.

[16] Submission by counsel for the Thai Food Processors' Association, Sept. 14, 1990, p. 7.

[17] Commission staff interview with Bung-Orn Saisithi, Deputy Director-General, Thailand Department of Fisheries, Sept. 26, 1990.

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 (raw) market. In addition to the fish catch in local waters, the Thailand Department of Fisheries reported that a substantial amount of tuna was harvested by joint venture operations.

Imports provide the bulk of Thailand's supply of frozen tuna. The following tabulation shows Thai imports of frozen tuna during 1986–89 (in metric tons, data submitted by the Thai Food Processors' Association):

Year	Imports
1986	205,378
1987	195,246
1988	275,268
1989	324,688

Thai imports of frozen tuna increased 58 percent during the period, reflecting the substantial growth of the canned tuna industry. Table 5-1 shows Thai imports of frozen tuna, by source, during 1988 and 1989. In 1989, Taiwan was the leading supplier of Thai imports of frozen tuna, accounting for 19 percent of the total. Thai imports from the United States was relatively stable at about 40,000 metric tons annually during the period. The U.S. fleet began supplying frozen tuna to Thailand in 1984 as a result of copacking arrangements between U.S. and Thai tuna packers. The level of such supplies began at about 30,000 metric tons in 1984 and has leveled to about 40,000 metric tons currently. Thai tuna packers have been diversifying their sources of frozen tuna supplies in recent years because of substantial increases in raw material requirements and in order to lower risk in supply and price fluctuations.

Thai industry estimates of the industry's production of canned tuna during 1986–89 are presented in the following tabulation (data submitted by the Thai Food Processors' Association, in metric tons):

Year	Production
1986	141,950
1987	144,980
1988	200,960
1989	225,108

Thai production of canned tuna increased 59 percent during 1986–89; such production increased 39 percent in 1988 alone. Factors which influenced the escalation in production during 1988 and 1989 include the purchase of Bumble Bee Seafoods by Unicord, a rise in copacking orders from other U.S. tuna processors, and a substantial growth in the European canned tuna export markets, particularly the United Kingdom and West Germany. Although data are not available on the type of pack, production is believed to be mostly water pack. Virtually all of Thailand's exports to the United States, which accounts for about one-half of total exports, is packed in water. In addition, water pack products are gaining in popularity in Europe, which is Thailand's second leading export 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.[18]

Virtually the entire Thai output of canned tuna is exported, since the domestic market is insignificant. Thai tuna producers report that consumers' preferences and lifestyles that favor convenience need to develop before the domestic demand for canned tuna becomes a factor. In addition, canned tuna is a relatively high-price food item, and increases in consumption depend on rises in disposable incomes in Thailand.[19] The domestic market reportedly accounts for about one percent of production.[20]

[18] Commission staff interviews with Thai tuna processors during the week of Sept. 24, 1990.
[19] Ibid.
[20] U.S. Department of State, report from the U.S. Embassy, Bangkok, Aug. 21, 1990.

Table 5-1
Frozen tuna: Thai imports, by sources, 1988–89
(In metric tons)

Source	1988	1989
Taiwan	32,232	63,303
Japan	71,382	48,458
United States	40,486	40,291
France	17,625	29,222
Singapore	16,750	25,438
Spain	4,862	24,160
Seychelles	13,633	17,686
Maldives	15,851	17,109
Indonesia	16,304	13,954
Korea	13,275	11,871
All others	30,268	31,950
Total	272,668	323,442

[1] Not available.

Source: U.S. Department of State, report from the U.S. Embassy, Bangkok, Aug. 21, 1990.

Thai exports of canned tuna are shown in table 5-2. Such exports increased 59 percent during 1986-89. Although the major market continued to be the United States during the period, the U.S. share of total Thai canned tuna exports shrunk from 56 percent in 1986 to 45 percent in 1989. Export market shares increased for the EC and Scandanavian countries as well as for smaller markets in Asia (Japan, Malaysia), Australia, and the Middle East.

In addition to producing and exporting canned tuna, Thailand has increased the production and export of tuna loins. Although loining is relatively new, Thailand has aggressively developed markets in the United States, Japan, and Europe. Thai packers currently export frozen, cooked loins to these markets, as well as frozen uncooked loins to Japan and certain European countries (mainly France). Trade sources report that certain processors, especially in the United States and Europe, can realize substantial cost savings by importing loins.[21] Consequently, such exports are expected to increase substantially in coming years. Presently, Unicord Co., Ltd. is shipping frozen loins from its cannery to a plant operated by its subsidiary Bumble Bee in California which is dedicated to processing loins. In addition, Thai Union has recently built a new plant that is dedicated, in large part, to producing loins for export.

Thai tuna exporters stated that the U.S. tariff rate quota on canned tuna packed in water affects production and marketing decisions in the Thai tuna industry.[22] After the quota is filled, Thai exporters claim they have to lower their price 6.5 percent because their buyers will not absorb any of the duty increase. As a result, the Thai industry scrambles for frozen tuna during the last quarter of the year in order to pack for orders to be entered in the U.S. early the next year to take advantage of the below-quota tariff rate. This causes short-term fish prices to increase, which significantly raises production costs. In addition, this causes labor disruptions, as more workers are hired to increase production and are then laid off after the quota is filled. For canneries that export a greater share to Europe, this situation does not have as much of a direct effect on them. However, according to Thai canned tuna exporters, European customers often wait until February or March to buy from them because the customers anticipate that the Thai canners will have excess inventories after the tariff quota in the U.S. is filled and prices likely will drop.

[21] Commission staff interviews with several Thai tuna processors during the week of Sept. 24, 1990.

[22] Commission staff interview with members of the Thai Food Processors Association, Bangkok, Sept. 25, 1990.

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 mainly consists of activities regarding tuna harvesting and various forms of assistance available to Thai exporters. Indeed, a Thai industry official addressed the issue of subsidies and dumping at an international tuna conference, asserting the absence of these practices in the Thai canned tuna industry.[23]

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. The resource is believed to be substantially fished to capacity, and little long-term growth in tuna harvests within Thai waters is likely to occur. Although there are no catch limits on tuna, there is a minimum fish size limit for all fish species. Officials of the Thailand Department of Fisheries believe the nation's tuna resources are fully exploited, and are not encouraging any further growth of the tuna fleet within Thai waters. However, efforts are currently being made to build or obtain a large tuna purse seine vessel to train Thai fishermen in order to develop a distant water tuna purse seine fleet to supply Thai tuna canners.[24] In May 1990, the Thai Government approved a plan to build a tuna purse seiner in the 800 to 1,000 ton range; a budget of 400 million baht (approximately $15 million to $16 million) will be provided.[25]

The Thai Government also assists in negotiating joint ventures with other countries. Joint ventures with other nations, particularly in the Indian Ocean region, are increasing.

The Board of Investment (BOI) provides assistance to various Thai industries, including the tuna canning industry. The BOI administers two types of programs—nontax incentives and tax incentives. Tax incentives include tax (duty) exemptions on imported machinery, income tax holidays, and tax (duty) exemptions on imported raw materials. The BOI currently is considering the elimination of the duty exemptions on imported machinery since Thailand is reducing tariffs from 30 percent to 5 percent ad valorem.[26] Income tax holidays are no longer in effect for the tuna industry—this expired in 1987 when the Government determined there was sufficient capacity in the industry and no need for further

[23] Dumri Konuntakiet, "Trade in Canned Tuna: A Factual Account," *Proceedings of INFOFISH Tuna Trade Conference* (Bangkok: INFOFISH, Feb. 25-27, 1986), p. 144.

[24] Commission staff interview with Bung-Orn Saisithi, Deputy Director-General, Thailand Department of Fisheries, Sept. 26, 1990.

[25] U.S. Department of State, report from U.S. Embassy, Bangkok, Aug. 21, 1990.

[26] Raw tuna is duty free.

Table 5-2
Canned tuna: Thai exports, by markets, 1985-89

Market	1985	1986	1987	1988	1989
	Quantity (metric tons)				
North America:					
United States	59,249	79,466	96,002	100,728	101,413
Canada	3,002	8,493	12,881	6,415	10,716
Total, North America	62,251	87,959	108,883	107,143	112,129
Europe:					
EC:					
United Kingdom	5,590	19,789	19,673	30,441	38,527
West Germany	7,415	11,241	12,675	15,435	14,274
Netherlands	1,569	3,551	4,712	5,016	5,762
Denmark	1,311	2,522	2,028	3,186	3,481
Belgium	306	548	670	[1]1,215	[1]1,015
Italy	54	257	478	[2]	[2]
France	59	219	138	[2]	[2]
Total, EC	16,304	38,127	40,374	55,293	63,059
Other Europe:					
Finland	1,103	1,868	3,596	5,436	4,265
Sweden	982	1,551	2,817	3,138	4,301
Switzerland	386	222	290	3,173	3,864
Total, other Europe	2,471	3,641	6,703	11,747	12,430
Total, Europe	18,775	41,768	47,077	67,040	75,489
Asia:					
Malaysia	2,759	3,212	3,347	3,407	7,265
Singapore	430	2,015	1,731	2,553	1,887
Japan	336	989	1,219	2,614	3,930
Hong Kong	38	0	318	[2]	[2]
Total, Asia	3,563	6,216	6,615	8,574	13,082
Oceania:					
Australia	1,635	2,548	3,468	4,919	6,530
New Zealand	23	104	68	[2]	[2]
Total, Oceania	1,658	2,652	3,536	4,919	6,530
All other	887	3,164	5,869	13,291	17,893
Total, world	87,134	141,759	171,980	200,967	225,123
	Value (1,000 dollars)				
North America:					
United States	115,254	156,337	148,046	251,900	235,700
Canada	6,746	20,972	35,143	21,900	37,800
Total, North America	122,000	177,309	183,189	273,800	273,500
Europe:					
EC:					
United Kingdom	10,657	41,122	43,447	81,100	88,500
West Germany	13,835	20,232	22,649	33,000	27,400
Netherlands	3,367	7,590	10,724	13,100	14,100
Denmark	2,638	5,224	4,240	7,800	7,700
Belgium	575	1,008	1,283	[2]	[2]
Italy	99	481	933	[2]	[2]
France	519	153	354	[2]	[2]
Total, EC	31,690	75,810	83,630	135,000	137,700
Other Europe:					
Finland	1,937	3,656	7,239	12,200	12,700
Sweden	1,906	3,375	6,347	8,400	10,500
Switzerland	908	513	679	[2]	[2]
Total, other Europe	4,831	7,544	14,265	20,600	23,200
Total, Europe	36,521	82,554	97,895	155,600	160,900
Asia:					
Malaysia	5,932	6,625	8,157	9,000	19,100
Singapore	937	4,531	4,071	7,000	4,700
Japan	329	1,417	2,871	8,000	11,500
Hong Kong	84	222	673	[2]	[2]
Total, Asia	7,282	12,795	15,772	24,000	35,300

See footnotes at end of table.

Table 5-2—Continued
Canned tuna: Thai exports, by markets, 1985-89

Market	1985	1986	1987	1988	1989
	Quantity (metric tons)				
Oceania:					
Australia	2,946	5,130	7,189	13,100	14,100
New Zealand	19	229	180	(2)	(2)
Total, Oceania	2,965	5,359	7,369	13,100	14,100
All other	1,783	5,623	12,795	46,500	70,800
Total, world	170,551	283,640	317,020	513,000	537,300
	Value (1,000 dollars)				
North America:					
United States	$1946	$1968	$1543	$2501	$2325
Canada	2248	2470	2729	3414	3528
Total, North America	1960	2016	1683	2556	2440
Europe:					
EC:					
United Kingdom	1907	2079	2209	2665	2298
West Germany	1866	1800	1787	2138	1920
Netherlands	2146	2138	2276	2612	2448
Denmark	2013	2072	2091	2449	2213
Belgium	1880	1840	1915	(2)	(2)
Italy	1834	1872	1952	(2)	(2)
France	2594	2370	2566	(2)	(2)
Total, EC	1944	1989	2072	2442	2184
Other Europe:					
Finland	1757	1958	2014	2215	2978
Sweden	1941	2177	2254	2677	2442
Switzerland	2353	2311	2342	(2)	(2)
Total, other Europe	1956	2072	2129	1754	1866
Total, Europe	1946	1977	2080	2321	2131
Asia:					
Malaysia	2151	2063	2438	2642	2630
Singapore	2180	2249	2352	2742	2491
Japan	983	1433	2356	3061	2927
Hong Kong	2211	2156	2117	(2)	(2)
Total, Asia	2044	2059	2385	2799	2698
Oceania:					
Australia	1802	2014	2015	2664	2160
New Zealand	827	2202	2648	(2)	(2)
Total, Oceania	1789	2021	2084	2663	2159
All other	2011	1778	2181	3499	3975
Total, world	1958	2001	1844	2553	2387
	Unit value (Per metric ton)				
North America:					
United States	$1946	$1968	$1543	$2501	$2325
Canada	2248	2470	2729	3414	3528
Total, North America	1960	2016	1683	2556	2440
Europe:					
EC:					
United Kingdom	1907	2079	2209	2665	2298
West Germany	1866	1800	1787	2138	1920
Netherlands	2146	2138	2276	2612	2448
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France	2594	2370	2566	(2)	(2)
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New Zealand	827	2202	2648	(2)	(2)
Total, Oceania	1789	2021	2084	2663	2159
All other	2011	1778	2181	3499	3975
Total, world	1958	2001	1844	2553	2387
	Unit value (Per standard case)				
North America:					
United States	$17.12	$17.32	$13.58	$22.01	20.46
Canada	19.78	21.74	24.02	30.04	31.05
Total, North America	17.25	17.74	14.81	22.49	21.47
Europe:					
EC:					
United Kingdom	16.78	18.30	19.44	23.45	20.22
West Germany	16.42	15.84	15.73	18.81	16.90
Netherlands	18.88	18.81	20.03	22.99	21.54
Denmark	17.71	18.23	18.40	21.55	19.47
Belgium	16.54	16.19	16.85	(2)	(2)
Italy	16.14	16.49	17.18	(2)	(2)
France	22.83	20.86	22.58	(2)	(2)
Total, EC	17.11	17.50	18.23	21.49	19.22
Other Europe:					
Finland	15.46	17.23	17.72	19.49	26.20
Sweden	17.08	19.16	19.84	23.56	21.49
Switzerland	20.71	20.34	20.61	(2)	(2)
Total, other Europe	17.21	18.23	18.74	15.44	16.43
Total, Europe	17.12	17.40	18.30	20.43	18.76

See footnotes at end of table.

Table 5-2—Continued
Canned tuna: Thai exports, by markets, 1985-89

Market	1985	1986	1987	1988	1989
	Quantity (metric tons)				
	Unit value (Per standard case)				
Asia:					
Malaysia	$18.93	$18.15	$21.45	$23.25	$23.14
Singapore	19.18	19.79	20.70	24.13	21.92
Japan	8.65	12.61	20.73	26.94	25.76
Hong Kong	19.46	18.97	18.63	(2)	(2)
Total, Asia	17.99	18.12	20.99	24.64	23.75
Oceania:					
Australia	15.86	17.72	17.73	23.44	19.01
New Zealand	7.28	19.38	23.30	(2)	(2)
Total, Oceania	15.74	17.78	18.34	23.44	19.01
All other	17.70	15.65	19.19	30.80	34.83
Total, world	17.23	17.61	16.23	22.47	21.01

[1] Includes Luxembourg.
[2] Not available.

Source: Compiled from various annual issues of Fisheries Record of Thailand, Department of Fisheries, Ministry of Agriculture and Cooperatives, Bangkok.

development. However, the Thai Government is looking to provide incentives for industries to relocate from the congested central (around Bangkok) and eastern districts to more remote areas. New guidelines for tax incentives under the 7th National Economic and Social Development Plan are scheduled to be developed before the end of 1990. Tax holidays may be reinstated for the tuna industry in the southern region, and the BOI is accepting applications from firms willing to relocate there. Although the program is generally available to all industries, benefits are awarded on a selective basis, either by industry or by individual firms within an industry, after BOI review. Further details on these programs are contained in "A Guide to Investing in Thailand," published by the BOI.[27]

Nontax incentives are also provided by the BOI. 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 from the Board of Investment an amount up to 80 percent of the letter of credit at a reduced interest rate (about 9.5 percent as of late 1990).[28] This assists the exporter in financing the production and the export of the product, which would otherwise need to be paid for as it occurs. 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. As is the case with tax incentives, packing credits are available to a wide variety of Thai industries.

[27] Commission staff interview with Pongsak Angsupun, Director of the Project Analyses Division, Board of Investment, Bangkok, Sept. 25, 1990.
[28] Commission staff interview with officials of Thai Union, Bangkok, Sept. 24, 1990.

Indonesia

Indonesia is one of the world's fastest growing canned tuna producers and exporters. Indonesian exports of canned tuna to the U.S. market were virtually nonexistent a decade ago. By 1989, Indonesia accounted for nearly 7 percent of total U.S. canned tuna imports (table 3-19). Indonesia is similarly increasing its share of European canned tuna imports.

Although the Indonesian tuna industry currently accounts for a relatively minor share of total world production of and trade in canned tuna, it has the potential to become a major participant in the world canned tuna market. Indonesia posseses many advantages over other tuna producers, mainly access and proximity to tuna resouces and a huge, relatively low cost labor force. In addition, the recent acquisition of the U.S. tuna processor, Van Camp, by the Indonesian firm P.T. Mantrust gives Indonesia access to improved technology and a large and stable market.

Number and Location of Producers

Data are not available on the number of tuna vessels in Indonesia. The harvesting sector consists of relatively small vessels that primarily employ pole-and-line methods; these vessels generally harvest several species in addition to tuna. In 1989, there were approximately 123,000 motorized fishing vessels and 224,000 fishing vessels without motors in Indonesia.[29] The Indonesian fleet is extremely widespread, as the country comprises the world's largest archipelago. Until recently, the Indonesian tuna harvesting sector emphasized exporting fresh and frozen tuna rather than utilizing the catch for a domestic canning industry.

[29] U.S. Department of State, report from the U.S. Embassy, Jakarta, Aug. 22, 1990.

It is believed that there are seven tuna canneries in Indonesia, with an estimated total capacity of about 300 metric tons per day (frozen tuna input basis).[30] These canneries are believed to be located throughout the Indonesian archipelago, with production concentrated on the island of Bali and in the eastern part of the island of Java.

Indonesian canned tuna production currently is dominated by one firm, P.T. Mantrust (Mantrust). The company is one of the world's largest producers of mushrooms as well as baby corn, fruits, dairy products (mainly powdered milk), soft drinks (Pepsi franchise for Indonesia), beer (Anchor brand), beef, and fish products, among others. The firm also holds a manufacturing license for Adidas in Indonesia (apparel, shoes), and produces consumer electronic products under the Telesonic label. Canned tuna accounts for less than 5 percent of the firm's total revenue, but is reportedly an important and growing part of Mantrust.[31]

Mantrust's tuna operations include two fishing fleets under the subsidiary P.T. Nelayan Bahkti, a cannery in east Java under the subsidiary P.T. Blam Bangan Raya, a cannery in Bali under the subsidiary P.T. Bali Raya, and a recently acquired cannery on the island of Biak.

According to Mantrust officials, the Indonesian canned tuna industry is about 5 years old. The industry is still in its early stages of development and has much room to improve. A major problem exists in the Indonesian industry because of the geographically diffuse fleet and canning plant locations and the logistics of the distribution of fish and cans. The industry currently is producing at a relatively low capacity utilization rate, since it generally packs tuna in response to individual orders on a relatively small scale basis.

P.T. Mantrust recently purchased Van Camp seafoods.[32] With this purchase, Mantrust immediately obtained the technology and marketing network to enable it to expand production and trade.

Production Processes and Costs

Since the purchase of Van Camp by Mantrust, the bulk of Indonesian tuna processing is carried out using methods and technology similar to those employed by U.S. processors. As in Thailand, the principal differences between Indonesian and U.S. production processes lie in the degree of labor intensity and the application of technology at certain stages of the production process. Indonesian producers utilize a substantially higher labor content in their tuna production compared to both their U.S. and Thai counterparts. This is mainly a result of widely different wage rates among the countries and of the relatively low level of technology and small scale of production currently in Indonesia. Specifically, more labor is used in handling frozen tuna, moving the cleaned loins to the can filling machines and in the labeling and packing operations.

The Indonesian tuna harvesting sector operates using relatively low levels of capital, as most of the tuna vessels are small and constructed of such materials as fiberglass. In addition, most of the vessels fish relatively close to shore using pole-and-line methods and do not utilize sophisticated (and expensive) machinery such as refrigerated fish wells, speedboats, and helicopters (as do large, capital-intensive purse seiners). Thus, the cost structure of the Indonesian tuna fleet is likely lower than most other fleets and shows likely a higher labor component. Detailed production cost data are not available for raw or canned tuna in Indonesia.

However, data on cost structure were provided to Commission staff by one Indonesian tuna canner.[33] In general, the cost structure is in line with other major tuna producing countries. The share of total costs accounted for by frozen fish is somewhat higher in Indonesia than in Thailand and the United States. Likely factors are the higher share of institutional-sized packs in the product mix and the significantly small scale of production compared with other countries.[34]

As frozen tuna and labor are two major cost items, prices of these inputs provide an indication of the cost structure. However, data are not available on frozen tuna prices in Indonesia. In fact, much of the frozen tuna utilized by larger canneries are contracted and tied to loans made by the canners to the vessel owners.[35] Nevertheless, Indonesian industry members have stated that the prevailing international spot market price is used when purchasing fish from Indonesian boats.[36]

Labor costs to Indonesian canners are based on government-mandated minimum wages. On the island of Bali, the minimum wage rate currently is 2,700 rupiah per day (about $1.45); the average monthly wage for a cannery worker is

[30] Commission staff interview with officials of P.T. Mantrust, Denpasar, Oct. 2, 1990.
[31] Ibid.
[32] See previous section on the U.S. industry for a discussion of the acquisition.
[33] Commission staff interview with officials of P.T. Bali Raya, Denpasar, Oct. 2, 1990. The actual data are proprietary and, therefore, cannot be specifically divulged.
[34] The institutional pack comprises a substantially greater fish content compared with the retail pack. In addition, larger scale production allows fish costs to be lowered on a unit basis, since larger volumes can be purchased.
[35] See the discussion in the following section on government involvement.
[36] Commission staff interview with officials of P.T. Bali Raya and P.T. Nelayan Bhakti, Denpasar, Oct. 2, 1990.

about 150,000 rupiah per month (about $80). On Java, the average cannery worker's wage rate is significantly lower, at 1,500 rupiah per day (about 80 cents), which is above the minimum wage rate. Benefits vary by location and may include free lunch, onsite medical care, and uniforms.

As was the case with the Thai industry, Indonesian processors assert that labor productivity in their plants is considerably lower than in the United States (and in Thailand), partially offsetting the cost advantage of low wage rates. Productivity in Indonesian plants is reportedly less efficient than in Thai canneries, which in turn are reportedly less efficient than in U.S. facilities.[37] This results from a number of factors, including a higher degree of labor intensity in Indonesian (as in Thai) canneries, the greater amount of labor utilized in double cleaning of loins for higher quality export markets in Canada and Europe, and the generally lower scale of production compared with that of U.S. processors. In addition, the Indonesian tuna labor force is relatively unskilled compared with those in other major canned tuna producing countries, as the industry is relatively new. Indonesian industry officials stated that attempts are being made to lower labor intensity and to increase mechanization in their plants.

Financial Experience

Data are not available on the financial experience of the Indonesian tuna industry. However, according to Indonesian industry sources, "long-term" return on sales are in the 1 to 2 percent range.[38] The industry is relatively new, and trends in financial experience are not yet well established.

Production and Trade

Table 5-3 shows Indonesian landings of tuna during 1985-88. Such landings increased markedly during the period, by 38 percent. Skipjack is the predominant species landed and accounted for 69 percent of total landings in 1988 (the latest year for which data are available). An increase in the fishing effort spurred by a combination of rising demand in world fresh tuna markets and in the domestic canning market led to the rise in Indonesian tuna landings.

Indonesian exports of fresh and frozen tuna during 1986-89 are shown in table 5-4. Total exports rose irregularly during the period and peaked in 1988 at 41 million metric tons. Frozen tuna is the predominant product form, accounting for about three-quarters of total fresh and frozen tuna exports in 1989. The primary markets, by far, were Japan (about two thirds of the total quantity in 1989) and Thailand (29 percent). Fresh tuna exports rose substantially during the period, reflecting increased Japanese demand for fresh yellowfin and bigeye for the sashimi market. Frozen tuna exports declined somewhat during the period; this is believed to be the result of increased demand by domestic canners.

Data on Indonesian production of canned tuna are unavailable. However, virtually all production is exported. According to an Indonesian tuna industry official, the domestic market for canned tuna is very small. The development of the domestic market depends on the growth of the middle class and a change in consumers' eating habits. In addition, since canned tuna is still a relatively expensive food item, incomes must rise for canned tuna consumption to rise in Indonesia.[39]

The Indonesian canned tuna output is mostly water pack (for the U.S. market), and is overwhelmingly chunk-style.[40]

Indonesian exports of canned tuna during 1987-89 are shown in table 5-5. Such exports increased nearly 400 percent during the period to a total of 20,821 metric tons, valued at $39 million, in 1989. The United States was the primary market, accounting for 59 percent of the quantity of such exports in 1989. Other major export markets include the major EC canned tuna importers (the Netherlands, the United Kingdom,

[37] Commission staff interviews with officials of Indonesian tuna representatives, Denpasar, Oct. 2, 1990. The number of man hours required to produce a case of tuna was reported to be on an order of magnitude greater than the average levels in the United States.

[38] Commission staff interviews with members of the Indonesian tuna industry, Oct. 2, 1990.

[39] Commission staff interview with Mr. Amang Sukandar, Director of Export Marketing, P.T. Mantrust, Denpasar, Oct. 1, 1990.

[40] Telephone interview with an official of the Van Camp Seafood Co., Oct. 26, 1990.

Table 5-3
Tuna: Indonesian landings of tuna[1] and skipjack, by species, 1985-88
(In metric tons)

Species	1985	1986	1987	1988
Tuna	33,672	39,503	40,505	52,234
Skipjack	87,448	86,118	102,559	115,360
Total	121,120	125,621	143,064	167,594

[1] Includes mainly yellowfin and bigeye.

Source: *Infofish Trade News*, No. 14/90, Kuala Lumpur, Malaysia, Aug. 1, 1990.

Table 5-4
Fresh and frozen tuna: Indonesian exports, by principal markets, 1986-89

Market	1986	1987	1988	1989
		Quantity (metric tons)		
Fresh:				
Japan	846	1,736	(1)	7,400
Thailand	1,500	430	(1)	0
Singapore	1	6	(1)	834
Taiwan	0	0	(1)	219
United States	22	139	(1)	384
All others	0	0		
Total, fresh	2,369	2,311	(1)	8,858
Frozen:				
Japan	7,205	14,164	(1)	16,130
Thailand	14,654	17,016	(1)	10,512
Singapore	0	200	(1)	693
Taiwan	0	0	(1)	88
United States	8	304	(1)	4
All others	0	0	(1)	0
Total, frozen	21,867	31,684	(1)	27,426
Total, fresh and frozen	24,236	33,995	40,753	36,284
		Value (1,000 dollars)		
Fresh:				
Japan	1,384	4,380	(1)	(1)
Thailand	815	321	(1)	(1)
Singapore	2,930	4	(1)	(1)
Taiwan	0	0	(1)	(1)
United States	60	432	(1)	(1)
All others	0	0	(1)	(1)
Total, fresh	5,189	5,137	(1)	(1)
Frozen:				
Japan	7,032	14,822	(1)	(1)
Thailand	8,213	10,610	(1)	(1)
Singapore	0	150	(1)	(1)
Taiwan	0	0	(1)	(1)
United States	23	239	(1)	(1)
All others	0	0	(1)	(1)
Total, frozen	15,868	25,822	(1)	(1)
Total, fresh and frozen	21,057	30,959	(1)	(1)
		Unit value (Per metric ton)		
Fresh:				
Japan	$1,636	$2,523	$(1)	$(1)
Thailand	543	747	(1)	(1)
Singapore	2,930	667	(1)	(1)
Taiwan	(2)	(2)	(1)	(1)
United States	2,727	3,108	(1)	(1)
All others	(2)	(2)	(1)	(1)
Average, fresh	2,190	2,223	(1)	(1)
Frozen:				
Japan	976	1,046	(1)	(1)
Thailand	560	624	(1)	(1)
Singapore	(2)	(2)	(1)	(1)
Taiwan	(2)	(2)	(1)	(1)
United States	288	786	(1)	(1)
All others	(2)	(2)	(1)	(1)
Average, frozen	726	815	(1)	(1)
Average, fresh and frozen	869	911	(1)	(1)

[1] Not available.
[2] Not meaningful.

Source: *Infofish Trade News*, Nos. 2/89 and 7/89, Kuala Lumpur, Malaysia.

Table 5-5
Canned tuna: Indonesian exports, by principal markets, 1987-89

Market	1987	1988	1989
	Quantity (metric tons)		
United States	1001	3260	12321
Netherlands	1413	2269	3234
United Kingdom	454	1185	2239
West Germany	303	921	588
Jordan	15	200	372
Japan	8	40	437
Canada	0	0	216
Australia	14	98	166
Sweden	183	135	100
Denmark	143	99	85
All other	740	411	1063
Total	4274	8618	20821
	Value (1,000 dollars)		
United States	2018	8591	21736
Netherlands	2730	5240	6953
United Kingdom	895	2806	4592
West Germany	541	2043	1230
Jordan	36	551	895
Japan	24	114	802
Canada	0	0	543
Australia	31	211	309
Sweden	369	314	229
Denmark	292	258	193
All other	1403	714	1850
Total	8338	20842	39332
	Unit value (Per metric ton)		
United States	$2017	$2636	$1764
Netherlands	1932	2309	2150
United Kingdom	1972	2367	2051
West Germany	1784	2218	2091
Jordan	2334	2757	2406
Japan	3147	2890	1837
Canada	(1)	(1)	2510
Australia	2183	2167	1860
Sweden	2011	2329	2281
Denmark	2037	2597	2262
All other	1896	2248	1741
Average	1951	2418	1889
	Unit value (Per standard case)		
United States	$17.76	$23.20	$15.53
Netherlands	17.01	20.33	18.93
United Kingdom	17.36	20.84	18.05
West Germany	15.70	19.53	18.40
Jordan	20.54	24.27	21.18
Japan	27.70	25.44	16.17
Canada	(1)	(1)	22.10
Australia	19.22	19.07	16.37
Sweden	17.70	20.50	20.07
Denmark	17.93	22.86	19.91
All other	16.69	19.79	15.33
Average	17.17	21.29	16.63

[1] Not meaningful.

Source: *Infofish Trade News*, Nos. 2/89 and 7/89, Kuala Lumpur, Malaysia.

and West Germany). Exports in 1990 are expected to increase even further, as Indonesian marketing channels in the United States and Europe are expanded.

Government Involvement

According to Indonesian tuna industry representatives, government involvement in the industry is minimal. In general, the business environment is unrestricted, competitive, and oriented toward development and growth. The government is mainly involved in regulating tuna fishery resources in Indonesian waters and in regulating environmental controls. The government also administers industry and export development programs that are not industry specific.

The Government of Indonesia provides various export incentives. A drawback of value added tax is available to exporters on the purchase of goods and materials used for manufacturing export products. Export credit is

also available at "subsidized" rates.[41] Firms that export more than 65 percent of their production are eligible for additional incentives, including exemption from import duties on machines, machine tools, and raw materials.

The Government of Indonesia reportedly is involved in negotiating loans with the Asian Development Bank and the World Bank in order to develop its fisheries.[42] Tuna resources are estimated to have a sustainable yield of about 441,000 metric tons annually[43]; landings in 1988 totaled 167,594 metric tons (table 5-3). Thus, the fishery is being exploited at about 38 percent of its sustainable yield.

While the domestic harvesting sector is being developed, the Government of Indonesia has negotiated joint-venture and licensing arrangements with foreign fishing fleets. The government requires that all joint-venture enterprises be organized under Indonesian law and domiciled in the country. In addition, vessel crews must comprise at least 30 percent Indonesian nationals.[44]

The Indonesian Government also administers the Nucleus Estate and Small Holder Program.[45] With regard to tuna, under this program, an investor will build a plant and individually owned boats will be "assigned" to it. The tuna firm finances the building of the boats and guarantees the loans. The boats are obligated to sell their catch to the company for a specified period of time.

The government of Indonesia reportedly is also actively promoting private sector investment in the fishery sector, including tuna. Government-sponsored activities include investment seminars, assistance with feasibility studies for prospective investors, and support for participation in trade exhibits.[46]

Other Countries

Developments in other Asian countries have not been as dramatic during the past few years compared with those in Thailand and Indonesia. The following section provides a short discussion of such developments since the previous Commission tuna study.

Japan

Japan and the United States dominated world tuna production and trade for most of the history of such trade prior to the 1980s. 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. import market for raw tuna (8 percent of the quantity in 1989). However, Japan's role in the U.S. import market for canned tuna has all but disappeared (1 percent in 1989).

The Japanese market preference is for dried (katsuobushi) and fresh (sashimi) tuna rather than for U.S. market-dominated canned tuna. Therefore, the Japanese processing sector remains geared more toward quick distribution of the fresh product rather than canning. Quality is a primary consideration. Thus, although their numbers are declining, pole-and-line vessels and longliners continue to be heavily depended upon for their high quality tuna compared with that obtained by purse seiners. Japanese production and exports of canned tuna have also decreased since 1986 though total catch has not declined.

Number and location of producers

The number of tuna canneries in Japan has decreased from 35 to 25 since the previous Commission report[47]. Table 5-6 shows that production of canned tuna has also lessened by approximately 10,000 metric tons since 1986.

Although the Japanese market maintains its preference for the higher-quality tuna associated with that obtained by longline and pole-and-line vessels, table 5-7 shows that the number of these vessels operating has decreased significantly during the past 5 years. During the same period of time, the number of purse seiners has increased, with two new vessels beginning to operate just within the past year. The majority of the overseas purse seiners are operating in the western Pacific, although, as of August 1990, three seiners have been operating in the Indian Ocean and two in the Atlantic Ocean under exploratory fishing licenses.[48] Tables 5-8 and 5-9 show that operating costs for longliners decreased since 1986, though net incomes have not shown marked increases as a result.

Production and trade

Table 5-10 presents data on Japanese production (landings) of fresh and frozen tuna. Total Japanese fresh and frozen tuna landings ranged between 653,000 and 780,905 metric tons during 1986-1989.

Table 5-11 shows Japanese imports of fresh, chilled, or frozen tuna during 1986-1989. The largest percentage increases were in imports of yellowfin and fillets of tuna and swordfish. As in the previous 5 year period from 1980-85, the Republic of Korea remains the principal source of Japanese imports of fresh, chilled, or frozen tuna.

[41] Investment Coordinating Board, *Indonesia: A Brief Guide for Foreign Investors*, Apr. 1989. p. 15.
[42] U.S. Department of State, report of the U.S. Embassy, Jakarta, Aug. 22, 1990.
[43] Ibid.
[44] Ibid.
[45] Commission staff interview with officials of P.T. Mantrust, Denpasar, Oct. 2, 1990. This program is common in the Indonesian dairy, mushroom, and plantation industries as well.
[46] U.S. Department of State, report of U.S. Embassy, Jakarta, Aug. 22, 1990.
[47] U.S. Department of State, report from U.S. Embassy, Tokyo, Aug. 1990.
[48] Ibid.

Table 5-6
Canned tuna: Japanese production, imports, exports, and apparent consumption, 1986-89
(In metric tons)

Year	Production	Imports	Exports	Apparent consumption
1986	113,744	0	29,497	84,247
1987	111,904	41	15,379	96,566
1988	110,771	18	7,173	103,616
1989	103,793	52	5,214	98,631

Source: U.S. Department of State, report from U.S. Embassy, Tokyo, Aug. 1990.

Table 5-7
Number of Japanese tuna fishing vessels, by type, 1986-90

Type	1986	1987	1988	1989	1990
Distant water fisheries:					
Longline	792	789	786	763	(1)
Pole-and-line	146	143	108	108	(1)
Adjacent water fisheries:					
Longline and pole-and-line	776	677	607	592	(1)
Overseas purse seiners	32	32	32	34	36
	1,746	1,641	1,533	1,497	(1)

[1] Not available.

Source: U.S. Department of State, report from U.S. Embassy, Tokyo, Aug. 1990.

Table 5-8
Profit-and-loss data for an average Japanese 160 GT Japanese tuna longliner, 1986-88

Item	1986	1987	1988
Average gross tons	164	169	169
Trip days	333	345	311
Fishing days	181	197	170
No. of crew	16	16	16
Gross annual revenue (in 1000 dollars)	1,296	1,580	1,443
Operating expenses (in 1000 dollars):			
Labor and food	472	608	575
Vessel	93	96	130
Gear	36	58	40
Oil	223	183	172
Bait	98	117	117
Rain-gear, boots, etc	17	29	21
Charterage, etc	65	93	49
Marketing charge	33	39	39
Wage for desk workers	44	55	62
Other expenses	158	204	211
Sub-total	1,238	1,482	1,415
Fixed expenses (in 1000 dollars):			
Vessel depreciation	112	129	149
Gear depreciation	11	18	18
Other	12	5	8
Sub-total	135	153	175
Total expenses (in 1000 dollars)	1,373	1,635	1,589
Net income (in 1000 dollars)	-77	-54	-146

Source: U.S. Department of State, report from U.S. Embassy, Tokyo, Aug. 1990.

Table 5-9
Profit-and-loss data for an average Japanese 300 GT Japanese tuna longliner, 1986-88

Item	1986	1987	1988
Average gross tons	308	317	321
Trip days	403	388	425
Fishing days	255	251	274
No. of crew	20	20	20
Gross annual revenue (in 1000 dollars)	2,393	2,181	2,262
Operating expenses (in 1000 dollars):			
Labor and food	911	974	1,194
Vessel	137	142	177
Gear	52	63	72
Oil	398	288	292
Bait	203	221	233
Ice	1	(1)	(1)
Rain-gear, boots, etc	18	21	25
Charterage, etc	56	70	75
Marketing charge	68	74	84
Wage for desk workers	74	83	123
Other expenses	271	329	374
Sub-total	2,187	2,263	2,649
Fixed expenses (in 1000 dollars):			
Vessel depreciation	161	207	228
Gear depreciation	25	27	27
Other	16	26	42
Sub-total	202	260	297
Total expenses (in 1000 dollars)	2,389	2,522	2,945
Net income (in 1000 dollars)	4	- 341	- 683

[1] Less than $500.

Source: U.S. Department of State, report from U.S. Embassy, Tokyo, Aug. 1990.

Table 5-10
Fresh, chilled, and frozen tuna: Japanese production, imports, exports, and apparent consumption, 1986-89

(In metric tons)

Year	Production	Imports	Exports	Apparent consumption
1986	780,905	140,640	69,972	851,573
1987	670,572	188,352	47,458	811,466
1988	751,602	214,585	137,870	828,317
1989	653,000	212,065	84,912	780,153

Source: U.S. Department of State, report from U.S. Embassy, Tokyo, Aug. 1990.

Table 5-11
Tuna: Japanese landings by species, 1986-1989

(In metric tons)

Type and species	1986	1987	1988	1989
Bluefin	23,455	25,335	18,614	22,000
Albacore	51,136	46,945	45,151	48,000
Bigeye	157,806	140,985	135,856	125,000
Yellowfin	118,257	115,225	102,265	107,000
Small-size	16,276	11,150	115,316	13,000
Skipjack	413,975	330,932	434,400	338,000
Total	780,905	670,572	751,602	653,000

Source: U.S. Department of State, report from U.S. Embassy, Tokyo, Aug. 1990.

Japanese exports of canned tuna by principal markets are present in table 5-6. Shipments of canned skipjack to Thailand remain the single largest Japanese canned tuna export market during this period.

Government involvement

Japanese tuna imports 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 the imports to pass through customs. The requirements for imported tuna and domestic tuna are the same. Industry groups may also voluntarily request inspection of imported tuna (for a fee) to assure that the quality of the tuna is comparable to Japanese industry quality standards. Because of these quality considerations, the Japanese wholesale price of bluefin tuna for the "sashimi" market currently ranges from 500 to 150,000 yen per kilogram ($3.30 to $100). The price variation is based almost entirely on the oil content and freshness of the tuna. Foreign exporters of bluefin and yellowfin to Japan suggested in the previous Commission report that this quality control is an effective nontariff barrier to the Japanese fresh tuna market. Raw and canned tuna are free from Japanese import quotas. In August of 1990, the Trade Council of Japan deleted "export targets" from the Council's objectives because of trade friction and the Japanese trade surplus. Export programs and targets for fish, including tuna, no longer exist.

The Japanese Government does provide through the Agriculture, Forestry, and Fisheries Finanace Corporation low interest (2.00 to 5.5 percent per annum, as of October 1989), long term (10 to 12 years) loans to fishermen for the construction of vessels. For both fiscal years (FY) 1989 and 1990, this loan parameter was 57,500 million yen ($420 million and $383 million in 1990 due to exchange rate differences).[49] Similar loans amounting to $33 million in FY 1989 and $67 million in FY 1990 are available to fish processors. The Corporation also provides loans of this type for fishing ports and other infrastructure. Additional funds for the construction and repair of fishing ports are included in the budget of the Fisheries Agency of Japan (FAJ).

The FAJ has a price stabilization fund of $11.5 million in FY 1990 to buy and hold tuna and other fish products when market prices fall below cost. The FAJ also has a special fund for fishing vessel reinsurance.

In order to manage tuna resources, the Japanese Government has implemented a licensing system for vessels. The system includes a limited entry formula and time/area closures. For international management of resources, Japan is a member of Inter-American Tropical Tuna Commission and International Commission for the Conservation of Atlantic Tuna. Together with Australia and New Zealand, Japan is taking measures for the conservation of southern bluefin tuna.

Philippines

The Philippines has traditionally been an important source of U.S. imports of canned tuna, trailing only Thailand in terms of quantity in 1989 (table 3-19). However, the Philippines has retained about the same import market share during the past decade. The share of quantity of the U.S. import market held by the Philippines was 10 percent in 1989, compared with 13 percent in 1979.[50] 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. This situation has remained unchanged during the past several years.

The Philippine tuna canning industry comprises 12 canning companies with a total capacity of about 120,000 metric tons (annual product weight basis).[51] Table 5-12 shows Philippine production of canned tuna during 1986-89. Production remained relatively flat during the mid-1980s before increasing substantially in both 1988 and 1989. Canned tuna production nearly doubled during the period and increased 43 percent in 1988 and 28 percent in 1989. Although production increased substantially, a large excess capacity exists.

[49] Ibid.

[50] During most of its existence, the Philippine tuna industry's principal market has been the United States.

[51] *GLOBEFISH Highlights*, 2/90; *Seafood International*, June 1990.

Table 5-12
Canned tuna: Philippine production, 1986-89

Year	Quantity	Value	Unit value	
	(metric tons)	(1,000 dollars)	(per metric ton)	(per standard case)
1986	26,402	49,615	$1,879	$16.62
1987	26,061	51,720	1,985	17.55
1988	37,137	91,142	2,454	21.71
1989	47,500	108,000	2,274	20.11

Source: Data for 1986-88 from *Yearbook of Fisheries Statistics*, 1988, Food and Agriculture Organization of the United Nations, Rome; data for 1989 from *Globefish*, 2/90.

The increase in production resulted from an increase in frozen tuna supplies mainly by imports. Philippine imports of frozen tuna during 1986–88 are shown in table 5–13. Such imports, which were nominal during the early 1980s, increased substantially in 1988. The 1988 level was nearly 6 times the previous year's level. This resulted from the easing of import restrictions on frozen tuna. In addition, it is believed that a significant share of Philippine frozen tuna imports are harvested by Philippine vessels in non-Philippine waters.

Virtually all Philippine canned tuna production is exported. Table 5–14 shows Philippine exports of canned tuna during 1986–88. The trend in exports mirrored that of production during the period. The primary export market traditionally has been the United States. However, beginning in 1988, the EC was the primary market for Philippine canned tuna exports, accounting for about 41 percent of the total. The U.S. market accounted for about 35 percent of total Philippine exports in 1988.

The Philippines also exports frozen tuna. Table 5–15 shows Philippine exports of frozen tuna during 1986–88. Such exports exhibited no trend during the period except a rise in unit value.

Table 5–13
Frozen tuna: Philippine imports, 1986–88

Year	*Quantity*	*Value*	*Unit value*
	(metric tons)	*(1,000 dollars)*	*(per metric ton)*
1986	3,432	2,245	$654
1987	3,297	1,862	565
1988	18,552	11,389	614

Source: Yearbook of Fisheries Statistics, 1988, Food and Agriculture Organization of the United Nations, Rome.

Table 5–14
Canned tuna: Philippine exports, by principal markets, 1986–88
(In metric tons)

Market	*1986*	*1987*	*1988*
North America:			
United States	11,171	8,550	11,974
Canada	1,023	1,136	2,909
Total, North America	12,194	9,686	14,883
EC:			
West Germany	7,444	6,672	9,738
United Kingdom	1,844	1,998	3,006
Netherlands	371	978	1,078
Denmark	106	156	301
Belgium/Luxembourg	27	68	72
France	126	68	(1)
Total, EC	9,918	9,940	14,195
Scandanavia	467	449	593
All other	1,993	4,180	4,757
Total	24,572	24,255	34,428

[1] Included in all other.

Note.—Figures may not add to the totals shown due to rounding.

Source: Calculated using data from *Infofish Trade News*, No. 9/89, Kuala Lumpur, Malaysia.

Table 5–15
Frozen tuna: Philippine exports, 1986–88

Year	*Quantity*	*Value*	*Unit value*
	(metric tons)	*(1,000 dollars)*	*(per metric ton)*
1986	9,168	13,464	$1,469
1987	11,250	18,196	1,617
1988	10,242	21,557	2,104

Source: Yearbook of Fisheries Statistics, 1988, Food and Agriculture Organization of the United Nations, Rome.

Taiwan

Taiwan is a major source of both raw and canned tuna to the U.S. market. During 1986–89, Taiwan was the leading supplier, in terms of value, of raw tuna and second to Thailand as a foreign supplier of canned tuna (tables 3–15 and 3–19). Taiwan is a major world producer of albacore tuna because the Taiwan tuna fleet traditionally has comprised far-ranging albacore longlining vessels. In 1989, 99 percent of the quantity of Taiwan raw tuna exports to the United States consisted of albacore. Albacore is the predominant item of Taiwan exports of canned tuna to the United States.

The following tabulation shows the number of Taiwan tuna longline fishing vessels in operation, by type of vessel, during 1986–88 (data from U.S. Department of State Annual Fisheries Reports for Taiwan, 1986/88):

Year	Inshore vessels	Offshore vessels	Total vessels
1986	2,084	757	2,841
1987	2,207	927	3,134
1988	1,977	1,018	2,995

The Taiwanese tuna longline fleet remained relatively constant during the period. In addition, in August 1989, Taiwan's Council of Agriculture placed a moratorium on fishing vessel construction during 1990 in order to assess fishing capacity in the face of depleted fishery resources.[52]

The following tabulation presents data on the Taiwan tuna catch during 1986–88[53] (in metric tons):

Year	Catch
1986	146,031
1987	153,453
1988	174,176

During the period, the catch increased 19 percent; most of the increase was accounted for by the deepsea (offshore) sector.[54] Albacore is the primary species harvested, generally accounting for about half of the total tuna catch. Yellowfin is the second major species, followed by bigeye, bluefin, and skipjack.

The following tabulation shows Taiwan's exports of tuna products during 1985–87 (data from U.S. Embassy, Taipei, Industrial Outlook Report—Fishing Industry, 1988/89, quantity in metric tons, value in thousands of dollars):

Year	Quantity	Value
1985	28,725	75,000
1986	22,521	94,000
1987	68,462	169,600

The Tuna Industries of Latin America

The Latin American fishing industry represented nearly 20 percent of the total world fisheries catch in 1986.[55] This level will likely remain steady. Chile and Peru accounted for 70.4 percent of the Latin American fisheries catch in 1986, with Mexico accounting for 8.2 percent. Although Mexico is not the leading Latin American fishing nation, it does lead the Latin American countries in the tuna industry. As represented in the tabulation at the bottom of the page, Mexico, Venezuela, and Ecuador are the leading Latin American tuna fishing nations (data from various issues of the Inter-American Tropical Tuna Commission).

The Ecuadoran and Mexican tuna harvests suffered in 1987 on account of the effects of the 1987 "El Nino". While the Mexican tuna harvest rebounded to record levels in 1988, the Ecuadoran harvest has been recovering at a slower pace. Peru has been trying to build up its tuna industry since the 1970s, but despite ample supplies of tuna off the Peruvian coast, all attempts to capitalize on these supplies have proved unsuccessful.

Other Latin American countries are attempting to build up their tuna industries. In 1988 it was reported that a Chilean company had ordered four tuna vessels from an Italian shipyard, leading observers to believe that the Chileans were planning to improve their tuna industry.[56]

[52] U.S. Embassy, Taipei, Industrial Outlook Report—Fishing Industry, 1988/89, 89 Taipei A-005.
[53] Ibid.
[54] The deepsea sector consists of vessels over 50 tons, mainly large purse seiners and longliners. The inshore sector consists of powered vessels less than 50 tons, principally longlining vessels. The coastal sector consists of unpowered vessels utilizing various gear types.
[55] NMFS 10/20/87.
[56] NMFS, U.S. Department of Commerce.

Country	1980	1985	1986	1987	1988[1]
			short tons		
Mexico	36,043	96,805	125,047	117,256	136,212
Venezuela	2,369	32,972	46,185	51,070	57,046
Ecuador	20,504	38,705	46,708	41,149	45,441
Panama	11,255	(2)	(2)	(2)	(2)
Peru	944	(2)	(2)	1,596	(2)

[1] Preliminary.
[2] Not significant.

Colombia is also hoping to profit from the abundant tuna supplies surrounding Latin America. In early 1990, a new tuna processing plant was opened in the port city of Cartagena. This new plant is expected to more than double the value of Colombian exports of frozen tuna by 1994.

The Latin American nations that harvest fish have made several attempts to form the Latin American Fisheries Organization (OLDEPESCA) to increase their control over the waters surrounding Latin America. An agreement, however, has yet to be reached. Mexico, El Salvador, Peru, Nicaragua, and Ecuador are all signatories of the Eastern Pacific Tuna Organization (OAPO). This organization "establishes an alternative system for the international cooperation in tuna management."[57] Yet, despite all the attempts of other Latin American nations to build up their tuna industry, Mexico continues to dominate the area.

Mexico

Number and Location of Operations

The number of Mexican tuna vessels in operation has increased significantly over the past decade. The number of active craft (seiners and baitboats) increased from 51 in 1980 to 86 in 1990. The number of tuna vessels in operation peaked at 98, in 1986. The carrying capacity of the Mexican tuna vessels in operation has remained relatively constant over the last few years. The following tabulation shows the number of active Mexican tuna craft, including purse seiners, baitboats, and other types of craft, during 1983–90 (data from *Anuario Estadistico de Pesca*, various issues, and the U.S. Embassy, Mexico City):

Year	Number of active craft
1983	85
1984	69
1985	79
1986	98
1987	85
1988	84
1989	84
1990	86

The majority of the fleet operates in the Eastern Pacific Ocean (EPO). In 1989, approximately 81 vessels operated in this area. Although the size of the fleet is increasing, it has not reached the level the tuna development plan of 1977 had called for. Mexico is believed to have, however, the world's second largest tuna purse seine fleet, second only to that of the United States.

[57] U.S. Department of State, report from U.S. Embassy, Mexico City, Apr. 23, 1990.

There are currently eight ports along the Pacific coastline of Mexico that are equipped to unload tuna. The largest and busiest of these ports is located at Ensenada. Although it is the best equipped port in Mexico (with an unloading capacity of about 528 tons per 8-hour shift[58]), Ensenada is plagued by a number of problems. Among them is overcrowding. Ensenada is not only frequented by fishery vessels, but has increasingly become a favorite port of cruise liners. The Mexican Government has recognized the problems facing the Ensenada port facilities and has initiated an 800 million peso improvement program.

In 1988, there were 19 Mexican canneries in operation equipped to can tuna. Most of these canneries (45 percent) were located in the State of Baja California. The canneries had a capacity of 569 metric tons (raw tuna basis) per 8-hour shift. Plans for another tuna processing plant, located at Puerto Madero, are underway. It has a projected canning capacity of approximately 70 to 90 metric tons of tuna per shift. The canning industry, like the port facilities, is also plagued by a number of problems. In 1988, of about 50,000 metric short tons of tuna sent to the canneries, only about 55 percent was processed. The same ratio was expected to hold true in 1989. This relatively small output of canned tuna may be attributed to many problems in the Mexican canned tuna industry. Among these problems is the lack of an effective refrigeration system and the absence of a cannery specializing in tuna. Many of the existing canneries process other products, such as tomato sauce, refried beans, and other fishery products. Although the new cannery at Puerto Madero will have space set aside for tuna, it, too, will process other species of fish.

Production

Mexican production of frozen tuna, represented by the catch, increased substantially during 1980–89. The following tabulation presents Mexican tuna catches during 1980 and 1985–89 (data from various issues of *Anuario Estadistico de Pesca*):

[58] Linda Lucas Hudgins, "The Development of the Mexican Tuna Industry, 1976–86" ch. in *The Development of the Tuna Industry in the Pacific Islands Region: An analysis of Options*, ed. David J. Doulman (Honolulu: East-West Center, 1987), p. 159.

Year	Quantity		Value	Unit value	
	(1,000 pounds)	(short tons)	($1,000)	(per lb.)	(per ton)
1980	74,251	37,126	38,123	$0.51	$1,027
1985	204,900	102,450	36,182	.17	333
1986	227,040	113,520	47,929	.21	422
1987	246,796	123,398	21,863	.09	177
1988	294,870	147,435	(1)	(1)	(1)
1989[2]	326,384	163,192	(1)	(1)	(1)

[1] Not available.
[2] Preliminary.

The leading State in Mexican tuna landings in 1989 was Baja California, which accounted for 45 percent of the total landings. The second leading State for tuna landings in 1989 was Sinaloa, with 37 percent of the total. Baja California Sur was the other major State for tuna landings, with 15 percent of the total.

Yellowfin was the leading species of tuna caught by the Mexican tuna fleet in 1989, accounting for about 79 percent of the catch that year. Skipjack was the second leading species caught that year, accounting for 10 percent of the total. Minor amounts of other tuna species were caught by the Mexican tuna fleet.

The bulk of the tuna catch in Mexico is accounted for by the private sector. In 1987, 87 percent of the tuna catch was accounted for by the private sector. This is an increase from 85 percent the year before. The share of the tuna catch accounted for by the public sector (state companies) was 1 percent in 1987. The remaining 12 percent of the 1987 Mexican tuna catch was accounted for by the cooperatives.

The great bulk of Mexican tuna landings occurs in the EPO. There are generally abundant tuna resources off the Mexican coast, as well as in nearby Latin American waters. The principal species harvested, by far, is yellowfin, as well as a substantial amount of skipjack. The tabulation at the bottom of the page shows the Mexican catch of yellowfin and skipjack tuna in the EPO during 1980 and 1985–88 (data from the Inter-American Tropical Tuna Commission).

The combined Mexican yellowfin and skipjack catch in the EPO rose steadily from 94,009 short tons in 1985 to an anticipated 135,620 short tons in 1988. The 1987 data do not reflect the overall decline in Mexican tuna production for that year because the El Nino event was not felt where the bulk of yellowfin and skipjack tuna is harvested. The El Nino event of 1987 was concentrated in the area off the coast of Ecuador.

Major markets

The domestic market for Mexican tuna is concentrated in the canning industry. Mexican domestic consumption of frozen tuna, in terms of raw material received by canneries, increased from 34,124 short tons in 1987 to an anticipated 70,962 short tons in 1989. Domestic consumption of tuna grew with the increase in tuna catches.

Mexican exports of frozen tuna increased during 1985–89. The following tabulation shows Mexican exports of frozen tuna (data from SEPESCA, Planning Directorate General, volume in short tons, value in thousands of dollars):

	1985	1986	1987	1988	1989[1]
Volume	32,039	72,341	79,544	82,996	92,594
Value	22,076	57,533	57,729	81,891	69,719

[1] Preliminary.

The most significant increase occurred during 1985–1986, with a volume increase of 40,302 short tons (or 126 percent). Italy has been the major market for Mexican frozen tuna since 1985. Other major importers of Mexican frozen tuna in 1988 were Japan, France, Spain, Malaysia, Thailand, Taiwan, Panama, and the United States. Although the volume of Mexican frozen tuna exports increased during 1988–1989, the value of exports decreased.

Species	1980	1985	1986	1987	1988[1]
			Short tons		
Yellowfin	20,910	87,779	102,934	109,422	114,358
Skipjack	13,519	6,230	8,734	7,296	21,262
Total	34,429	94,009	111,668	116,718	135,620
			1,000 pounds		
Yellowfin	41,820	175,558	205,868	218,844	228,716
Skipjack	10,232	12,460	17,468	14,592	29,184
Total	52,052	188,018	223,336	233,436	257,956

[1] Preliminary.

The Availability of Tuna Resources

The Mexican tuna industry does not need to rely on outside assistance. There is abundant tuna within Mexico's 200-mile exclusive economic zone (EEZ). Mexico's tuna industry could be supported by the tuna available within 150 miles of the Mexican coastline.[59] A tuna resource scarcity occur, however, during an El Nino phenomenon. As discussed earlier, such an event did lower the Mexican tuna harvest in 1987. The 1988 harvest did recover, and the outlook for 1989 was even better.

However, an increase in the number of tuna imports has been recently noted. The following tabulation shows Mexican tuna imports by volume (short tons) and value (thousands of dollars) during 1985–1989 (data from SEPESCA, Planning Directorate General):

	1985	1986	1987	1988	1989[1]
Volume ...	61	[2]	73	2,316	2,776
Value	126	[2]	216	5,707	6,748

[1] Preliminary data (January–December, 1989).
[2] Not available.

The sharpest increase occurred during 1987–1988, with an increase of 3,083 percent. This increase in imports is believed to be the result of a gain in Mexican currency purchasing power. This gain is part of the Salinas Administration's economic reform package.[60]

The Tuna Industries of the Indian Ocean Region

The Indian Ocean is a relatively late comer as a source of tuna, but its importance has grown rapidly and will continue to grow. The total catch of tuna in the Indian Ocean grew by nearly 150 percent in a single decade, from 264,000 metric tons in 1978 to 642,000 metric tons in 1987.[61] Most of the catch was by fleets from outside the region, such as from France and Spain. Currently, the primary role of Indian Ocean countries with regards to tuna is one of providing resources and support to countries with more developed industries. However, attempts are being made to increase the tuna production activities of Indian Ocean nations.

Seychelles[62]

A former British colony, the Republic of Seychelles is a group of islands in the western Indian Ocean, with a population of only 70,000, but with a jurisdiction over 1.3 million square kilometers of fishing grounds within its 200-mile extended economic zone. With wholesale trade in frozen tuna (mostly exports) in 1988 valued in excess of $350 million, it is probably the most important tuna landing and transhipment point in the Indian Ocean. The Seychelles is a significant tuna exporter; much, if not most, of the Indian Ocean tuna destined for the European market is either landed in or transhipped through its ports. In addition, a small share of U.S.-bound tuna passes through the Seychelles on its way to canneries along the Pacific Rim.

Most of the assistance in developing the nation's tuna industry and supporting infrastructure and port development has been provided by the Governments of France and the European Community; the EC has also set up bilateral tuna fishery agreements with the Seychelles, as noted earlier. Additional assistance has been provided by other Western nations, including the United States.

Most of the tuna catch within the Seychelles' 200-nautical-mile exclusive economic zone is taken by foreign fleets of purse seiners and longliners; the domestic harvesting sector has only recently begun to develop. Most (39) of the 48 foreign purse seiners licensed to fish in Seychelles waters were of European registry, the rest being registered in the USSR, Mauritius, Panama, and India. A large number of foreign longliners (167 in 1988) were licensed to fish in Seychelles waters, where they concentrated on yellowfin and bigeye, in addition to nontuna species. The domestic fishing industry is small and limited mainly to artisinal[63] fishing. A parastatal was formed in 1988 to operate a fleet of domestic purse seiners; 1990 will be its first full year of operation with a small fleet of French-built vessels.

There is one tuna cannery, a Seychelles-France government joint venture set up in 1987 that exported $12.5 million worth of canned tuna in 1989. A second cannery is reportedly under consideration.

Australia

Although not supported by an Indian Ocean tuna resource *per se*, the Australian tuna industry is an important neighbor of the region's industries discussed above. It warrants attention not only because its fishing industry shares some large, potentially valuable tuna resources with other nations (e.g., Japan), but also because it is a large market for canned tuna and is supplied largely by a local subsidiary of H.J. Heinz, the parent company of StarKist, the largest U.S. tuna processor.

The industry depends mainly on the southern bluefin tuna (SBT) stocks concentrated in the Tasman Sea (between Tasmania and Australia's

[59] Ibid., p. 157.
[60] U.S. Department of State, report from U.S. Embassy, Mexico City, Apr. 23, 1990.
[61] Statistics from the Indo Pacific Tuna Development and Management Program, quoted in *Australian Fisheries* 48:12 (December 1989), p. 2.
[62] Material for this section was obtained from unclassified cables from the U.S. embassy in Victoria to the U.S. Department of State.
[63] Artisinal fishing is characterized by small-scale, labor-intensive operations which mainly fish close to shore.

south coast) and other waters south of Australia. Other resources, including the albacore stocks off Australia's east coast, support the fisheries of other nations, mainly Japan and New Zealand.

The SBT resource reportedly has the potential to become one of the world's leading sources of tuna, but it has suffered from heavy fishing pressure during the past several years, which has significantly depleted the stocks. Efforts have been made by the principal fishing nations involved (Australia, New Zealand, and Japan) to cooperate in reducing fishing effort so as to allow the stocks to recover. Australia has gone so far as to press for a moratorium on the taking of SBT in a "Statement on the Environment" in July of 1989, in which Prime Minister Hawke declared that "the SBT stock remains under the gravest of threats." However, Japan, which operates the largest SBT fleet (in terms of tonnage harvested) has opposed a moratorium; a compromise solution was reached in November 1989 when the three nations agreed to an annual quota for the 1989–90 harvest of SBT of 11,750 metric tons, of which 52 percent goes to Japan, 45 percent to Australia, and 7 percent to New Zealand.[64] The 1989–90 quota represents a sharp reduction from the allowable catches in previous years; as recently as 1983 the quota was set at 35,000 metric tons.

[64] "Southern bluefin tuna quotas set," *Australian Fisheries* 49:1 (January 1990), p. 12.

Chapter 6
Competitive Effects of Foreign and U.S. Trade-Distorting Practices

Introduction

This chapter examines the competitive effects of the trade-distorting practices implemented by the European Community (EC) and the United States. The first section briefly reviews the tariffs, quotas, and other practices currently in force. The second section discusses the effective tariff rate that results from the multi-tiered U.S. tariff structure. The next section presents the central results of the analysis here: quantitative estimates of the effects of the tariff policies of the EC and the U.S. It considers how tariffs on canned tuna affect domestic prices, domestic production, imports, world prices, and markets in other countries. It also evaluates the likely effects of a matter which is of current interest for policy: equalization of the tariff structures of the EC and the U.S. The fourth section addresses the impact of tariffs on U.S. tuna harvesters. The fifth and final section analyzes the competitive effects of the EC's purchase of access rights to certain territorial waters.

Trade-Distorting Practices in the World Tuna Market

Tariffs

Countries or economic communities with a domestic tuna canning industry generally adopt some sort of protective tariff structure, but these structures vary widely in their features. Table 6-1 summarizes the tariff structures of the principal importers of canned and/or raw (frozen) tuna.[1] In most cases the features of these tariff structures have been discussed in previous chapters.

[1] The table omits discussion of U.S. tariffs on "tuna loins," semi-processed tuna meat destined mainly for canners. Tuna loins packed in bulk or in containers over 6.8 kilograms are assessed at a rate of 1.1 cents ($0.011) per kilogram, while loins packed in smaller containers are assessed a duty of 6 percent ad valorem.

Japan's imports of raw tuna are primarily consumed as sushi, while Thailand applies its raw-tuna duty only to domestic consumption, not to tuna processed for export. Thus the only important tariffs are those on canned tuna. The U.S. and the EC together import about 80 percent of traded tuna, in roughly equal shares. As a result, their tariffs are by far the biggest contributors to trade distortion in this market. The following discussion will therefore focus on the effects of tariffs in these regions only.

Other Practices Which May Distort Trade

Tariffs are the main instrument of protectionist policies in the international tuna market, but other practices are followed as well. Some tuna-producing members of the EC apply a de facto quota system, based on import licenses, to restrict imports.

The EC as a whole has a further policy which benefits its member states' harvesters: the purchase of fishery access rights from Madagascar and other developing economies in the Indian Ocean and elsewhere. This practice will be discussed in a separate section at end of this chapter.

As discussed in Chapter 3, the United States occasionally imposes embargoes on tuna imports from countries that have violated provisions of either the Magnuson Fishery Conservation and Management Act (MFCMA) or the Marine Mammal Protection Act (MMPA). As these embargoes are temporary and are not imposed for the purpose of protecting the domestic industry, they will not be discussed further in this chapter.

The U.S. Tariff Structure and the Effective Tariff

The United States assesses tariffs of 35 percent on canned tuna packed in oil and rates of 6 percent and 12.5 percent on tuna packed in water, the former rate applying to the quantity imported each year until imports reach a quota equal to 20 percent of the previous year's domestic production.

Table 6-1
Tariffs on canned and raw tuna in the major importing countries
(Percentage rates ad valorem)

Country or trading region	Canned tuna		Raw tuna	Remarks
	Water-packed	Oil-packed		
United States	6/12.5	35	0	Tariff quota for water-packed
European Community	24/0	24/0	0	Lome countries duty-free
Canada	14/11/2	14/11.2	0	Lower rate for U.S. exports
Japan	20/15	20/15	10/5	Reduced rates for GATT members
Thailand	60	60	60	No duty on re-exports

The Tariff on Tuna Packed in Oil

The 35 percent tariff on tuna packed in oil has essentially no effect on the U.S. market, because oil-packed and water-packed tuna are very close substitutes in production. Both foreign and domestic canneries can easily shift between the two packing media, and there is almost no difference in the prices of the media. Oil-packed and water-packed tuna sell for virtually the same price in the U.S. market, so foreign producers supply only water-packed tuna to the U.S.[2] Thus, the 35 percent tariff rate does not affect the quantity of imports; only the composition of the total imports.[3]

The Tariff-Rate Quota on Tuna Packed in Water

The impact of a tariff on tuna depends on how the tariff affects the total quantity of imports on a year-to-year basis.[4] The under-quota tariff rate thus has no far-reaching impact, because the quantity imported at this rate is a constant percentage of domestic production. It is the over-quota tariff rate of 12.5 percent that determines the quantity of imports each year.

This issue is sometimes confusing when considering that the appropriate single rate for the purpose of tariff equalization is a trade-weighted average of the tariff rates applied throughout the year.[5] This concept of a weighted-average, revenue-neutral tariff, however, is a matter of GATT rules and other aspects of trade law.

The price of imported tuna is fixed by the tariff at 12.5 percent above the world supply price. Several U.S. importers and foreign exporters have confirmed to Commission staff that the U.S. price is not lower during the time that the under-quota tariff is in effect.[6] The lower tariff at that time creates the potential for greater than normal profits either for importers or exporters, but it does not reduce the U.S. price of imported tuna.

[2] The exception is a small amount of high-valued specialty products which, according to industry sources, do not compete closely with domestic products.

[3] If the tariff rate on oil-packed tuna were reduced to the rate applied to water-packed tuna, both total tuna imports and total domestic production would remain constant. Any increase in imports of oil-packed tuna would be matched by a decrease in imports of water-packed tuna.

[4] What happens over a shorter time period is irrelevant because canned tuna is a storable commodity.

[5] This concept was presented, for example, by members of the industry in hearings before the Commission. See testimony of Association of Food Industries, hearing transcript pp. 65-69, and StarKist Seafood Co., transcript, p. 16.

[6] This is to be expected for a non-perishable commodity, as it can be held off the market if the price were to fall.

The Disruption of Markets Due to the Tariff-Rate Quota

In fact, a portion of this potential excess profit is not actually realized, but it is dissipated in the costs of added uncertainty, high cyclical inventories, and over-capacity production.

Each year the under-quota tariff generates a lot of market-disrupting behavior as importers race each other to gain a share of the quota. At the end of each calendar year importers increase stockpiles, holding them in storage in Customs warehouses. On or after January 1, importers claim the product and pay the under-quota rate of 6 percent. "This creates a cycle of market disruption with tight supply late in the year and excessive inventories at the beginning of the year."[7]

A further problem with the tariff-rate quota system is that importers and Customs officials cannot know when the quota will be filled until a substantial time after the fact. As a result, Customs "begins collecting a deposit covering the (over-quota) duty rate before the quota figure has even been announced."[8] Almost inevitably under such a system, some imports are overcharged: "(t)his amounted to $1.5 million (in 1989), some of which still has not been refunded to the importers. No interest is paid on this money."[9] In addition, "administrative problems for Customs ... in turn burden importers."[10]

The disruptive effects of the tariff-rate quota system are not limited to the U.S. market. Some Thai tuna processors reported to Commission staff that they scramble during the last several months of each year in order to supply orders to enter the United States early in the following year. Extra workers are hired during this rush period and laid off after. The increased output puts pressure on the market for frozen tuna, raising the price of this input. European buyers reportedly often hold off on purchases from Thai exporters during this period because prices are higher then.

The Competitive Effects of U.S. and EC Tariffs

The qualitative effects of a tariff are well established in economic theory. A tariff raises the consumer price of an imported good while depressing the world supply price. The price increase in the country applying the tariff leads

[7] Testimony of Larry Abramson, president, Camerican, Inc., on behalf of the Association of Food Industries, hearing transcript, p. 66. In recent years the race for a share of the quota has been increasingly intense, with annual quotas filled by May 7, 1985, Mar. 28, 1986, Apr. 2, 1987, Mar. 21, 1988, and Jan. 25, 1989.

[8] Ibid., p. 67.

[9] Ibid., p. 68.

[10] Ibid., p. 66.

some consumers to switch to competing domestic products. The reduced price in world markets leads exporting countries to reduce production and induces consumers in other importing countries to switch from domestic products to imports.[11]

This chapter goes beyond qualitative analysis, presenting quantitative estimates of the competitive effects of the U.S. and EC tariffs under alternative assumptions about underlying economic "elasticities." Elasticities are essentially measures of the responsiveness of one variable to a change in another variable.[12] Three kinds of elasticities are required in order to trace the effects of a tariff: (1) elasticity of supply,[13] both for foreign producers of tuna and for domestic producers, (2) elasticity of composite demand for tuna,[14] both in the domestic market and abroad, and (3) cross-price elasticities of consumers' demand for imported and domestic tuna.[15]

There are few good statistical estimates of these elasticities. Nevertheless, we can be fairly confident that these elasticities lie within certain bounds. Then, by considering a range of plausible values, we can derive upper- and lower-bound estimates of the effects of tariffs.

Assumptions About Elasticities

Table 6-2 sets forth the alternative sets of assumptions about elasticities that will be followed in this chapter. The "base-line" set of values indicates, in the view of the Commission, the most reasonable estimates. The outer ranges labelled "lower bound" and "upper bound" refer to values of demand elasticities. The "lower-bound" values for the various demand elasticities are extreme values which tend to lessen the impact of tariffs on domestic producers, while the "upper-bound" values tend to increase the estimated impact. Low and high supply elasticities are treated separately because they have a different sort of impact. A low supply elasticity implies that tariffs have a relatively greater effect on price, and a lesser effect on quantity produced. A high elasticity of supply, on the other hand, implies that the effect of a tariff is more keenly felt in changes in the quantity of canned tuna produced than in its price.

[11] An analytical framework which explains these effects is presented in Appendix H.

The treatment of these effects here implicitly assumes that the world tuna industry behaves in a competitive fashion. If the industry behaves oligopolistically, the results here must be modified somewhat. In that case, even though the specific numerical results in Tables 6-3 through 6-7 below would not be accurate, the actual effects of tariffs would still likely be within the range of results presented.

[12] More precisely, an elasticity is the percentage change in a dependent variable resulting from a one-percent change in an independent variable.

[13] An elasticity of supply measures a change in producers' supply of tuna in response to a change in price.

[14] Composite demand includes both imported and domestic tuna. The demand elasticity, always a negative number, represents the change in quantity demanded in response to a change in price.

[14]—*Continued*

[15] Cross-price elasticities measure the extent to which consumers switch between domestic tuna and imported tuna when the price of one or the other changes. The concept is useful, for example, in considering how a tariff, which raises the price of imported tuna, affects demand for domestic tuna. If consumers regard imported and domestic tuna as perfect substitutes, then their cross price elasticities take a value of infinity, and the price of domestic tuna rises the same amount as the price of imported tuna.

Technically, cross-price elasticities are not fundamental parameters but are derived from three other parameters: the elasticity of composite demand, the share of domestic tuna in consumption, and the elasticity of substitution. The elasticity of substitution characterizes consumer tastes regarding domestic tuna and imported tuna.

Table 6-2
Alternative assumptions applicable to elasticities in major trading regions

	Scenarios				
	Lower bound		*Base line*	*Upper bound*	
Demand elasticities					
For the U.S.:					
Composite demand for tuna	-2		-0.5	-0.3	
Cross-price elasticity[1]	+2		+10	+100	
For the EC and other regions:					
Composite demand for tuna	-3		-1	-0.5	
Cross-price elasticity[1]	[2]+1.9		[2]+11.2	[2]+114	
Supply elasticity	Low	High	Medium	Low	High
For all regions	1	5	2	1	5

[1] This represents the elasticity of demand for domestic tuna with respect to the price of imported tuna.
[2] The small difference in cross-price elasticity between the EC and the United States results from the method of calculation. See text for details.

The first elasticity noted in the table, the price elasticity of demand for tuna (treating domestic and foreign tuna as a single, composite commodity), depends in large part on whether other commodities are close substitutes for tuna. A study by the U.S. Department of Agriculture[16] concludes that tuna in the U.S. has few close substitutes and thus that its demand is quite inelastic, with a value of roughly -0.3. Industry members indicate to Commission staff, however, that they believe their demand to be substantially sensitive to prices. Although they do not state this belief in terms of a numerical elasticity, Commission staff interpret it as implying an elasticity of perhaps -2. Commission staff regard these two estimates as extremes of the likely range of the true elasticity. Because tuna is commonly regarded as having few close substitutes, a magnitude less than unity seems likely, and -0.5 is used as the base-line assumption.

In Europe canned tuna has more close substitutes in consumption, particularly other canned fish such as salmon, pilchards, and mackerel. Thus the values assumed for Europe are somewhat larger in absolute value.

The or cross-price elasticity of demand, i.e. the sensitivity of demand for domestic tuna to changes in price of imported tuna, indicates the extent to which the two varieties of tuna are substitutes. Low values indicate a greater differentiation in consumers' perceptions of the products, while high values indicate that consumers care little whether they purchase imported or domestic tuna, but care rather which is least expensive. A 1986 case study estimated a value of 1 for this elasticity.[17] Owing to increasing globalization of the industry, however, the present analysis assumes a value of 2 to be a more reasonable estimate of the lower bound. It is at least as reasonable to assume an elasticity approaching infinity, indicating perfect substitutability.[18] As an upper-bound value we therefore use 100, which for analytical purposes approximates infinity. The base-line value of 10 indicates a relatively high degree of substitutability, but still substantially less than perfect substitutability.

The cross-price elasticities for the EC are based on the assumption that a more fundamental parameter, the elasticity of substitution between domestic and imported tuna, is the same in the EC and the U.S. Due to other differences in the two markets this means that cross-elasticities in the EC vary somewhat from those in the U.S.[19]

Low and high values for elasticity of supply, respectively 1 and 5, are used as outer bounds in this study. The base-line value of 2 reflects technological conditions in the industry. Use of the same value for the U.S., the EC, and exporters reflects the fact that producers use a common technology and share a common market for many of their inputs.

The assumptions about elasticities in Table 6-2 have been combined with market data[20] to generate estimates of the effects of tariffs on prices and quantities in both markets. These estimates are presented in this section.

The Impact of U.S. Tariffs

Table 6-3 presents results for the impact of current U.S. tariffs on both domestic and foreign markets. The qualitative impact of tariffs, positive or negative on each of the prices and quantities is the same under all sets of assumptions, but the quantitative impact varies. Each scenario considers how the present market conditions differ from what they would have been in the absence of a tariff.

Following the base-line assumptions, the current tariff raises the price of imports by 10 percent and reduces the quantity imported by almost a third of what it would have been. It raises the price of domestic tuna by 8.4 percent, and it increases domestic production by 16.7 percent. The tariff reduces exporting countries' supply price by 2.5 percent, and reduces their production by 5.0 percent.[21]

The base-line figures indicate the most likely effects of the current tariff. Uncertanty about the true values of the underlying elasticities is reflected in the differing results presented in the columns for upper-bound and lower-bound assumptions.[22]

[16] U.S. Department of Agriculture, Economic Research Service, *Consumer Demand for Red Meat, Poultry, and Fish*, by Richard C. Baidacher, John A. Craven, Kuo S. Huang, David M. Smaliwood, and James R. Blaylock, September 1982, pp. 13-15.

[17] G.C. Hufbauer, et. al. *Trade Protection in the United States: 31 Case Studies* (Washington, DC: Institute for International Economics, 1986), p. 113.

[18] One reason to consider domestic and imported canned tuna to be perfectly substitutable is that, in the case of several brand names, they are marketed with identical labels and indistinguishable contents. The same varieties of tuna are produced both domestically and in exporting countries.

[19] See note 16.

[20] The other figures required are data on the share of imports in domestic consumption and the share of each tariff region's imports in world trade.

[21] The average price of domestic tuna rises slightly less than the average price of foreign tuna because the two are not perfect substitutes. For particular brand-name products, the consumer price of domstic tuna will rise the same amount as the price of the corresponding import. There is, however, a slight difference between domestic and imported tuna in the overall mix of products (the amount of higher quality white meat tuna compared to the amount of light meat tuna, for example). This is enough of a difference to mean that the average price of domestic tuna will rise less than the average price of imported tuna.

[22] The results in each column of the table should be taken together as a set. It does not make sense, for example, to combine the result for the quantity of imported tuna in one column with the result for the price of domestic tuna in another column.

Table 6-3
Effects of U.S. tariffs in the U.S. and the World Markets

Trading region	Scenarios: Lower bound, Low supply elasticity (1)[1]	Lower bound, High supply elasticity (5)[1]	Baseline, Medium supply elasticity (2)[1]	Upper bound, Low supply elasticity (1)[1]	Upper bound, High supply elasticity (5)[1]
	Percent				
Effect on U.S.:					
Price of imported tuna	+9.4	+10.7	+10.0	+9.5	+10.8
Quantity of imported tuna	-38.0	-47.0	-31.6	-20.5	-45.0
Price of domestic tuna	+3.9	+2.8	+8.4	+9.4	+10.4
Quantity of domestic tuna	+3.9	+13.8	+16.7	+9.4	+52.2
Effect on World:					
Price of traded tuna	-3.1	-1.8	-2.5	-3.0	-1.7
Quantity produced in exporting countries	-3.1	-9.2	-5.0	-3.0	-8.6

[1] These values are used for supply elasticities in the analysis.

The estimate of the effect of tariffs on the price of imported tuna is not very sensitive to differences in assumptions. The results for quantity of imports fall within a range of 20.5 percent to 47.0 percent. The results that are most sensitive are the effects of tariffs on the price and quantity of domestic tuna. The range of estimates for this price change is 2.8 to 10.4 percent, while the range of estimates for increase in domestic production is 3.9 to 52.2 percent.

The Impact of Equalizing U.S. Tariffs With Those of the EC[23]

Table 6-4 presents estimates for the impact of raising U.S. tariffs from the current two rates of 6.0 percent and 12.5 percent to the single EC rate of 24 percent. According to the base-line assumptions, this would increase the price of imported tuna 7.7 percent above what it is now. The quantity of U.S. imports would decline by 32.4 percent; the price of domestic tuna would increase by 6.1 percent; and the quantity of domestic production would increase by 12.3 percent.

The range of results for the price of imported tuna is quite narrow under alternative assumptions, in the range from 7.3 percent to 8.6 percent. The range of estimates for the decline in the quantity of imports is much broader, extending from 19.7 percent to 72.1 percent. Estimates for the impact of the tariff on the price of domestic tuna range from 1.9 to 7.3 percent, while estimates for domestic production range from 3.0 percent to 35.5 percent.

[23] Under the terms of the GATT, any increase in U.S. duties must be matched by compensatory reductions in other duties. The present analysis ignores the effects of compensatory reductions and problems in negotiating changes.

The Impact of EC Tariffs on EC, U.S., and World Markets

Table 6-5 indicates the effects of the European Community's tariffs on their home markets, on U.S. markets, and on world supply markets. It should be noted that domestic production here includes that by the Lome countries, as their products enter the EC without a tariff. The consistent result across all scenarios is that tariffs raise prices on dutiable imports by a large amount, between 17 and 22 percent, and they reduce the quantity of imports by a large amount. The EC's tariff also has substantial effects on the U.S. market, because it depresses the world supply price of tuna, lowering the cost of imported tuna in the U.S. market. As a result, U.S. consumers substitute away from U.S. domestic tuna to imported tuna. Both the price of domestic tuna and the quantity produced decline as a result. The magnitude of these effects on the U.S. market are substantially lower than the effects of the EC tariff on the home market. Nevertheless they are substantial. Under the base-line scenario, the current EC tariff reduces the price of U.S. domestic canned tuna by 4.4 percent and the quantity of production by 8.8 percent.

As is the case with U.S. tariffs, EC tariffs lead to reduced production by tuna exporters, in consequence of the reduction in the world supply price.

The Impact of Equalizing EC Tariffs With Those of the U.S.

If a rise in the EC tariff hurts both U.S. producers and third-country producers (although it benefits consumers outside the EC), a decline in the EC tariff to the U.S. rate benefits producers outside the EC. The results of this sort of tariff equalization are presented in Tables 6-6 and 6-7.

Table 6-4
Effects of raising U.S. tariffs to the EC level[1]

Trading region	Scenarios: Lower bound, Low supply elasticity (1)[2]	Lower bound, High supply elasticity (5)[2]	Baseline, Medium supply elasticity (2)[2]	Upper bound, Low supply elasticity (1)[2]	Upper bound, High supply elasticity (5)[2]
	Percent				
Effect on U.S.:					
Price of imported tuna	+7.6	+8.6	+7.7	+7.3	+7.5
Quantity of imported tuna	-32.1	-41.9	-32.4	-19.7	-72.1
Price of domestic tuna	+3.0	+1.9	+6.1	+7.3	+7.1
Quantity of domestic tuna	+3.0	+9.5	+12.3	+7.3	+35.5
Effect on World:					
Price of traded tuna	-2.6	-1.6	-2.5	-2.9	-2.7
Quantity produced in exporting countries	-2.6	-8.2	-5.1	-2.9	-13.7

[1] The U.S. rate was increased from 12.5 percent to the EC rate of 24 percent.
[2] These values are used for supply elasticities in the analysis.

Table 6-5
Effects of the EC tariff in the EC, U.S., and World Markets

Trading region	Scenarios: Lower bound, Low supply elasticity (1)[1]	Lower bound, High supply elasticity (5)[1]	Baseline, Medium supply elasticity (2)[1]	Upper bound, Low supply elasticity (1)[1]	Upper bound, High supply elasticity (5)[1]
	Percent				
Effect on EC:					
Price of imported tuna	+17.1	+20.5	+18.5	+17.7	+21.5
Quantity of imported tuna	-66.3	-76.1	-58.0	-36.2	-57.9
Price of domestic tuna	+7.5	+6.4	+15.4	+17.5	+21.0
Quantity of domestic tuna	+7.5	+32.2	+30.9	+17.5	+104.9
Effect on World:					
Price of traded tuna	-6.9	-3.5	-5.5	-6.3	-2.5
Quantity produced in exporting countries	-6.9	-17.5	-11.0	-6.3	-12.3
Effect on U.S.:					
Price of imported tuna	-6.9	-3.5	-5.5	-6.3	-2.5
Quantity of imported tuna	+29.0	+17.1	+23.2	+16.8	+23.7
Price of domestic tuna	-2.7	-0.8	-4.4	-6.2	-2.3
Quantity of domestic tuna	-2.7	-3.9	-8.8	-6.2	-11.7

[1] These values are used for supply elasticities in the analysis.

Two tables are presented because there are two ways that the EC could implement an equalization of tariffs. In the strictest sense of equalizing tariff structures the EC could adopt the U.S. multi-tiered tariff (Table 6-6). Alternatively, the EC could adopt the U.S. average tariff rate of 10.6 percent. (Table 6-7), while the U.S. also moves from its tariff-rate quota system to a single 10.6 percent rate. In both cases, the effect on the United States is to increase prices for imported and domestic tuna, to increase domestic production, and to decrease imports.

However, as expected, the estimated effects on the United States of the lowered EC tariff (tables 6-6 and 6-7) are not nearly as substantial as those induced by raising U.S. tariffs to EC levels (table 6-4). The effects on price and quantity of U.S. imports are approximately three times as great for raising the U.S. tariff as for lowering the EC tariff.

Table 6-6
Effects of lowering the EC tariff to the U.S. marginal rate[1]

Trading region	Scenarios: Lower bound, Low supply elasticity (1)[2]	Lower bound, High supply elasticity (5)[2]	Baseline, Medium supply elasticity (2)[2]	Upper bound, Low supply elasticity (1)[2]	Upper bound, High supply elasticity (5)[2]
	Percent				
Effect on EC:					
Price of imported tuna	-6.1	-7.5	-6.5	-6.3	-6.8
Quantity of imported tuna	+30.2	+39.4	+29.5	+17.2	+57.3
Price of domestic tuna	-2.0	-1.4	-5.1	-6.2	-6.5
Quantity of domestic tuna	-2.0	-7.1	-10.2	-6.2	-32.6
Effect on World:					
Price of traded tuna	+3.1	+1.8	+2.8	+3.0	+2.4
Quantity produced in exporting countries	+3.1	+9.1	+5.6	+3.0	+12.7
Effect on U.S.:					
Price of imported tuna	+3.1	+1.8	+2.8	+3.0	+2.4
Quantity of imported tuna	-13.2	-8.8	-11.8	-8.0	-23.5
Price of domestic tuna	+1.3	+0.4	+2.2	+2.9	+2.3
Quantity of domestic tuna	+1.3	+2.0	+4.5	+2.9	+11.6

[1] The EC rate is lowered from 24 percent to the U.S. marginal rate of 12.5 percent.
[2] These values are used for supply elasticities in the analysis.

Table 6-7
Effects of lowering the EC tariff to the U.S. average rate[1]

Trading region	Scenarios: Lower bound, Low supply elasticity (1)[2]	Lower bound, High supply elasticity (5)[2]	Baseline, Medium supply elasticity (2)[2]	Upper bound, Low supply elasticity (1)[2]	Upper bound, High supply elasticity (5)[2]
	Percent				
Effect on EC:					
Price of imported tuna	-6.8	-8.4	-7.1	-6.8	-7.5
Quantity of imported tuna	+33.1	+44.6	+34.1	+18.7	+62.9
Price of domestic tuna	-2.2	-1.6	-5.7	-6.7	-7.2
Quantity of domestic tuna	-2.2	-8.0	-11.2	-6.7	-35.8
Effect on World:					
Price of traded tuna	+4.0	+2.4	+3.7	+4.0	+3.3
Quantity produced in exporting countries	+4.0	+11.9	+7.3	+4.0	+16.5
Effect on U.S.:					
Price of imported tuna	+2.3	+1.1	+2.0	+2.3	+1.6
Quantity of imported tuna	-10.3	-3.4	-8.5	-6.3	-15.5
Price of domestic tuna	+1.1	+0.2	+1.6	+2.2	+1.5
Quantity of domestic tuna	-+1.1	+0.8	+3.2	+2.2	+7.6

[1] The EC rate is lowered from 24 percent to the U.S. average rate of 10.6 percent.
[2] These values are used for supply elasticities in the analysis.

Effects of the U.S. Tariff on Domestic Harvesters

A tariff on canned tuna increases production by domestic canners, and they in turn increase their purchases of raw tuna. If the supply of raw tuna is less than fully elastic, this means that the price of raw tuna will be bid up and, other things equal, domestic harvesters will find higher prices and a larger market for their catch. On this basis the American Tunaboat Association urges higher tariffs on canned tuna.

There is nevertheless reason to believe that the impact of a tariff increase on domestic harvesters would be small or even adverse. The reason is that raw tuna is increasingly a traded commodity whose price is set on the world market. An increase in the U.S. tariff would raise prices and reduce total U.S. consumption, even though it increases domestic production. The resultant reduction in overseas production would reduce the world price of raw frozen tuna. Thus domestic harvesters may, like foreign harvesters, be adversely affected by tariffs.

One key issue in deciding the matter is what is the elasticity of supply of raw tuna for domestic canneries. If canneries are able to purchase as much raw tuna as desired without having to pay an increasing premium over the world price,[24] then domestic harvesters will suffer from the tariff. If, on the other hand, an increasing premium must be paid to draw in raw tuna from a wider supply area, then the domestic price of raw tuna will rise above the world price and, to that extent, domestic harvesters will benefit.

Of course, this premium may not be large enough to offset the general decline in the world price of raw tuna induced by an increase in the U.S. tariff. Unfortunately data is not available to decide the matter, and tuna harvesters and canners express considerable disagreement over the question.[25]

Another consideration, noted by the canner Pan-Pacific,[26] is that a tariff could be the means of preserving a market for frozen tuna that would otherwise be lost. If in fact such higher prices would ensure the long-run viability of canneries like Pan-Pacific, then this would benefit the California inshore tuna fleets. These fleets are made up of small vessels that unlike their larger cousins, the tuna purse seiners, cannot travel to other fishing grounds closer to other canneries (e.g., the western Pacific). A loss of the California market for frozen tuna probably would create a significant economic loss for these producers, for whom the issue is not simply changes in prices, but the possible loss of the market altogether.

Competitive Effects of EC Fishery Access Agreements

The details of various tuna-fishery access agreements negotiated by the EC with island States and other coastal nations in the Indian Ocean and elsewhere are described earlier in this report.[27] The question before us is to what extent these agreements restrict access of U.S.-flag tuna vessels to tuna resources within the waters of such nations and island states. The questions is limited to the harvesting sector, where the direct effects are felt; no information was received as to any significant competitive effects on the processing sector. In short, the agreements negotiated by the EC do not restrict access of U.S.-flag vessels to the water. The rights to fish are sold by the states and are available to any party willing to pay for access.

A corollary question raise by the industry is the competitive effect of these agreements. Do these agreements affect the overall world supply and conseqeuntly harm U.S.-flag harvesters? Specifically, do U.S.-flag vessels suffer because the EC rather than the EC-flag harvestors pays the access fee. Assuming no policy related factors affect the price, and that the Coastal states desire to capture the full value of the resource, the full EC payment can be taken as a reliable indicator of the value of the tuna fisheries in question. No better indicator of such value is available. The Coastal States in this way capture the economic rent generated by the tuna migration through national waters. By taking on the burden of the payment, the EC confers upon the EC-flag harvesters a direct cost reduction of producing tuna from those waters.

The gap between costs and revenues offered by the EC payment provides an economic buffer for EC harvesters, enabling them to better weather short-run fluctuations in frozen-tuna prices, fuel prices, and other variables. Production, however, would not significantly change. The agreements typically set limits on the annual allowable tuna catch. The tuna in those waters would still be worth harvesting whether the nations charged a zero access fee or a fee equal to the full difference in harvesting costs between its stocks and other, marginally profitable ones. Therefore, charging an access fee (whether equal to or less than the true value of the fish stocks) does not reduce harvesting activity below that if access were free. As a consequence, production is likely no greater under EC-negotiated agreements than that which would occur as a result of individual negotiations.

[24] This premium is in part the result of transportation costs from more distant fishing grounds that would need to be drawn from if production were increased.

[25] The American Tunaboat Association argues that frozen-tuna prices follow canned-tuna prices, and thus it urges policies (e.g., tariffs) that would raise the U.S. price of canned tuna as a means to boost frozen-tuna prices. See prehearing brief of the American Tunaboat Association, July 27, 1990, pp. 2, 34, 39, 43. In contrast, the Van Camp Seafood Company (the maker of "Chicken of the Sea" tuna) argues that a higher canned-tuna price would reduce consumption, which would reduce canneries' demand for frozen tuna. See written statement of the Van Camp Seafood Company, p. 3.

[26] See testimony of GR Foods (parent company of Pan-Pacific), hearing transcript, pp. 145-150.

[27] In the 1980s, the EC embarked on a policy of combining foreign economic assistance to developing coastal economies (including some former colonies of some EC Member States) with economic and logistical support to its expanding tuna industry, particularly the harvesting sector. With large amounts of economic aid (mostly in cash but also in grants-in-kind), the EC arranged agreements with coastal developing economies that enabled them to grant to tuna harvesters flying the flags of EC Member States access to their fishery resources. Thus, for example, an agreement was reached in October 1989 (amending an earlier treaty) with Madagascar, whereby Madagascar would grant up to 45 licenses to EC tuna vessels, which could then harvest up to 12,000 tons of tuna annually. As the number of vessels and the tuna catch increased, so did the EC-contribution. A sum of 600,000 ECU was to be paid to the Malagasy treasury to finance Malagasy scientific programs. Other agreements (e.g., with Senegal, the Seychelles, Gabon, Guinea, and other nations) are broadly similar (see ch. 4).

APPENDIX A
LETTERS OF REQUEST FROM CONGRESS

United States Senate

COMMITTEE ON FINANCE
WASHINGTON, DC 20510-6200

March 1, 1990

The Honorable
Anne Brunsdale
Chairman
United States International
Trade Commission
Washington, D.C. 20436

Dear Madam Chairman:

The Committee on Finance requests that the United States International Trade Commission conduct an investigation under section 332(g) of the Tariff Act of 1930, as amended [19 U.S.C. 1332(g)], for the purpose of assessing the competitive condition of the U.S. and European canned tuna industries in domestic and foreign markets.

In its investigation, the Commission should, to the extent possible, develop information pertinent to an evaluation of the competitive position of the tuna harvesting and processing sectors of the U.S. industry and of the industries in the European Community and other foreign countries, including, but not limited to, the following subjects:

(1) 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 industry structure such as ownership changes in the tuna canning sector, steps the U.S. fleet and processors have taken to adjust to import competition and the results of such measures, the availability of tuna resources, and government involvement in the industry.

(2) Foreign industries.--Information on the tuna industry in the European Community and in other important producing countries. To the extent information can be readily obtained, this should include 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, industry structure, the availability of tuna resources to foreign fleets, and government involvement in the industry.

(3) The U.S. market.--A description of the tuna market, channels of distribution, supply and demand factors, inspection standards and procedures, levels and trends in U.S. consumption, trade, and prices for both domestic and foreign raw and canned tuna.

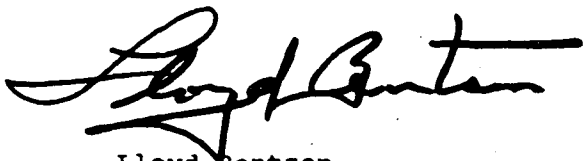
(4) The European market.--A description of the market for raw and canned tuna, channels of distribution, supply and demand factors, inspection standards and procedures, levels and trends in consumption, trade, and prices for both domestic and foreign raw and canned tuna.

(5) Trade distorting practices maintained by the European Community and other major producing and consuming areas.--To the extent possible, a description and assessment of the competitive effects on U.S. and foreign tuna industries of tariffs and other trade barriers encountered by U.S. or third-country exporters; and EC fishery agreements with nations and island states in the Indian Ocean and elsewhere, that may restrict access of U.S.-flag tuna vessels to tuna resources within the waters of such nations and island states. This assessment should include, inter alia, an evaluation of the likely competitive effects on U.S. and European production and trade of an equalization of U.S. and EC tariffs and other trade barriers in the markets for raw and canned tuna.

The Commission should report the results of the investigation no later than nine months after receipt of this letter.

Thank you for your cooperation in and attention to this important matter.

Sincerely,



Lloyd Bentsen

RECEIVED
MAR 13 A10 : 10
OFFICE OF THE SECRETARY
DOCKET/USITC

COMMITTEE ON WAYS AND MEANS
U.S. HOUSE OF REPRESENTATIVES
WASHINGTON, DC 20515

March 5, 1990

DOCKET

DOCKET NUMBER 1552
Office of the Secretary
U.S. Trade Commission

RECEIVED
90 MAR 12 A11 : 45

The Honorable Anne Brunsdale
Chairman
U.S. International Trade Commission
500 E Street, S.W.
Washington, D.C. 20436

Dear Madam Chairman:

The Committee on Ways and Means hereby requests that the United States International Trade Commission conduct an investigation under section 332(g) of the Tariff Act of 1930, as amended (19 U.S.C. 1332(g)), for the purpose of assessing the competitive condition of the U.S. and European canned tuna industries in domestic and foreign markets.

In its investigation, the Commission should, to the extent possible, develop information pertinent to the evaluation of the competitive position of the tuna harvesting and processing sectors of the U.S. industry and of these sectors in the EC and other foreign countries, including, but not limited to, the following subjects:

(1) 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 industry structure (such as ownership changes in the tuna canning sector), steps the U.S. fleet and processors have taken to adjust to import competition and the results of such measures, and the availability of tuna resources (including any government restrictions or international agreements affecting such availability).

(2) Foreign Industries -- Information on the tuna industry in the EC and in other important producing countries. To the extent information can be readily obtained, this should include 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, industry structure, and the availability of tuna resources (including any government restrictions or international agreements affecting such availability).

(3) The U.S. Market -- A description of the tuna market, channels of distribution, supply and demand factors, inspection standards and procedures, levels and trends in U.S. consumption, trade, and prices for both domestic and foreign raw and canned tuna.

(4) The European Market -- A description of the market for raw and canned tuna, channels of distribution, supply and demand factors, inspection standards and procedures, levels and trends in consumption, trade, and prices for both domestic and foreign raw and canned tuna.

(5) Trade-distorting Practices Maintained by the European Community and Other Major Producing and Consuming Areas -- To the extent possible, a description and assessment of the competitive effects on U.S. and foreign tuna industries of: tariffs encountered by U.S. or third-country exporters, and EC fishery agreements with nations and island states in the Indian Ocean and elsewhere that may restrict access of U.S.-flagged tuna vessels to tuna resources within waters of such nations and island states. This assessment should include, inter alia, an evaluation of the likely competitive effects on U.S. and European production and trade of an equalization of U.S. and EC tariffs and other trade barriers in the markets for raw and canned tuna.

The Commission should report the results of the investigation no later than 9 months following receipt of this letter.

Thank you for your cooperation in and attention to this important matter.

Sincerely yours,

Dan Rostenkowski
Chairman

DR/jnc

bcc: The Honorable Robert T. Matsui

APPENDIX B
FEDERAL REGISTER NOTICE OF THE INVESTIGATION

100–418 (Aug. 23, 1988), amended section 337 to provide that under certain circumstances the Commission shall presume the facts alleged in the complaint to be true and, upon request, issue a limited exclusion and/or cease and desist orders if the complainant is seeking relief solely affecting defaulting respondents. The Commission found that all of the statutory prerequisites for granting limited relief against defaulting respondents were present in this investigation. A complaint was filed against each defaulting respondent, copies of the complaint and notice of investigation were served on each defaulting respondent, each defaulting respondent failed to respond to the complaint and notice or otherwise failed to appear to answer the complaint and notice, each defaulting respondent failed to show good cause why it should not be found in default, and complainant requested relief limited solely to the defaulting respondents. The Commission further determined that the public interest factors enumerated in 19 U.S.C. 1337(g)(1) do not preclude the issuance of such relief.

The Commission determined that respondents' bond under the limited exclusion order during the Presidential review period shall be in the amount of 100 percent of the entered value of the imported articles.

Copies of the Commission's orders 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, 500 E. Street SW., Washington, DC 20436, telephone 202–252–1000. Hearing-impaired individuals are advised that information about this matter can be obtained by contacting the Commission's TDD terminal, 202–252–1810.

By order of the Commission.

Issued: April 11, 1990.

Kenneth R. Mason,

Secretary.

[FR Doc. 90–8968 Filed 4–17–90; 8:45 am]

BILLING CODE 7020–02–M

[Inv. No. 337–TA–302]

In the Matter of Certain Self-Inflating Mattresses; Commission Decision Not To Review an Initial Determination Terminating Investigation With Prejudice Based Upon Complainant's Motion To Terminate

AGENCY: U.S. International Trade Commission.

ACTION: Nonreview of initial determination (ID) granting complainant's motion to terminate the investigation with prejudice.

SUMMARY: The Commission has determined not to review the ID (Order No. 11) terminating the above-captioned investigation. The ID was based upon complainant Cascade Designs, Inc.'s motion to terminate the investigation. The motion was opposed by respondents Gymwell Corporation and Goodway Corporation. The Commission investigative attorney did not oppose the motion. Respondents filed a petition for review of the ID. No agency comments were filed.

FOR FURTHER INFORMATION CONTACT: Rhonda M. Hughes, Esq., Office of the General Counsel, U.S. International Trade Commission, telephone (202) 252–1083. Hearing-impaired individuals are advised that information on this matter can be obtained by contacting the Commission's TDD terminal at (202) 252–1810.

SUPPLEMENTARY INFORMATION: This action is taken under the authority of section 337 of the Tariff Act of 1930 (19 U.S.C. 1337) and Commission interim rule § 210.53 (19 CFR 210.53).

Respondents filed a request that the Commission institute an ancillary proceeding to determine if complaint has abused Commission process. The Commission will decide at a later date whether to institute such a proceeding.

Copies of the nonconfidential version of the 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, 500 E Street SW., Washington, DC 20436; telephone: (202) 252–1802.

By order of the Commission.

Issued: April 11, 1990.

Kenneth R. Mason,

Secretary.

[FR Doc. 90–8969 Filed 4–17–90; 8:45 am]

BILLING CODE 7020–02–M

[Investigation No. 332–291]

Tuna; Competitive Conditions Affecting U.S. and European Tuna Industries in Domestic and Foreign Markets

AGENCY: United States International Trade Commission.

ACTION: Institution of investigation, scheduling of hearing, and request for comments in connection with the investigation.

EFFECTIVE DATE: April 5, 1990.

SUMMARY: Following receipt on March 2, 1990, of a request from the Committee on Finance, U.S. Senate, and on March 12, 1990, of a similar request from the Committee on Ways and Means, U.S. House of Representatives, the Commission instituted investigation No. 332–291 under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)) for the purpose of providing the following information on the competitive conditions of the U.S. and European canned tuna industries in domestic and foreign markets:

(1) *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 industry structure such as ownership changes in the tuna canning sector, steps the U.S. fleet and processors have taken to adjust to import competition and the results of such measures, the availability of tuna resources, and government involvement in the industry.

(2) *Foreign Industries*—Information on the tuna industry in the EC and in other important producing countries. To the extent information can be readily obtained, this would include 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, industry structure, the availability of tuna resources to foreign fleets, and government involvement in the industry.

(3) *The U.S. Market*—A description of the tuna market, channels of distribution, supply and demand factors, inspection standards and procedures, levels and trends in U.S. consumption, trade, and prices for both domestic and foreign raw and canned tuna.

(4) *The European Market*—A description of the market for raw and canned tuna, channels of distribution, supply and demand factors, inspection standards and procedures, levels and trends in consumption, trade, and prices for both domestic and foreign raw and canned tuna.

(5) *Trade-distorting Practices Maintained by the European Community and Other Major Producing and Consuming Areas*—To the extent possible, a description and assessment of the competitive effects on U.S. and

foreign tuna industries of the following: tariffs and other trade barriers encountered by U.S. or third-country exporters; and EC fishery agreements with nations and island states in the Indian Ocean and elsewhere, that may restrict access of U.S.-flag tuna vessels to tuna resources within the waters of such nations and island states. This assessment would include, inter alia, an evaluation of the likely competitive effects on U.S. and European production and trade of an equalization of U.S. and EC tariffs and other trade barriers in the markets for raw and canned tuna.

As requested by the Committees, the Commission will seek to report the results of its investigation by December 3, 1990.

FOR FURTHER INFORMATION CONTACT: Roger Corey (202-252-1327) or David Ingersoll (202-252-1309), Agriculture Division, Office of Industries, U.S. International Trade Commission. Hearing-impaired persons can obtain information on this investigation by contacting the Commission's TDD terminal on (202) 252-1810.

PUBLIC HEARING: A public hearing in connection with this investigation will be held in the Commission Hearing Room, 500 E Street SW., Washington, DC, 20436, beginning at 9:30 a.m. on August 16, 1990. All persons have the right to appear by counsel or in person, to present information, and to be heard. Persons wishing to appear at the public hearing should file a letter asking to testify (state the names and titles of witnesses) with the Secretary, United States International Trade Commission, 500 E Street SW., Washington, DC, 20436, no later than the close of business (5:15 p.m.), August 1, 1990. In addition, persons testifying must file prehearing briefs (original and 14 copies) with the Secretary by the close of business on August 3, 1990. Any posthearing briefs should be filed not later than the close of business on September 14, 1990.

WRITTEN SUBMISSIONS: Interested persons may submit written statements concerning the investigation. To be assured of consideration, written statements must be received by the close of business on September 14, 1990. Commercial or financial information that 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 to 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. All submissions should be addressed to the Secretary at the Commission's office in Washington, DC.

By order of the Commission.
Issued: April 6, 1990.

Kenneth R. Mason,
Secretary.

[FR Doc. 90-8972 Filed 4-17-90; 8:45 am]
BILLING CODE 7020-02-M

INTERSTATE COMMERCE COMMISSION

[Finance Docket No. 31618]

C&S Railroad Corp. Modified Rail Certificate

On March 12, 1990, a notice was filed by C&S Railroad Corporation (C&S) for a modified certificate of public convenience and necessity under 49 CFR 1150.23. By agreement with the Carbon County Railroad Commission (CCRRC) and the Schuylkill County Rail Transport Authority (SCRTA), C&S is authorized to operate over rail lines: (1) Between Packerton Junction, PA (milepost 0.0) and Haucks, PA (milepost 19.5), a distance of 19.5 miles (the Nesquehoning Branch); (2) between East Mahoney Junction, PA (milepost 103.0) and Lofty, PA (milepost 110.4), a distance of 7.4 miles (the Catawissa Branch); and (3) between York Junction, PA (milepost 148.3) and Delano, PA (milepost 158.2), a distance of 9.9 miles (the Shimer Running Track). The lines to be operated connect with Consolidated Rail Corporation (Conrail) at Packerton Junction and York Junction.

Prior to abandonment, the Nesquehoning Branch was owned by Reading Company (Reading). It was not conveyed to Conrail under the Final System Plan. Operations were continued on the line by Conrail as designated operator appointed by the Pennsylvania Department of Transportation. The line was acquired and is currently owned by the County of Carbon and is administered by CCRRC. The Catawissa Branch also was owned by Reading and not conveyed to Conrail under the Final System Plan. The line was acquired and is currently owned by SCRTA. The Shimer Running Track was abandoned by Conrail pursuant to the Commission's decision in Docket No. AB-167 (Sub-No. 397N), *Conrail Abandonment Between York Jct. and Delano, PA* (not printed), served June 8, 1983, and is now owned by SCRTA.

The Panther Valley Railroad Company (PVRR) was the previous operator over the lines pursuant to modified certificates issued in Finance Docket No. 30252, *Panther Valley Railroad Corporation Modified Rail Certificate* (not printed), served August 23, 1983, and Finance Docket No. 31049, *Panther Valley Railroad Corp. Modified Rail Certificate* (not printed), served June 9, 1987. PVRR terminated its service on March 10, 1990, pursuant to a notice filed with the Commission on January 11, 1990.

This notice must be served on the Association of American Railroads (Car Service Division), as agent of all railroads subscribing to the car-service and car-hire agreement, and on the American Short Line Railroad Association.

Dated: April 10, 1990.

By the Commission, Jane F. Mackall, Director, Office of Proceedings.

Noreta R. McGee,
Secretary.

[FR Doc. 90-8880 Filed 4-17-90; 8:45 am]
BILLING CODE 7035-01-M

DEPARTMENT OF JUSTICE

Lodging of Consent Decree Pursuant to the Clean Air Act

In accordance with Departmental policy, 28 CFR 50.7, notice is hereby given that on April 6, 1990, a proposed Consent Decree in *United States* v. *Lyon & Associates Realty, et al.*, Civil Action No. CIVS 89-0809 RAR-EM, was lodged with the United States District Court for the Eastern District of California. The Complaint sought penalties and injunctive relief against Lyon & Associates Realty, George E. King Construction and Frederick B. Curtis, Inc. for violations of regulations issued under the Clean Air Act, 42 U.S.C. 7601 *et seq.*, regarding the handling and disposal of friable asbestos. 40 CFR 61.140-61.156.

The proposed Consent Decree imposes an injunction against future violations of the Clean Air Act, including specific steps to assure proper procedures are followed with respect to notification to regulatory agencies and with respect to the handling and disposal of asbestos. The proposed Consent Decree also imposes a civil penalty of $65,000.

The Department of Justice will receive for a period of thirty (30) days from the date of this publication, comments relating to the proposed Consent Decree. Comments should be addressed to the Assistant Attorney General of the Land and Natural Resources Division, Department of Justice, P.O. Box 7611, Washington, DC 20044. Comments

APPENDIX C
LIST OF WITNESSES APPEARING AT HEARING

CALENDAR OF PUBLIC HEARING

Those listed below appeared as witnesses at the United States International Trade Commission's hearing:

Subject	:	TUNA: COMPETITIVE CONDITIONS AFFECTING THE U.S. AND EUROPEAN TUNA INDUSTRIES IN DOMESTIC AND FOREIGN MARKETS
Inv. No.	:	332-291
Date and Time	:	August 16, 1990 - 9:30 a.m.

Sessions were held in connection with the investigation in the Main Hearing Room 101, United States International Trade Commission, 500 E Street, S.W., in Washington, D.C.

Government Appearances:

Hector Melendez, Deputy Administrator, Economic Development Administration, Commonwealth of Puerto Rico
(accompanied by John Stewart, Economic Advisor)

William P. Coleman, Chief of Staff, Office of the Governor, American Samoa Government (accompanied by Fred Rodewagen, Washington Representative)

WITNESS AND ORGANIZATION:

American Tunaboat Association
San Diego, CA

August Felando, President

Harris & Ellsworth
Washington, D.C.
On behalf of

Association of Food Industries

Larry Abramson, President
Camerican (Division of ConAgra)

Herbert E. Harris II)
)--OF COUNSEL
Cheryl Ellsworth)

- more -

WITNESS AND ORGANIZATION:

Mitsubishi Foods (MC), Inc.
and
Caribe Tuna, Inc.
San Diego, CA

Richard Atchison, President

Reinhardt & Schachter
Newark, New Jersey
On behalf of

Union General de Trabajadores (UGT)
(Bargaining Representative, Puerto Rico
Tuna Industry Employees)

Osvaldo Romero, Secretary of Treasury

Paul Schachter)--OF COUNSEL

American Federal of Labor and Congress
of Industrial Organizations
Washington, D.C.

Rudy Oswald, Director, Department of
Economic Research

Fishermen's Union of America
San Pedro, California

Theresa Hoinsky, President,
Fishermen's Union of America, AFL-CIO,
Pacific and Caribbean Area
(Seafarers International Union)

- more -

WITNESS AND ORGANIZATION:

United Industrial Workers, Service, Transportation
Professional and Government of North America
AFL-CIO
Camp Springs, MD 20746

Steve Edney, National Director

Southern California Cannery Workers:

Marshall Murphy

Marge Marques

Gloria Craft

Carolina Patt

Olsson, Frank and Weeda
Washington, D.C.
On behalf of

Pan Pacific Fisheries, Inc.
(of GR Foods, Inc.)

Tony Trutanich, Vice President

Charles F. Woodhouse, President,
GR Foods, Inc.

David F. Weeda)
)--OF COUNSEL
David L. Durkin)

Howrey & Simon
Washington, D.C.
On behalf of

Starkist Seafood Company]

Robert W. Hetzler, Executive Vice-President

Edward P. Henneberry)
)--OF COUNSEL
Mark V. Matera)

- end -

APPENDIX D
EXPLANATION OF THE RATES OF DUTY APPLICABLE TO TUNA AND SELECTED PORTIONS OF THE HARMONIZED TARIFF SCHEDULES OF THE UNITED STATES, ANNOTATED, 1990

TARIFF AND TRADE AGREEMENT TERMS

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

The *Harmonized Commodity Description and Coding System*, known as the Harmonized System or HS, is intended to serve as the single modern product nomenclature for use in classifying products for customs tariff, statistical, and transport documentation purposes. Based on the Customs Cooperation Council Nomenclature, the HS is a detailed classification structure containing approximately 5,000 headings and subheadings describing articles in trade. The provisions are organized in 96 chapters arranged in 20 sections which, along with the interpretative rules and the legal notes to the chapters and sections, form the legal text of the system. Parties to the HS Convention agree to base their customs tariffs and statistical programs upon the HS nomenclature. Recent legislation replaced the TSUS with an HS-based tariff schedule known as the Harmonized Tariff Schedule of the United States.

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

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

The *Caribbean Basin Economic Recovery Act* (CBERA) affords nonreciprocal tariff preferences to developing countries in the Caribbean Basin area to aid their economic development and to diversify and expand their production and exports. The CBERA, enacted in title II of Public Law 98-67 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; it is scheduled to remain in effect until September 30, 1995. Indicated by the symbol "E" or "E*" in the special duty rates subcolumn of column 1, the CBERA provides duty-free entry to eligible articles the product of, and imported directly from, designated Basin countries, as set forth in general note 3(c)(v) to the HTS.

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

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

The *General Agreement on Tariffs and Trade* (GATT) (61 Stat. (pt. 5) A58; 8 UST (pt. 2) 1786) is the multilateral agreement which sets forth the basic principles governing international trade among its more than 90 signatories. The GATT's main obligations relate to most-favored-nation treatment, the maintenance of scheduled concession rates of duty, and national (nondiscriminatory) treatment for imported products; the GATT also provides the legal framework for customs valuation standards, "escape clause" (emergency) actions, antidumping and countervailing duties, and other measures. The results of GATT-sponsored multilateral tariff negotiations are set forth by way of separate schedules of concessions for each participating contracting party, with the U.S. schedule designated as Schedule XX.

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

Heading/ Subheading	Stat. Suf. & cd	Article Description	Units of Quantity	Rates of Duty		
				General	Special	2
0301		Live fish:				
0301.10.00	00 4	Ornamental fish	X	Free		Free
		Other live fish:				
0301.91.00	00 8	Trout (Salmo trutta, Salmo gairdneri, Salmo clarki, Salmo aguabonita, Salmo gilae)	X	Free		Free
0301.92.00	00 5	Eels (Anguilla spp.)	X	Free		Free
0301.93.00	00 4	Carp	X	Free		Free
0301.99.00	00 8	Other	X	Free		Free
0302		Fish, fresh or chilled, excluding fish fillets and other fish meat of heading 0304:				
		Salmonidae, excluding livers and roes:				
0302.11.00	00 2	Trout (Salmo trutta, Salmo gairdneri, Salmo clarki, Salmo aguabonita, Salmo gilae)	kg	Free		2.2¢/kg
0302.12.00		Pacific salmon (Oncorhynchus spp.), Atlantic salmon (Salmo salar) and Danube salmon (Hucho hucho)		Free		4.4¢/kg
	02 9	Atlantic	kg			
	12 7	Chinook (king)	kg			
	22 5	Chum (dog)	kg			
	32 3	Pink (humpie)	kg			
	42 1	Sockeye (red)	kg			
	52 8	Coho (silver)	kg			
	62 6	Other	kg			
0302.19.00	00 4	Other	kg	Free		2.2¢/kg
		Flat fish (Pleuronectidae, Bothidae, Cynoglossidae, Soleidae, Scophthalmidae and Citharidae), excluding livers and roes:				
0302.21.00		Halibut and Greenland turbot (Reinhardtius hippoglossoides, Hippoglossus hippoglossus, Hippoglossus stenolepis)		Free		4.4¢/kg
	10 8	Atlantic	kg			
	20 6	Pacific	kg			
	90 1	Other (including Greenland)	kg			
0302.22.00	00 9	Plaice (Pleuronectes platessa)	kg	1.1¢/kg	Free (A,CA,E,IL)	2.2¢/kg
0302.23.00	00 8	Sole (Solea spp.)	kg	1.1¢/kg	Free (A,CA,E,IL)	2.2¢/kg
0302.29.00		Other		1.1¢/kg	Free (A,CA,E,IL)	2.2¢/kg
	10 0	Flounder	kg			
	90 3	Other	kg			
		Tunas (of genus Thunnus), skipjack or stripe-bellied bonito (Euthynnus (Katsuwonus) pelamis), excluding livers and roes:				
0302.31.00	00 8	Albacore or longfinned tunas (Thunnus alalunga)	kg	Free		Free
0302.32.00	00 7	Yellowfin tunas (Thunnus albacares)	kg	Free		Free
0302.33.00	00 6	Skipjack or stripe-bellied bonito	kg	Free		Free
0302.39.00		Other		Free		Free
	20 6	Bluefin (Thunnus thynnus)	kg			
	40 2	Other	kg			

Heading/ Subheading	Stat. Suf. & cd	Article Description	Units of Quantity	Rates of Duty 1 General	Rates of Duty 1 Special	Rates of Duty 2
0303		Fish, frozen, excluding fish fillets and other fish meat of heading 0304:				
0303.10.00		Pacific salmon (Oncorhynchus spp.), excluding livers and roes	.....	Free		4.4¢/kg
	12 8	Chinook (king)	kg			
	22 6	Chum (dog)	kg			
	32 4	Pink (humpie)	kg			
	42 2	Sockeye (red)	kg			
	52 9	Coho (silver)	kg			
	62 7	Other	kg			
		Other salmonidae, excluding livers and roes:				
0303.21.00	00 9	Trout (Salmo trutta, Salmo gairdneri, Salmo clarki, Salmo aguabonita, Salmo gilae)	kg.....	Free		2.2¢/kg
0303.22.00	00 8	Atlantic salmon (Salmo salar) and Danube salmon (Hucho hucho)	kg.....	Free		4.4¢/kg
0303.29.00	00 1	Other	kg.....	Free		2.2¢/kg
		Flat fish (Pleuronectidae, Bothidae, Cynoglossidae, Soleidae, Scophthalmidae and Citharidae), excluding livers and roes:				
0303.31.00		Halibut and Greenland turbot (Reinhardtius hippoglossoides, Hippoglossus hippoglossus, Hippoglossus stenolepis)	.....	Free		4.4¢/kg
	10 5	Atlantic	kg			
	20 3	Pacific	kg			
	30 1	Other (including Greenland)	kg			
0303.32.00	00 6	Plaice (Pleuronectes platessa)	kg.....	1.1¢/kg	Free (A,CA,E,IL)	2.2¢/kg
0303.33.00	00 5	Sole (Solea spp.)	kg.....	1.1¢/kg	Free (A,CA,E,IL)	2.2¢/kg
0303.39.00		Other	.....	1.1¢/kg	Free (A,CA,E,IL)	2.2¢/kg
	10 7	Flounder	kg			
	90 0	Other	kg			
		Tunas (of the genus Thunnus), skipjack or stripe-bellied bonito (Euthynnus (Katsuwonus) pelamis), excluding livers and roes:				
0303.41.00	00 5	Albacore or longfinned tunas (Thunnus alalunga)	kg.....	Free		Free
0303.42.00		Yellowfin tunas (Thunnus albacares)	.....	Free		Free
	20 0	Whole fish	kg			
		Other:				
	40 8	Head-on	kg			
	60 1	Other	kg			
0303.43.00	00 3	Skipjack or stripe-bellied bonito	kg.....	Free		Free
0303.49.00		Other	.....	Free		Free
	20 3	Bluefin (Thunnus thynnus)	kg			
	40 9	Other	kg			

Heading/ Subheading	Stat. Suf. & cd	Article Description	Units of Quantity	Rates of Duty 1 General	Rates of Duty 1 Special	Rates of Duty 2
1604 (con.)		Prepared or preserved fish; caviar and caviar substitutes prepared from fish eggs (con.):				
		Fish, whole or in pieces, but not minced (con.):				
1604.14		Tunas, skipjack and Atlantic bonito (Sarda spp.):				
		Tunas and skipjack:				
		In airtight containers:				
1604.14.10	00 0	In oil	kg	35%	Free (IL) 28% (CA)	45%
		Not in oil:				
1604.14.20		In containers weighing with their contents not over 7 kg 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 percent of the United States pack of canned tuna during the immediately preceding year, as reported by the National Marine Fisheries Service	.....	6%	Free (IL) 4.8% (CA)	25%
	20 4	Albacore (Thunnus alalunga)	kg			
	40 0	Other	kg			
1604.14.30		Other	.....	12.5%	Free (IL) 10% (CA)	25%
	20 2	Albacore (Thunnus alalunga)	kg			
	40 8	Other	kg			
		Not in airtight containers:				
1604.14.40	00 4	In bulk or in immediate containers weighing with their contents over 6.8 kg each, not in oil	kg	1.1¢/kg	Free (E,IL) 0.8¢/kg (CA)	2.8¢/kg
1604.14.50	00 1	Other	kg	6%	Free (A,E,IL) 4.8% (CA)	25%
		Atlantic bonito:				
1604.14.70	00 7	In oil	kg	4.9%	Free (E,IL) 3.9% (CA)	30%
1604.14.80	00 5	Not in oil	kg	6%	Free (E,IL) 4.8% (CA)	25%
1604.15.00	00 1	Mackerel	kg	6%	Free (A,E,IL) 3.6% (CA)	25%
1604.16		Anchovies:				
		In oil, in airtight containers:				
1604.16.10	00 8	For an aggregate quantity entered in any calendar year not to exceed 3,000 metric tons	kg	3%	Free (A,CA,E,IL)	30%
1604.16.30	00 4	Other	kg	6%	Free (A,CA,E,IL)	30%
		Other:				
1604.16.40	00 2	In immediate containers weighing with their contents 6.8 kg or less each	kg	5%	Free (A,CA,E,IL)	25%
1604.16.60	00 7	Other	kg	Free		2.5%

SUBCHAPTER XV

PRODUCTS OF AMERICAN FISHERIES

U.S. Notes

1. An American fishery, for the purposes of this subchapter, 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.

2. None of the headings in this subchapter 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.

Heading/ Subheading	Stat. Suf. & cd	Article Description	Units of Quantity	Rates of Duty 1 General	Rates of Duty 1 Special	Rates of Duty 2
9815.00.20	00 2	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.....	kg.....	Free		Free
9815.00.40	00 8	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....	kg.....	Free		Free
9815.00.60	00 3	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.....	kg.....	Free		Free

APPENDIX E
FEDERAL REGISTER NOTICE TERMINATING A COUNTERVAILING DUTY ON U.S. IMPORTS OF CANNED TUNA FROM THE PHILIPPINES

than alloy steel, not galvanized, stress-relieved and suitable for use in prestressed concrete. Steel wire strand for prestressed concrete is currently classifiable under item 642.1120 of the Tariff Schedules of the United States Annotated and item number 7312.10.30.15 of the Harmonized System.

The review covers seven manufacturers and/or exporters of Japanese steel wire strand for prestressed concrete to the United States and the period December 1, 1985 through November 30, 1986. We deferred review of Mitsui & Co., Ltd. We will cover that firm in a separate review. We could not locate Freyssinet International, and we have no record of shipments from that firm; therefore, we did not include Freyssinet in this administrative review. Should Freyssinet begin exporting the covered merchandise to the United States, we shall treat that company as a new exporter.

There were no known shipments of this merchandise to the United States during the period, and there are no known unliquidated entries.

Final Results of the Review

We invited interested parties to comment on the preliminary results. We received no comments. Based on our analysis, the final results of review are unchanged from those presented in the preliminary results, and we determine that the following weighted-average margins exist for the period December 1, 1985 through November 30, 1986:

Manufacturer/exporter	Margin (percent)
Kobelco Steel Wire, Ltd.	(*)
Mitsubishi Corp.	(*)
Nissho Iwai Co., Ltd.	(*)
Shinko Wire Co., Ltd.	(*)
Suzuki Metal Industry Co., Ltd.	(*)
Tokiwa Sangyo Co., Ltd.	(*)
Tokyo Rope Mfg. Co., Ltd.	(*)

*No shipments during the period. Margins were obtained from the last review where there were shipments.

As provided for in section 751(a)(1) of the Tariff Act, the Department will instruct the Customs Service to collect a cash deposit of estimated antidumping duties for each firm based upon the above margins. For any shipments from the remaining known manufacturers and/or exporters not covered by this review, a cash deposit shall be required at the rates published in the final results of the last administrative review for each of those firms. For any shipments from a new exporter, whose first shipments occurred after November 30, 1986 and who is unrelated to any reviewed firm, or previously reviewed firm, no cash deposit shall be required. These deposit requirements are effective for all shipments of Japanese steel wire strand for prestressed concrete entered, or withdrawn from warehouse, for consumption on or after the date of publication of this notice and shall remain in effect until publication of the final results of the next administrative review.

This administrative review and notice are in accordance with section 751(a)(1) of the Tariff Act (19 U.S.C. 1675(a)(1)) and § 353.53a of the Commerce Regulations (19 CFR 353.53a).

Date: March 21, 1988

Gilbert B. Kaplan,

Acting Assistant Secretary for Import Administration

[FR Doc. 88-6584 Filed 3-24-88; 8:45 am]

BILLING CODE 3510-DS-M

Initiation of Antidumping and Countervailing Duty Administrative Reviews

AGENCY: International Trade Administration, Import Administration, Commerce.

ACTION: Notice of initiation of antidumping and countervailing duty administrative reviews.

SUMMARY: The Department of Commerce has received requests to conduct administrative reviews of various antidumping and countervailing duty orders, findings, and suspension agreements. In accordance with the Commerce Regulations, we are initiating those administrative reviews.

EFFECTIVE DATE: March 25, 1988.

FOR FURTHER INFORMATION CONTACT: William L. Matthews or Richard W. Moreland, Office of Compliance, International Trade Administration, U.S. Department of Commerce, Washington, DC 20230; telephone: (202) 377-5253/2786.

SUPPLEMENTARY INFORMATION:

Background

On August 13, 1985, the Department of Commerce (the Department) published in the **Federal Register** (50 FR 32556) a notice outlining the procedures for requesting administrative reviews. The Department has received timely requests, in accordance with § 353.53a(a)(2), (a)(3), and § 355.10(a)(1) of the Commerce Regulations, for administrative reviews of various antidumping and countervailing duty orders, findings and suspension agreements.

Initiation of Reviews

In accordance with §§ 353.53a(c) and 355.10(c) of the Commerce Regulations, we are initiating administrative reviews of the following antidumping and countervailing duty orders and findings. We intend to issue the final results of these reviews no later than March 31, 1989.

Antidumping duty proceedings and firms	Periods to be reviewed
Racing plates from Canada: Niagara Forging	2/1/87-1/31/88
Steel wire strand for prestressed concrete from Japan: Mitsui	12/1/85-11/30/87

Countervailing duty proceedings	Periods to be reviewed
Unprocessed float glass from Mexico	1/1/87-12/31/87
Carbon steel wire rod from Saudi Arabia	1/1/87-12/31/87

Interested parties are encouraged to submit applications for administrative protective orders as early as possible in the review process.

These initiations and this notice are in accordance with section 751(a) of the Tariff Act of 1930 (19 U.S.C. 1675(a)) and 19 CFR 353.53a(c) and 355.10(c).

Gilbert B. Kaplan,

Acting Assistant Secretary for Import Administration

Date: March 21, 1988.

[FR Doc. 88-6587 Filed 3-24-88; 8:45 am]

BILLING CODE 3510-DS-M

[C-565-0...]

Canned Tuna From the Philippines; Final Results of Changed Circumstances Administrative Review and Revocation of Countervailing Duty Order

AGENCY: International Trade Administration, Import Administration, Commerce.

ACTION: Notice of final results of changed circumstances administrative review and revocation of countervailing duty order.

SUMMARY: On January 20, 1988, the Department of Commerce published the preliminary results of its changed circumstances administrative review of the countervailing duty order on canned tuna from the Philippines and announced its tentative determination to revoke the order. The review covers the period from January 1, 1986.

We gave interested parties an opportunity to comment. We received no comments. We determine that domestic interested parties are no longer interested in continuation of the order, and we are revoking the order on merchandise entered, or withdrawn from warehouse, for consumption on or after January 1, 1988.

EFFECTIVE DATE: January 1, 1988.

FOR FURTHER INFORMATION: Christopher Beach or Bernard Carreau, Office of Compliance, International Trade Administration, U.S. Department of Commerce, Washington, DC 20230; telephone: (202) 377-2786.

SUPPLEMENTARY INFORMATION:

Background

On January 20, 1988, the Department of Commerce ("the Department") published in the **Federal Register** (53 FR 1504) the preliminary results of its changed circumstances administrative review of the countervailing duty order on canned tuna from the Philippines (48 FR 50133, October 31, 1983). The Department has now completed that administrative review in accordance with section 751 of the Tariff Act of 1930 ("the Tariff Act").

Scope of Review

Imports covered by the review are shipments of Philippine tuna packed and preserved in any manner, not in oil, in airtight containers. Such merchandise is currently classifiable under TSUSA item numbers 112.3020, 112.3040, and 112.3460. These imports are currently classifiable under HS item numbers 1604.14.20 and 1604.14.30. The review covers the period from January 1, 1988.

Final Results of Review and Revocation

We gave interested parties an opportunity to comment on the preliminary results and tentative determination to revoke. We received no comments.

As a result of our review, we determine that domestic interested parties are no longer interested in continuation of the countervailing duty order on canned tuna from the Philippines and that the order should be revoked on this basis.

Therefore, we are revoking the order on canned tuna from the Philippines effective January 1, 1988. We will instruct the Customs Service to liquidate, without regard to countervailing duties, all unliquidated entries of this merchandise entered, or withdrawn from warehouse, for consumption on or after January 1, 1988, and to refund with interest any estimated countervailing duties collected with respect to those parties.

This administrative review, revocation, and notice are in accordance with section 751(b) and (c) of the Tariff Act (19 U.S.C. 1675(b), (c)) and 19 CFR 355.41, 355.42.

Gilbert B. Kaplan,

Acting Assistant Secretary, Import Administration.

Date: March 21, 1988.

[FR Doc. 88-6588 Filed 3-24-88; 8:45 am]

BILLING CODE 3510-DS-M

[C-469-004]

Stainless Steel Wire Rod From Spain; Preliminary Results of Countervailing Duty Administrative Review

AGENCY: International Trade Administration, Import Administration, Commerce.

ACTION: Notice of preliminary results of countervailing duty administrative review.

SUMMARY: The Department of Commerce has conducted an administrative review of the countervailing duty order on stainless steel wire rod from Spain. The review covers the period January 1, 1986 through December 31, 1986 and six programs.

As a result of our review, we preliminarily determine the net subsidy to be 1.28 percent *ad valorem* during the period of review. We invite interested parties to comment on these preliminary results.

EFFECTIVE DATE: March 25, 1988.

FOR FURTHER INFORMATION CONTACT: Susan Silver or Paul McGarr, Office of Compliance, International Trade Administration, U.S. Department of Commerce, Washington, DC 20230; telephone: (202) 377-3337.

SUPPLEMENTARY INFORMATION:

Background

On January 3, 1983, the Department of Commerce ("the Department") published in the **Federal Register** (48 FR 52) a countervailing duty order on stainless steel wire rod from Spain. On January 30, 1987, a Spanish exporter, Roldan, S.A., requested in accordance with 19 CFR 355.10 an administrative review of this order. We published the initiation of the administrative review on February 23, 1987 (52 FR 5479). The Department has now conducted that administrative review in accordance with section 751 of the Tariff Act of 1930 ("the Tariff Act").

Scope of Review

The United States has developed a system of tariff classification based on the international harmonized system of customs nomenclature. Congress is considering legislation to convert the United States to this Harmonized System ("HS"). In view of this, we will be providing both the appropriate Tariff Schedules of the United States Annotated ("TSUSA") item numbers and the appropriate HS item numbers with our product descriptions on a test basis, pending Congressional approval. As with the TSUSA, the HS item numbers are provided for convenience and Customs purposes. The written description remains dispositive.

We are requesting petitioners to include the appropriate HS item number(s) as well as the TSUSA item number(s) in all new petitions filed with the Department. A reference copy of the proposed Harmonized System schedule is available for consultation at the Central Records Unit, Room B-099, U.S. Department of Commerce, 14th Street and Constitution Avenue NW., Washington, DC 20230. Additionally, all Customs offices have reference copies, and petitioners may contact the Import Specialist at their local Customs office to consult the schedule.

Imports covered by the review are shipments of Spanish stainless steel wire rod which includes coiled, semi finished, hot-rolled stainless steel products of approximately round solid cross-section, not under 0.20 inch nor over 0.74 inch in diameter, not tempered or treated, not partly manufactured, and valued over 6 cents per pound. Such merchandise is currently classifiable under TSUSA item number 607.2000. This product is currently classifiable under HS item numbers 7221.00.00.20 and 7221.00.00.40. We invite comments from all interested parties on this HS classification.

The review covers the period January 1, 1986 through December 31, 1986 and six programs. Roldan, S.A., was the only known Spanish exporter of stainless steel wire rod to the United States during the period of review.

Analysis of Programs

(1) Long-Term Loans

Under the Concerted Action Program established by Royal Decree 669/74, the Spanish government directs banks to make long-term loans to steel companies at below market rates. Such loans are provided for approximately ten years. Roldan received a long-term loan for financing new plant and equipment that had an outstanding balance during the

APPENDIX F
EMBARGOES ON IMPORTS OF TUNA AND TUNA PRODUCTS

IMPORT PROHIBITION OF TUNA AND TUNA PRODUCTS

The following information lists import prohibitions on tuna and tuna products that have been imposed since 1975 (and in some cases, rescinded) under the Tuna Conventions Act of 1950, the Marine Mammal Protection Act (MMPA), or the Magnuson Fishery Conservation and Management Act of 1976 (MFCMA).

Effective Country	*Date*	*Rescinded*	*Statute*	*Product*
Spain	11/01/75	07/19/83	Tuna Conventions Act of 1950	Yellowfin tuna and tuna products taken from the IATTC regulatory area (CYRA)
Peru	01/01/75	07/01/83	MMPA	Yellowfin tuna and tuna products
Canada (U.S. tuna vessel seizures Aug. 28, 1979)	08/31/79	09/03/80	MFCMA	All tuna and tuna products
Costa Rica (U.S. tuna vessel seizures Dec. 13, 1979)	02/01/80	03/11/82	MFCMA	All tuna and tuna products
Senegal	02/01/80	03/11/82	MMPA	Yellowfin tuna and tuna products
Congo	02/20/80	03/11/82	MMPA	Yellowfin tuna and tuna products
Peru (U.S. tuna vessel seizures Nov.12-13, 1979)	02/22/80	04/19/83	MFCMA	All tuna and tuna products
Mexico (U.S. tuna vessels seizure July 8-14, 1980)	07/14/80	06/13/86	MFCMA	All tuna and tuna products
Ecuador (U.S. tuna vessels seizure Oct. 21-30, 1980)	11/21/80	04/19/83	MFCMA	All tuna and tuna products
Mexico	02/01/81	05/21/86	MMPA	Yellowfin tuna and tuna products
Papau New Guinea (U.S. tuna vessel seizure Feb.10, 1982)	04/06/82	04/08/82	MFCMA	All tuna and tuna products
USSR	04/04/83	03/07/89	MMPA	Yellowfin tuna and tuna products
Solomon Islands (U.S. tuna vessel seizure Jun. 25, 1984)	08/23/84	04/17/85	MFCMA	All tuna and tuna products
Costa Rica (U.S. tuna vessel seizure Jan. 29, 1986)	04/24/86	10/10/86	MFCMA	All tuna and tuna products
El Salvador	10/10/86	9/18/89	MMPA	Yellowfin tuna and tuna products
Venezuela	10/16/88	11/23/88	MMPA	All yellowfin tuna
Vanuatu	10/16/88	11/14/88	MMPA	All yellowfin tuna

Effective Country	*Date*	*Rescinded*	*Statute*	*Product*
Panama	10/16/88	11/23/88	MMPA	All yellowfin tuna
Ecuador	10/16/88	11/01/88	MMPA	All yellowfin tuna
Spain	12/14/88	02/21/89	MMPA	All yellowfin tuna
Ecuador	09/07/90	09/11/90	MMPA	All yellowfin tuna
Panama	09/07/90	11/16/90	MMPA	All yellowfin tuna
Mexico	10/10/90	[1]11/14/90	MMPA	All yellowfin tuna

[1] Subject to reinstatement pending a hearing on Feb. 11, 1990.

Source: U.S. Department of State, Bureau of Oceans and International Environmental and Scientific Affairs, facsimile transmission, Oct. 31, 1990.

APPENDIX G
EC TUNA TARIFFS

HEADING No.	DESCRIPTION	RATE OF DUTY Autonomous % or Levy (AGR)	Conventional %
(02.10 19)			
	- - - - - Other:		
51	- - - - - - Boneless	25 (AGR)	-
59	- - - - - - Other	25 (AGR)	-
	- - - - Dried or smoked:		
60	- - - - - Fore-ends and parts thereof	25 (AGR)	-
70	- - - - - Loins and cuts thereof	25 (AGR)	-
	- - - - - Other:		
81	- - - - - - Boneless	25 (AGR)	-
89	- - - - - - Other	25 (AGR)	-
90	- - - Other	24	-
20	- Meat of bovine animals:		
10	- - With bone in	24 + AGR (1)	-
90	- - Boneless	24 + AGR (1)	-
90	- Other, including edible flours and meals of meat or meat offal:		
	- - Meat:		
10	- - - Horsemeat, salted, in brine or dried	16	10
	- - - Of sheep and goats:		
11	- - - - With bone in	24 (AGR)	-
19	- - - - Boneless	24 (AGR)	-
20	- - - Other	24	-
	- - Offal:		
	- - - Of domestic swine:		
31	- - - - Livers	25 (AGR)	-
39	- - - - Other	25 (AGR)	-
	- - - Of bovine animals:		
41	- - - - Thick skirt and thin skirt	24 (AGR) (1)	-
49	- - - - Other	24	20
60	- - - Of sheep and goats	24	-
	- - - Other:		
	- - - - Poultry liver:		
71	- - - - - Fatty livers of geese or ducks, salted or in brine	5 (AGR)	3
79	- - - - - Other	16 (AGR)	10
80	- - - - Other	24	-
90	- - Edible flours and meals of meat or meat offal	24 + AGR (1)	-

CHAPTER 3

FISH AND CRUSTACEANS, MOLLUSCS AND OTHER AQUATIC INVERTEBRATES

NOTE

1. This Chapter does not cover:

   a) marine mammals (heading No. 01.06) or meat thereof (heading No. 02.08 or 02.10);

   b) fish (including livers and roes thereof) or crustaceans, molluscs or other aquatic invertebrates, dead and unfit or unsuitable for human consumption by reason of either their species or their condition (Chapter 5); flours, meals or pellets of fish or of crustaceans, molluscs or other aquatic invertebrates, unfit for human consumption (heading No. 23.01); or

   c) caviar or caviar substitutes prepared from fish eggs (heading No. 16.04).

HEADING No.	DESCRIPTION	RATE OF DUTY Autonomous % or Levy (AGR)	Conventional %
03.01	Live fish:		
10	- Ornamental fish:		
10	- - Freshwater fish	10	Free
90	- - Saltwater fish	15	15
	- Other live fish:		
91 00	- - Trout (Salmo trutta, Salmo gairdneri, Salmo clarki, Salmo aguabonita, Salmo gilae)	16	12

(1) Under certain conditions, a levy is applicable in addition to the customs duty.

HEADING No.	DESCRIPTION	RATE OF DUTY	
		Autonomous % or Levy (AGR)	Conventional %
03.01 92 00	- - Eels (Anguilla spp.)	10	3
93 00	- - Carp	10	8
99	- - Other:		
	- - - Freshwater fish:		
11	- - - - Pacific salmon (Oncorhynchus spp.), Atlantic salmon (Salmo salar) and Danube salmon (Hucho hucho)	16	2
19	- - - - Other	10	8
90	- - - Saltwater fish	17	16
03.02	Fish, fresh or chilled, excluding fish fillets and other fish meat of heading No. 03.04:		
	- Salmonidae, excluding livers and roes		
11 00	- - Trout (Salmo trutta, Salmo gairdneri, Salmo clarki, Salmo aguabonita, Salmo gilae)	16	12
12 00	- - Pacific salmon (Oncorhynchus spp.), Atlantic salmon (Salmo salar) and Danube salmon (Hucho hucho)	16	2
19 00	- - Other	16	8
	- Flat fish (Pleuronectidae, Bothidae, Cynoglossidae, Soleidae, Scophthalmidae and Citharidae), excluding livers and roes:		
21	- - Halibut (Reinhardtius hippoglossoides, Hippoglossus hippoglossus, Hippoglossus stenolepis):		
10	- - - Lesser or Greenland halibut (Reinhardtius hippoglossoides)	15	8
30	- - - Atlantic halibut (Hippoglossus hippoglossus)	15	8
90	- - - Pacific halibut (Hippoglossus stenolepis)	15	15
22 00	- - Plaice (Pleuronectes platessa)	15	15
23 00	- - Sole (Solea spp.)	15	15
29	- - Other:		
10	- - - Megrim (Lepidorhombus spp.)	15	15
90	- - - Other	15	15
	- Tunas (of the genus Thunnus), skipjack or stripe-bellied bonito (Euthynnus (Katsuwonus) pelamis), excluding livers and roes:		
31	- - Albacore or longfinned tunas (Thunnus alalunga):		
10	- - - For the industrial manufacture of products falling within heading No. 16.04 (1)	25 (2,3)	22 (2,4)
90	- - - Other	25 (2)	22 (2,4)
32	- - Yellowfin tunas (Thunnus albacares):		
10	- - - For the industrial manufacture of products falling within heading No. 16.04 (1)	25 (2,3)	22 (2,4)
90	- - - Other	25 (2)	22 (2,4)
33	- - Skipjack or stripe-bellied bonito:		
10	- - - For the industrial manufacture of products falling within heading No. 16.04 (1)	25 (2,3)	22 (2,4)
90	- - - Other	25 (2)	22 (2,4)
39	- - Other:		
10	- - - For the industrial manufacture of products falling within heading No. 16.04 (1)	25 (2,3)	22 (2,4)
90	- - - Other	25 (2)	22 (2,4)
40	- Herrings (Clupea harengus, Clupea pallasii), excluding livers and roes:		
10	- - From 15 February to 15 June	Free	Free
90	- - From 16 June to 14 February	20 (2)	15 (2,5)
50	- Cod (Gadus morhua, Gadus ogac, Gadus macrocephalus), excluding livers and roes:		
10	- - Of the species Gadus morhua	15	12
90	- - Other	15	15

(1) Entry under this subheading is subject to conditions laid down in the relevant Community provisions.
(2) Subject to compliance with the reference price. A countervailing tax is provided for in the case of non-compliance with the reference price.
(3) Total suspension for an indefinite period.
(4) Duty exemption for tuna and fish of the genus Euthynnus, falling within headings Nos. 03.02 and 03.03, intended for the canning industry, within the limits of a global annual tariff quota of 17 250 tonnes to be granted by the competent Community authorities and subject to compliance with the reference price. Qualification for this quota is subject to conditions laid down in the relevant Community provisions.
(5) Duty exemption for herring falling within subheadings 03.02 40 90, 03.03 50 90, 03.04 10 93, 03.04 10 98 and 03.04 90 25, within the limits of a global annual tariff quota of 34 000 tonnes to be granted by the competent Community authorities and subject to compliance with the reference price.

HEADING No.	DESCRIPTION	RATE OF DUTY	
		Autonomous % or Levy (AGR)	Conventional %
(03.02)			
	- Other fish excluding livers and roes:		
61	- - Sardines (Sardina pilchardus, Sardinops spp.) sardinella (Sardinella spp.) brisling or sprats (Sprattus sprattus):		
10	- - - Sardines of the species Sardina pilchardus	25	23
30	- - - Sardines of the genus Sardinops; sardinella (Sardinella spp.)	15	15
	- - - Brisling or sprats (Sprattus sprattus):		
91	- - - - From 15 February to 15 June	Free	Free
99	- - - - From 16 June to 14 February	20	13
62 00	- - Haddock (Merlanogrammus aeglefinus)	15	15
63 00	- - Coalfish (Pollachius virens)	15	15
64	- - Mackerel (Scomber scombrus, Scomber australasicus, Scomber japonicus):		
10	- - - From 15 February to 15 June	Free	Free
90	- - - From 16 June to 14 February	20	20
65	- - Dogfish and other sharks:		
20	- - - Dogfish of the species Squalus acanthias	15	8 (1)
50	- - - Dogfish of the species Scyliniorhinus spp.	15	8
90	- - - Other	15	8
66 00	- - Eels (Anguilla spp.)	10	3
69	- - Other:		
	- - - Freshwater fish:		
11	- - - - Carp	10	8
19	- - - - Other	10	8
	- - - Saltwater fish:		
	- - - - Fish of the genus Euthynnus, other than the skipjack or stripe-bellied bonitos (Euthynnus (Katsuwonus) pelamis) mentioned in subheadings Nos. 03.02 33 10 and 33 90:		
21	- - - - - For the industrial manufacture of products falling within heading No. 16.04 (2)	25 (3,4)	22 (3,5)
25	- - - - - Other	25 (3)	22 (3,5)
	- - - - Redfish (Sebastes spp.):		
31	- - - - - Of the species Sebastes marinus	15	8
33	- - - - - Other	15	15
35	- - - - Fish of the species Boreogadus saida	15	12
41	- - - - Whiting (Merlangus merlangus)	15	15
45	- - - - Ling (Molva spp.)	15	15
51	- - - - Alaska pollack (Theragra chalcogramma) and pollack (Pollachius pollachius)	15	15
55	- - - - Anchovies (Engrualis spp.)	15	15
61	- - - - Sea bream (Dentex dentex and Pagellus spp.)	15	15
65	- - - - Hake (Merluccius spp., Urophycis spp.)	15	15 (6)
75	- - - - Ray's Bream (Brama spp.)	15	15
81	- - - - Monkfish (Lophius spp.)	15	15
85	- - - - Blue whiting (Micromesistius poutassou or Gadus poutassou)	15	15
95	- - - - Other	15	15
70 00	- Livers and roes	14	10
03.03	Fish, frozen, excluding fish fillets and other fish meat of heading No. 03.04:		
10 00	- Pacific salmon (Oncorhynchus spp.), excluding livers and roes	16	2

(1) Duty rate reduced to 6% for piked dogfish (Squalus acanthius) falling within subheadings 03.02 65 20 and 03.03 75 20 within the limits of a global annual tariff quota of 5 000 to be granted by the competent Community authorities.
(2) Entry under this subheading is subject to conditions laid down in the relevant Community provisions.
(3) Subject to compliance with the reference price. A countervailing tax is provided for in the case of non-compliance with the reference price.
(4) Total suspension for an indefinite period.
(5) Duty exemption for tuna and fish of the genus Euthynnus, falling within headings Nos. 03.02 and 03.03, intended for the canning industry, within the limits of a global annual tariff quota of 17 250 tonnes to be granted by the competent Community authorities and subject to compliance with the reference price. Qualification for this quota is subject to conditions laid down in the relevant Community provisions.
(6) Duty rate reduced to 8% for silver hake (Merluccius bilinearis) falling within subheadings 03.02 69 95, 03.03 78 10 and 03.04 90 47, within the limits of a global annual tariff quota of 2 000 tonnes to be granted by the competent Community authorities.

HEADING No.	DESCRIPTION	RATE OF DUTY	
		Autonomous % or Levy (AGR)	Conventional %
(03.03)			
	- Other salmonidae, excluding livers and roes:		
21 00	- - Trout (Salmo trutta, Salmo gairdneri, Salmo clarki, Salmo aguabonita, Salmo gilae)	16	12
22 00	- - Atlantic salmon (Salmo salar) and Danube salmon (Hucho hucho)	16	2
29 00	- - Other	16	9
	- Flat fish (Pleuronectidae, Bothidae, Cynoglossidae, Soleidae, Scophthalmidae and Citharidae), excluding livers and roes:		
31	- - Halibut (Reinhardtius hippoglossoides, Hippoglossus hippoglossus, Hippoglossus stenolepis):		
10	- - - Lesser or Greenland halibut (Reinhardtius hippoglossoides)	15	8
30	- - - Atlantic halibut (Hippoglossus hippoglossus)	15	8
90	- - - Pacific halibut (Hippoglossus stenolepis)	15	15
32 00	- - Plaice (Pleuronectes platessa)	15	15
33 00	- - Sole (Solea spp.)	15	15
39	- - Other:		
10	- - - Flounder (Platichthys flesus)	15	15
20	- - - Megrim (Lepidorhombus spp.)	15	15
90	- - - Other	15	15
	- Tunas (of the genus Thunnus), skipjack or stripe-bellied bonito (Euthynnus (Katsuwonus) pelamis), excluding livers and roes:		
41	- - Albacore or longfinned tunas (Thunnus alalunga):		
	- - - For the industrial manufacture of products falling within heading No. 16.04 (1):		
11	- - - - Whole	25 (2,3)	22 (2,4)
13	- - - - Gilled and gutted	25 (2,3)	22 (2,4)
19	- - - - Other (for example "heads off")	25 (2,3)	22 (2,4)
90	- - - Other	25 (2)	22 (2,4)
42	- - Yellowfin tunas (Thunnus albacares):		
	- - - For the industrial manufacture of products falling within heading No. 16.04 (1):		
	- - - - Whole:		
12	- - - - - Weighing more than 10 kg each	25 (2,3)	20 (2,4)
18	- - - - - Other	25 (2,3)	20 (2,4)
	- - - - Gilled and gutted:		
32	- - - - - Weighing more than 10 kg each	25 (2,3)	22 (2,4)
38	- - - - - Other	25 (2,3)	22 (2,4)
	- - - - Other (for example "heads off"):		
52	- - - - - Weighing more than 10 kg each	25 (2,3)	22 (2,4)
58	- - - - - Other	25 (2,3)	22 (2,4)
90	- - - Other	25 (2)	22 (2,4)
43	- - Skipjack or stripe-bellied bonito:		
	- - - For the industrial manufacture of products falling within heading No. 16.04 (1):		
11	- - - - Whole	25 (2,3)	22 (2,4)
13	- - - - Gilled and gutted	25 (2,3)	22 (2,4)
19	- - - - Other (for example "heads off")	25 (2,3)	22 (2,4)
90	- - - Other	25 (2)	22 (2,4)
49	- - Other:		
	- - - For the industrial manufacture of products falling within heading No. 16.04 (1):		
11	- - - - Whole	25 (2,3)	22 (2,4)
13	- - - - Gilled and gutted	25 (2,3)	22 (2,4)
19	- - - - Other (for example "heads off")	25 (2,3)	22 (2,4)
90	- - - Other	25 (2)	22 (2,4)
50	- Herrings (Clupea harengus, Clupea pallasii), excluding livers and roes:		
10	- - From 15 February to 15 June	Free	Free

(1) Entry under this subheading is subject to conditions laid down in the relevant Community provisions.
(2) Subject to compliance with the reference price. A countervailing tax is provided for in the case of non-compliance with the reference price.
(3) Total suspension for an indefinite period.
(4) Duty exemption for tuna and fish of the genus Euthynnus, falling within headings Nos. 03.02 and 03.03, intended for the canning industry, within the limits of a global annual tariff quota of 17 250 tonnes to be granted by the competent Community authorities and subject to compliance with the reference price. Qualification for this quota is subject to conditions laid down in the relevant Community provisions.

HEADING No.	DESCRIPTION	RATE OF DUTY	
		Autonomous % or Levy (ACR)	Conventional %
03.03 79 41	- - - - Fish of the species Boreogadus saida	15	12 (1)
45	- - - - Whiting (Merlangus merlangus)	15	15
51	- - - - Ling (Molva spp.)	15	15
55	- - - - Alaska pollack (Theragra chalcogramma) and pollack (Pollachius pollachius)	15	15
	- - - - Fish of the species Orcynopsis unicolor:		
61	- - - - - From 15 February to 15 June	Free	Free
63	- - - - - From 16 June to 14 February	20	20
65	- - - - Anchovies (Engraulis spp.)	15	15
71	- - - - Sea bream (Dentex dentex and Pagellus spp.)	15	15
75	- - - - Ray's Bream (Brama spp.)	15	15
81	- - - - Monkfish (Lophius spp.)	15	15
83	- - - - Blue whiting (Micromesistius poutassou or Gadus poutassou)	15	15
99	- - - - Other	15	15
80 00	- Livers and roes	14	10
03.04	Fish fillets and other fish meat (whether or not minced), fresh, chilled or frozen:		
10	- Fresh or chilled:		
	- - Fillets:		
	- - - Of freshwater fish:		
11	- - - - Of trout (Salmo trutta, Salmo gairdneri, Salmo clarki, Salmo aguabonita, Salmo gilae)	16	12
13	- - - - Of Pacific salmon (Oncorhynchus spp.), Atlantic salmon (Salmo salar) and Danube salmon (Rucho hucho)	16	2
19	- - - - Of other freshwater fish	13	9
	- - - Other:		
31	- - - - Of cod (Gadus morhua, Gadus ogac, Gadus macrocephalus) and of fish of the species Boreogadus saida	18	18
39	- - - - Other	18	18
	- - Other fish meat (whether or not minced):		
91	- - - Of freshwater fish	8	8
	- - - Other:		
	- - - - Flaps of herring:		
92	- - - - - From 15 February to 15 June	Free	Free
93	- - - - - From 16 June to 14 February	20	15
98	- - - - Other	18	15 (2)
20	- Frozen fillets:		
	- - Of freshwater fish:		
11	- - - Of trout (Salmo trutta, Salmo gairdneri, Salmo clarki, Salmo aguabonita, Salmo gilae)	16	12
13	- - - Of Pacific salmon (Oncorhynchus spp.), Atlantic salmon (Salmo salar) and Danube salmon (Hucho hucho)	16	2
19	- - - Of other freshwater fish	13	9
	- - Of cod (Gadus morhua, Gadus macrocephalus, Gadus ogac) and of fish of the species Boreogadus saida:		
21	- - - Of cod of the species Gadus macrocephalus	18	15
29	- - - Other	18	15 (1,3)
31	- - Of coalfish (Pollachius virens)	18	15
33	- - Of haddock (Merlanogrammus aeglefinus)	13	15
	- - Of redfish (Sebastes spp.):		
35	- - - Of the species Sebastes marinus	18	12
37	- - - Other	18	15
41	- - Of whiting (Merlangus merlangus)	18	15
43	- - Of ling (Molva spp.)	18	15
45	- - Of tuna (of the genus Thunnus) and of fish of the genus Euthynnus	18	18
	- - Of mackerel (Scomber scombrus, Scomber australasicus, Scomber japonicus) and of fish of the species Orcynopsis unicolor:		
51	- - - Of mackerel of the species Scomber australasicus	18	15

(1) Subject to limits and conditions to be determined by the comptent authorities.
(2) Duty exemption for herring falling within subheadings 03.02 40 90, 03.03 50 90, 03.04 10 93, 03.04 10 95 and 03.04 90 25, within the limits of a global annual tariff quota of 34 000 tonnes to be granted by the competent Community authorities and subject to compliance with the reference price.
(2) Duty rate reduced to 8% for cod of the species Gadus morhua within the limits of a global annual tariff quota of 10 000 tonnes to be granted by the competent Community authorities.

HEADING No.	DESCRIPTION	RATE OF DUTY	
		Autonomous % or Levy (AGR)	Conventional %
03.04 20 53	- - - Other	18	15
	- - Of hake (Merluccius spp., Urophycis spp.):		
57	- - - Of hake of the genus Merluccius	18	15 (1,2)
59	- - - Of hake of the genus Urophycis	18	15
	- - Of dogfish and other sharks:		
61	- - - Of dogfish (Squalus acanthias and Scyliorhinus spp.)	18	15
69	- - - Of other sharks	18	15
71	- - Of plaice (Pleuronectes platessa)	18	15
73	- - Of flounder (Platichthys flesus)	18	15
75	- - Of herring (Clupea harengus, Clupea pallasii)	18	15
79	- - Of megrim (Lepidorhombus spp.)	18	15
81	- - Of Ray's Bream (Brama spp.)	18	15
83	- - Of monkfish (Lophius spp.)	18	15
85	- - Of Alaska pollack (Theragra chalcogramma)	18	15
98	- - Other	18	15
90	- Other:		
10	- - Of freshwater fish	8	8
	- - Other:		
	- - - Of herring (Clupea harengus, Clupea pallasii):		
21	- - - - From 15 February to 15 June	Free	Free
25	- - - - From 16 June to 14 February	20 (3)	13 (3,4)
31	- - - Of redfish (Sebastes spp.)	15	8
	- - - Of cod (Gadus morhua, Gadus ogac, Gadus macrocephalus) and of fish of the species Boreogadus saida:		
35	- - - - Of cod of the species Gadus macrocephalus	15	15
38	- - - - Of cod of the species Gadus morhua	15	12 (5)
39	- - - - Other	15	15 (5)
41	- - - Of coalfish (Pollachius virens)	15	15
45	- - - Of haddock (Merlanogrammus aeglefinus)	15	15
	- - - Of hake (Merluccius spp., Urophycis spp.):		
47	- - - - Of hake of the genus Merluccius	15	15 (6)
49	- - - - Of hake of the genus Urophycis	15	15
51	- - - Of megrim (Lepidorhombus spp.)	15	15
55	- - - Of Ray's Bream (Brama spp.)	15	15
57	- - - Of monkfish (Lophius spp.)	15	15
59	- - - Of blue whiting (Micromesistius poutassou or Gadus poutassou)	15	15
61	- - - Of Alaska pollack (Theragra chalocgramma)	15	15
98	- - - Other	15	15
03.05	Fish, dried, salted or in brine; smoked fish, whether or not cooked before or during the smoking process; fish meal fit for human consumption:		
10 00	- Fish meal fit for human consumption	15	13
20 00	- Livers and roes, dried, smoked, salted or in brine	15	11
30	- Fish fillets, dried, salted or in brine, but not smoked:		
	- - Of cod (Gadus morhua, Gadus ogac, Gadus macrocephalus) and of fish of the species Boreogadus saida:		
11	- - - Of cod of the species Gadus macrocephalus	18	16
19	- - - Other	20	20
30	- - Of Pacific salmon (Oncorhyncus spp.), of Atlantic salmon (Salmo salar), and Danube salmon (Hucho hucho), salted or in brine	18	15
50	- - Of lesser or Greenland halibut (Reinhardtius hippoglossoides), salted or in brine	18	15
90	- - Other	18	16

(1) Subject to compliance with the reference price.
(2) Duty rate reduced to 10% subject to compliance with the reference price, for frozen fillets presented as industrial blocks, with bones (standard) within the limits of an annual tariff quota of 5 000 tonnes, for the period 1 July to 31 December, to be granted by the competent authorities.
(3) Subject to compliance with the reference price. A countervailing tax is provided for in the case of non-compliance with the reference price.
(4) Duty exemption for herring falling within subheadings 03.02 40 90, 03.03 50 90, 03.04 10 93, 03.04 10 95 and 03.04 90 25, within the limits of a global annual tariff quota of 34 000 tonnes to be granted by the competent Community authorities and subject to compliance with the reference price.
(5) Subject to limits and conditions to be determined by the competent authorities.
(6) Duty rate reduced to 8% for silver hake (Merluccius bilinearis) falling within subheadings 03.02 69 95, 03.03 78 10 and 03.04 90 47, within the limits of a global annual tariff quota of 2 000 tonnes to be granted by the competent Community authorities.

S E C T I O N IV

PREPARED FOODSTUFFS; BEVERAGES, SPIRITS AND VINEGAR; TOBACCO AND MANUFACTURED TOBACCO SUBSTITUTES

NOTE

1. In this Section, the term "pellets" means products which have been agglomerated either directly by compression or by the addition of a binder in a proportion not exceeding 3% by weight.

CHAPTER 16

PREPARATIONS OF MEAT, OF FISH, OR OF CRUSTACEANS, MOLLUSCS OR OTHER AQUATIC INVERTEBRATES

NOTE

1. This Chapter does not cover meat, meat offal, fish, crustaceans, molluscs or other aquatic invertebrates, prepared or preserved by the processes specified in Chapter 2 or 3.

2. Food preparations fall in this Chapter provided that they contain more than 20% by weight of sausage, meat, meat offal, blood, fish or crustaceans, molluscs or other aquatic invertebrates, or any combination thereof. In cases where the preparation contains two or more of the products mentioned above, it is classified in the heading of Chapter 16 corresponding to the component or components which predominate by weight. These provisions do not apply to the stuffed products of heading No. 19.02 or to the preparations of heading No. 21.03 or 21.04.

SUBHEADING NOTES

1. For the purposes of subheading No. 16.02 10, the expression "homogenised preparations" means preparartions of meat, meat offal or blood, finely homogenised, put up for retail sale as infant food or for dietetic purposes, in containers of a net weight content not exceeding 250 g. For the application of this definition no account is to be taken of small quantities of any ingredients which may have been added to the preparation for seasoning, preservation or other purposes. These preparations may contain a small quantity of visible pieces of meat or meat offal. This subheading takes precedence over all other subheadings of heading No. 16.02.

2. The fish and crustaceans specified in the subheadings of heading No. 16.04 or 16.05 under their common names only, are of the same species as those mentioned in Chapter 3 under the same name.

ADDITIONAL NOTES

1. For the purposes of subheadings 16.02 31 11, 16.02 39 11, 16.02 50 10, 16.02 90 61 and 16.02 90 71 the term "uncooked" shall apply to products which have not been subjected to any heat treatment or which have been subjected to a heat treatment insufficient to ensure the coagulation of meat proteins in the whole of the product and which therefore, in the case of subheadings 16.02 50 10, 16.02 90 61 and 16.02 90 71 show traces of a pinkish liquid on the cut surface when the product is cut along a line passing through its thickest part.

2. For the purposes of subheadings 16.02 41 10, 16.02 42 10 and 16.02 49 11 to 16.02 49 15 the expression "parts thereof" applies only to prepared or preserved meat which, due to the size and the characteristics of the coherent muscle tissue, is identifiable as having been obtained from hams, shoulders, loins, or collars of domestic swine, as the case may be.

HEADING No.	DESCRIPTION	RATE OF DUTY	
		Autonomous % or Levy (AGR)	Conventional %
16.01 00	Sausages and similar products, of meat, meat offal or blood; food preparations based on these products:		
10	- Of liver	24 (AGR)	24
	- Other (1):		
91	- - Sausages, dry for spreading, uncooked	21 (AGR)	-
99	- - Other	21 (AGR)	-

(1) The levy applicable to sausages imported in containers which also contain preservative liquid is collected on the net weight, i.e. after deduction of the weight of the liquid.

HEADING No.	DESCRIPTION	RATE OF DUTY	
		Autonomous % or Levy (AGR)	Conventional %
(16.02 90)	- - - - - Other:		
	- - - - - - Of sheep or goats:		
71	- - - - - - - Uncooked; mixtures of cooked meat or offal and uncooked meat or offal	20	(1)
79	- - - - - - - Other	20	(1)
99	- - - - - - Other	26	26
16.03 00	Extracts and juices of meat; fish or crustaceans, molluscs or other aquatic invertebrates:		
10	- In immediate packings of a net content of 1 kg or less	24	20
30	- In immediate packings of a net content of more than 1 kg but less than 20 kg	9	4
90	- Other	Free	Free
16.04	Prepared or preserved fish; caviar and caviar substitutes prepared from fish eggs:		
	- Fish, whole or in pieces, but not minced:		
11 00	- - Salmon	20	5.5
12	- - Herrings:		
10	- - - Fillets, raw, merely coated with batter or breadcrumbs, whether or not prefried in oil, deep frozen	18	15
90	- - - Other	23	20
13	- - Sardines, sardinella and brisling or sprats:		
10	- - - Sardines	25	25
90	- - - Other	25	20
14	- - Tunas, skipjack and Atlantic bonito (Sarda spp.):		
10	- - - Tunas and skipjack	25	24
90	- - - Atlantic bonito (Sarda spp.)	25	25
15	- - Mackerel:		
10	- - - Of the species Scomber scombrus and Scomber japonicus	25	25
90	- - - Of the species Scomber australasicus	25	20
16 00	- - Anchovies	25	-
19	- - Other:		
10	- - - Salmonidae, other than salmon	20	7
30	- - - Fish of the genus Euthynnus, other than skipjack (Euthynnus (Katsuwonus) pelamis)	25	24
50	- - - Fish of the species Orcynopsis unicolor	25	25
	- - - Other:		
91	- - - - Fillets, raw, merely coated with batter or breadcrumbs, whether or not prefried in oil, deep frozen	18	15
99	- - - - Other	25	20
20	- Other prepared or preserved fish:		
10	- - Of salmon	20	5.5
30	- - Of salmonidae, other than salmon	20	7
40	- - Of anchovies	25	-
50	- - Of sardines, bonito, mackerel of the species Scomber scombrus and Scomber japonicus, fish of the species Orcynopsis unicolor	25	25
70	- - Of tunas, skipjack or other fish of the genus Euthynnus	25	24
90	- - Of other fish	25	20
30	- Caviar and caviar substitutes:		
10	- - Caviar (sturgeon roe)	30	30
90	- - Caviar substitutes	30	30
16.05	Crustaceans, molluscs and other aquatic invertebrates, prepared or preserved:		
10 00	- Crab	20	16
20 00	- Shrimps and prawns	20	20
30 00	- Lobster	20	20
40 00	- Other crustaceans	20	20
90	- Other:		
10	- - Molluscs	20	20
90	- - Other aquatic invertebrates	26	26

(1) See Annex.

APPENDIX H
ANALYTICAL FRAMEWORK FOR THE ECONOMIC EFFECTS OF TARIFFS ON TUNA

ANALYTICAL FRAMEWORK FOR THE ECONOMIC EFFECTS OF TARIFFS ON TUNA

The purpose of this appendix is to explain the analytical framework, or model, which underlies the estimation of the effects of tariffs in Chapter 6. This model captures both the direct effects of tariffs and their indirect repercussions. The discussion here will first consider the market for imported canned tuna using the standard tools of supply and demand. Next it looks further at the supply side of the import market, through which tariffs affect the world market for canned tuna. The following two sections consider the import market's demand side, which links that market with the supply and demand for domestic canned tuna. The final section summarizes the various impacts of tariffs.

The Effect of Tariffs on the Price and Quantity of Imported Tuna

Figures H-1 and H-2 use a standard supply/demand framework to illustrate the direct effect of tariffs on both the world supply price P_W of traded tuna and the domestic price P_M of imported tuna.[1] The figures apply to the market for imported tuna in either the United States or the European Community (EC). The supply curve S_M represents the quantities that tuna exporters are willing to offer in this market at each price. At higher prices, more will be offered, both because overseas suppliers will find it profitable to increase production and because tuna will be diverted from other export markets. The demand curve D_M represents the amount of imported tuna that consumers (or distributors) will wish to purchase at each price. The lower the price, the greater will be the quantity demanded.

In the absence of a tariff, the market-clearing price is given by the intersection of the two curves D_M and S_M. In this case P_M and P_W are equal. Q_M in Figure H-1 represents the quantity of imports.

In the presence of a tariff, however, P_M and P_W are not equal. Rather,

$$P_M = P_W\ (1+t)$$

where t represents the percentage ad-valorem tariff rate. Hence, for example, a 20 percent ad valorem tariff implies that the domestic price of imported tuna will be 1.2 times the price of tuna in world trade. This case is depicted in Figure H-2. As in the previous figure, curve S_M represents the quantity offered by overseas suppliers at the net-of-tariff price. Curve S'_M represents quantities offered at the gross-of-tariff price at which imported tuna sells in the domestic market. The market clears at the price P_M and quantity Q_M given by the intersection of D_M and S'_M. P_W is given by the height of S_M at Q_M, and the vertical distance between S'_M and S_M at Q_M represents the value of the per-unit tariff.

P_O in Figure H-2 represents the price (both P_W and P_M) that would have prevailed in the absence of a tariff. In general, a tariff both raises P_M and reduces world supply price P_W. The extent to which each of P_M and P_W change depends on the relative slopes of S_M and D_M.[2] If, for example, S_M were horizontal, a tariff would reduce the quantity imported but would not affect world supply price at all. P_M would rise by the full amount of the tariff. That, in fact, is a reasonable approximation of the effect of tariffs in cases where the country (or tariff region) concerned imports too small a proportion of world trade in a commodity for changes in imports to affect the world price. In the case of tuna, however, the United States and the EC each import 40 percent or more of the quantity traded in world markets. Thus their tariffs have an important impact on world prices.

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[1] The model abstracts from transportation costs and other charges. As these costs affect only the level of the world supply price and not the changes in price due to the tariff, this simplification makes no difference for the model's implications. Another simplification that the model will make initially is to consider tuna as a homogeneous commodity. At a later point in the analysis we shall consider the importance of qualitative differences.

[2] The relative slopes of these and other curves in the figures in this appendix are measured by elasticities, which is why the calculations noted in Chapter 6 use elasticities.

Figure H-1
The market for imported canned tuna

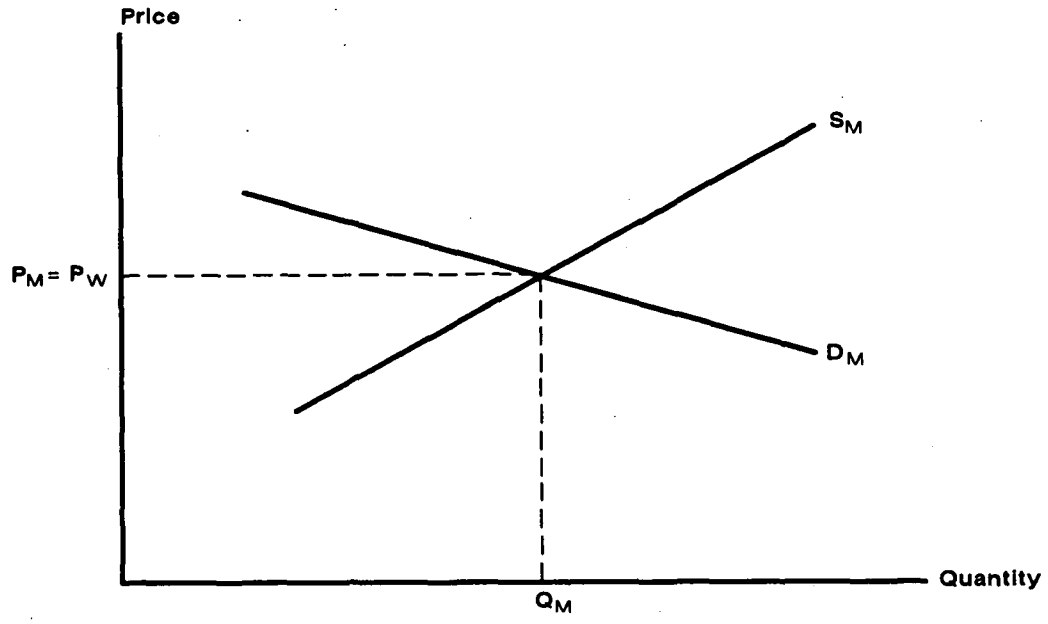
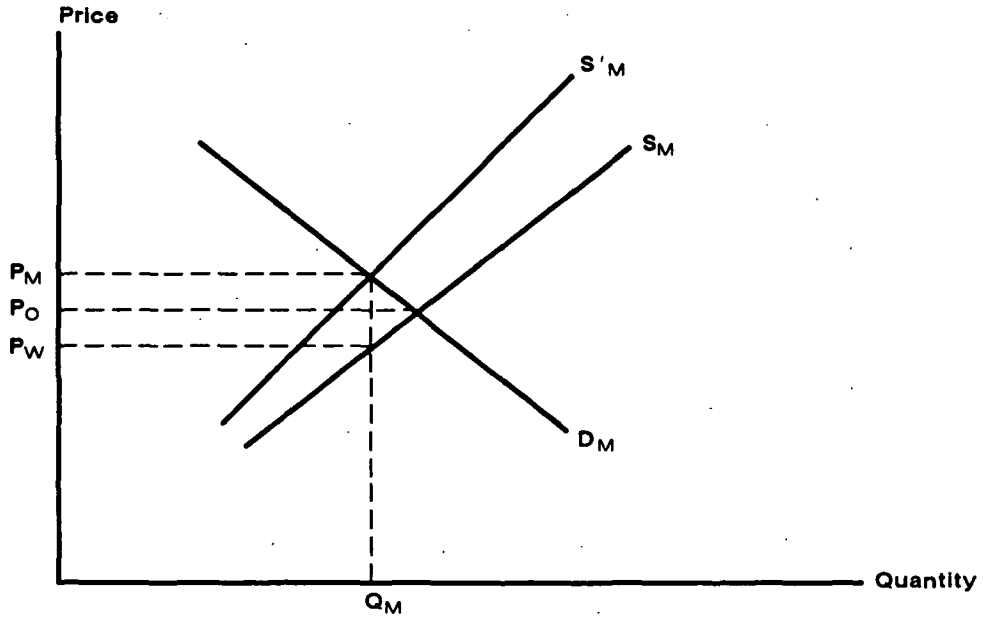


Figure H-2
The effects of a tariff on the import market



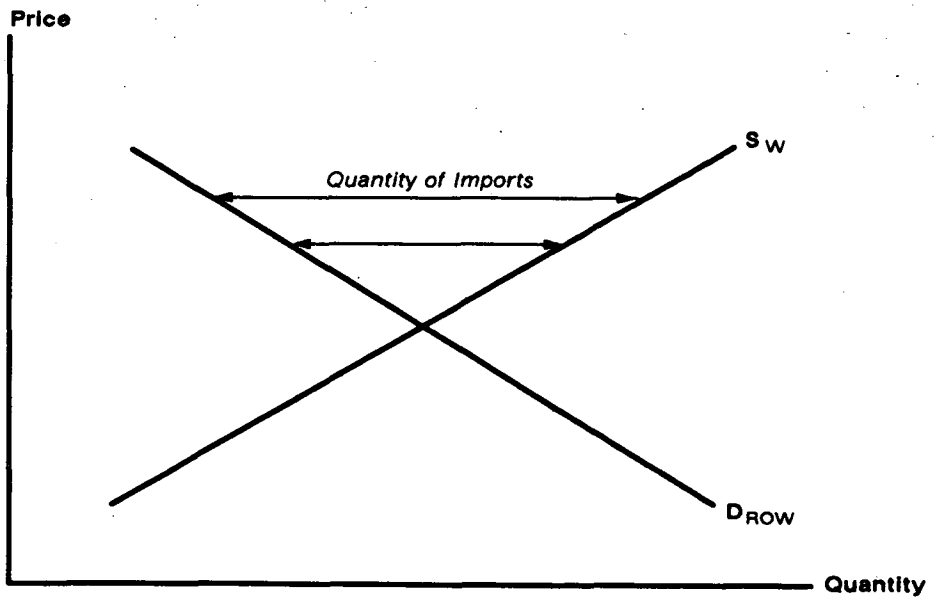
The next sections will consider the factors that contribute to the shapes of these supply and demand curves. In doing so, they will also clarify how tariffs on imported tuna affect both foreign markets and the market for domestic canned tuna.

The Supply of Imported Tuna

The derivation of the shape of the supply curve is conceptually straightforward. For any given world price, the quantity of tuna supplied to a particular country or tariff area is the difference between what exporters offer and what third countries purchase. Import supply to a particular country is thus the residual between world export supply and demand by other importers, as illustrated in Figure H-3.[3] For any given price, the quantity supplied to the country in question (represented by the curve S_M in figures H-1 and H-2) is the horizontal distance between world supply curve S_W and the demand curve for the "rest of the world" D_{ROW}.[4]

The interaction between the world tuna market and the market where the tariff is imposed works in both directions. A tariff decreases imports and reduces the world supply price of tuna. As figure H-3 implies, this decline in price leads to increased consumption and reduced production elsewhere in the world.[5]

Figure H-3
The world market for canned tuna



The Demand for Imported Canned Tuna

[3] This is strictly true only if tuna products destined for different markets are perfectly substitutable. In the very short run they are not, for they differ in such attributes as style of can, labelling, and specific variety of tuna used. In the medium to longer run, however, substitutability is quite high. Production lines can easily shift to different cans, labels, and varieties of fish.

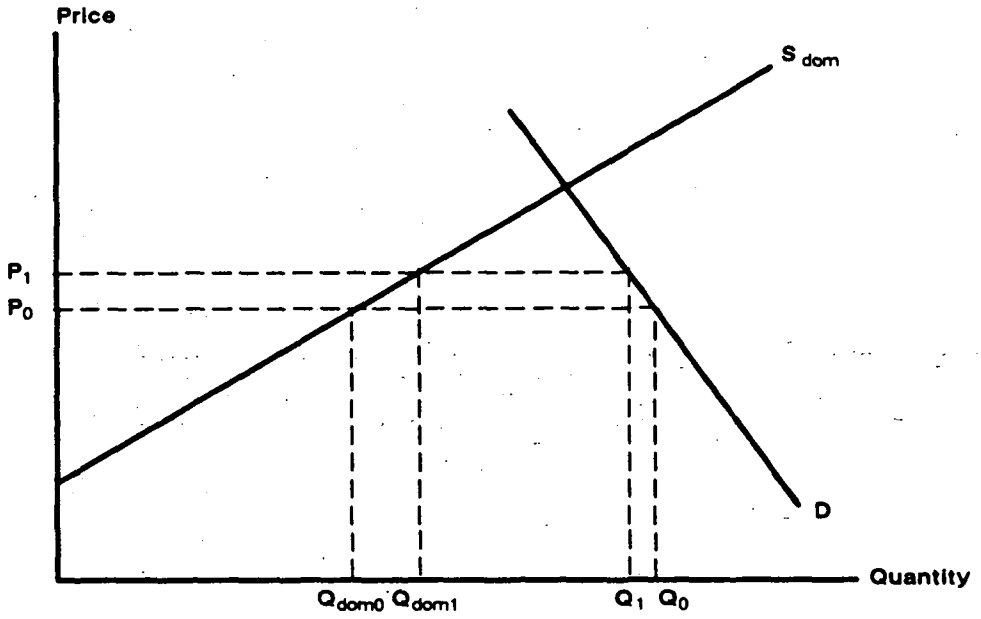
[4] The calculations presented in Chapter 6 apply a range of plausible values of elasticities for S_W and D_{ROW} to develop upper- and lower-bound estimates for the elasticity of S_M.

[5] Under likely demand conditions, increased consumption in the rest of the world does not make up for reduced consumption in the country where tariffs are imposed. Thus tariffs anywhere reduce both consumption and production in the world as a whole.

The shape of the import demand curve in a given country depends on the relationship between consumer demand for imported tuna and consumer demand for domestically produced tuna. Suppose, for example, that foreign and domestic tuna are perfect substitutes as far as consumers (and distributors) are concerned.[6] In that case, the quantity of imports at any given price is simply the difference between the amount that consumers are willing to purchase and the amount that domestic producers are willing to supply. In other words, import demand is the residual between domestic demand and domestic supply.

Figure H-4 illustrates this with supply curve S_{dom} for domestic supply and demand curve D for total tuna demand. The horizontal distance between the curves represents the quantity of imports demanded at each price.

Figure H-4
The domestic market for canned tuna (for the case of perfect substitutes)



As a note in the text explains, there are reasons to believe that foreign and domestic tuna are close substitutes. In many cases the same brand names are applied to both, they have similar labels, and there is little or no qualitative difference in the contents. Nevertheless there is, at least, some difference between domestic and imported tuna in the specific mix of products, and we must allow the possibility that consumers do not regard them as perfect substitutes. But even if consumers do regard them as perfect substitutes, the distributors who choose between foreign and domestic tuna may not.

When imported and domestic tuna are imperfect substitutes, then there is a less direct link between the consumer demands for each. Still, a rise in the price of imported tuna will both reduce total consumption of tuna and cause some switching from imported to domestic tuna. The magnitudes of these two effects will determines the slope of the import demand curve D_M in Figures H-1 and H-2.[7]

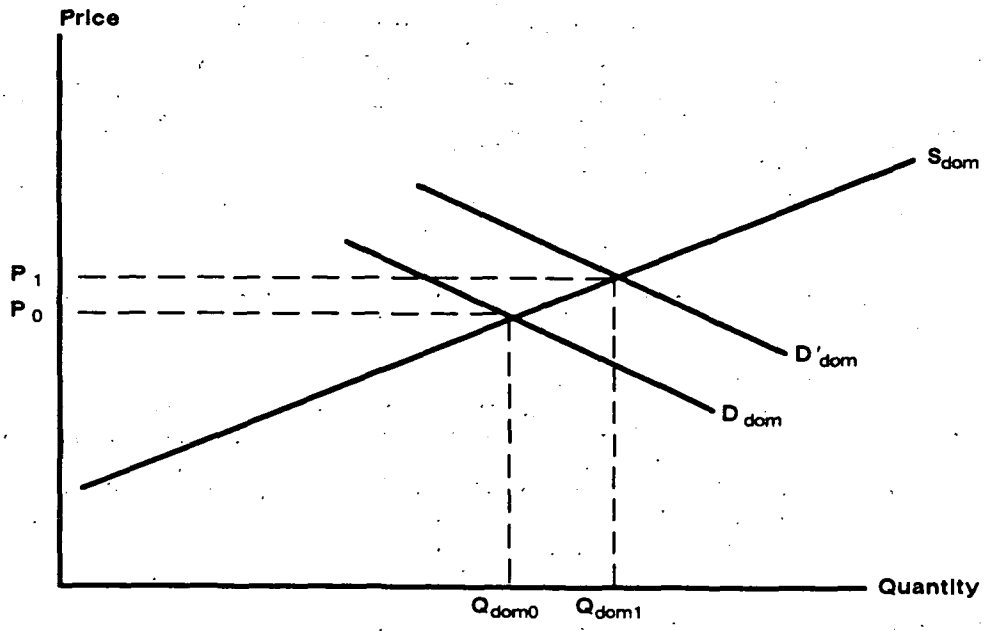
[6] This case corresponds to an infinite cross-price elasticity. The upper-bound assumptions presented in Tables 6-3 through 6-7 involve very high (virtually infinite) cross-price elasticities.
[7] These magnitudes are measured by the elasticity of composite demand and the cross-price elasticities used in the calculations in Chapter 6.

The Effect of Tariffs on the Domestic Canned Tuna Industry

The foregoing considerations can be turned around to consider the impact of tariffs on the supply of, and demand for, domestic canned tuna. If domestic and imported canned tuna are perfect substitutes, then the same price will apply to each. A tariff will raise the price of domestic tuna the same amount as imported tuna. In general this will be less than the full amount of the tariff. Figure H–4 illustrates how this will reduce consumption of tuna while increasing both the price and quantity produced of domestic tuna. Consumer demand is represented by curve D and domestic production by curve S_{dom}. P_0 represents the price without a tariff, P_1 the price with a tariff, Q_0 and Q_1 the quantities demanded without and with a tariff, and Q_{dom0} and Q_{dom1} the quantities produced domestically without and with a tariff. For each price the quantity imported is the horizontal distance between curves D and S_{dom}.

When domestic and imported tuna are imperfect substitutes, the link is less direct. A rise in the price of imported tuna will lead consumers to shift to domestic tuna. This is reflected in Figure H–5 by the rightward shift in the demand curve for domestic tuna, D_{dom}. This figure uses the same notation as the previous figure. As in the previous case, both the price and quantity of domestic tuna rise. However, in this case the rise in price of domestic tuna is less than the rise in price of imported tuna.[8] This is because, if the rise in price were equal, then consumers would not switch from imported tuna to domestic, and sales of domestic tuna would not increase.

Figure H–5
The market for domestic tuna (for the case of imperfect substitutes)



A Summary of the Effects of a Tariff

The most direct effect of a tariff is to raise the domestic price of imported tuna above the world supply price. The domestic price does not rise by the full amount of the tariff because the tariff depresses the world supply price. In the domestic market, the tariff leads indirectly to a rise in the price of domestically produced tuna and an increase in the quantity produced. In the world as a whole, the depressed supply price leads to reduced production in exporting countries and increased imports in other importing countries. It also leads to reduced domestic production in other importing countries.

[8] This is because, if the rise in price were equal, then consumers would not switch from imported tuna to domestic, and sales of domestic tuna would not increase.