

Industry & Trade Summary

Cured Fish



USITC Publication 3461
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Washington, DC 20436

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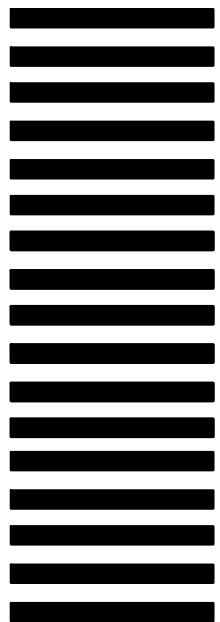
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PREFACE

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

This report on cured fish generally covers the period 1995-99 and represents one of several individual reports produced in this series in recent years. Listed below are the individual summary reports published to date on the agriculture and forest products sectors.

<i>USITC publication number</i>	<i>Publication date</i>	<i>Title</i>
2459	November 1991	Live Sheep and Meat of Sheep
2462	November 1991	Cigarettes
2477	January 1992	Dairy Produce
2478	January 1992	Oilseeds
2511	March 1992	Live Swine and Fresh, Chilled, or Frozen Pork
2520	June 1992	Poultry
2544	August 1992	Fresh or Frozen Fish
2545	November 1992	Natural Sweeteners
2551	November 1992	Newsprint
2612	March 1993	Wood Pulp and Waste Paper
2615	March 1993	Citrus Fruit
2625	April 1993	Live Cattle and Fresh, Chilled, or Frozen Beef and Veal
2631	May 1993	Animal and Vegetable Fats and Oils
2635	June 1993	Cocoa, Chocolate, and Confectionery
2636	May 1993	Olives
2639	June 1993	Wine and Certain Fermented Beverages
2693	October 1993	Printing and Writing Paper
2702	November 1993	Fur Goods
2726	January 1994	Furskins
2737	March 1994	Cut Flowers
2749	March 1994	Paper Boxes and Bags
2762	April 1994	Coffee and Tea

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

PREFACE—*Continued*

<i>USITC publication number</i>	<i>Publication date</i>	<i>Title</i>
2859	May 1995	Seeds
2865	April 1995	Malt Beverages
2875	May 1995	Certain Fresh Deciduous Fruits
2898	June 1995	Certain Miscellaneous Vegetable Substances and Products
2917	October 1995	Lumber, Flooring, and Siding
2918	August 1995	Printed Matter
2928	November 1995	Processed Vegetables
3015	February 1997	Hides, Skins, and Leather
3020	March 1997	Nonalcoholic Beverages
3022	April 1997	Industrial Papers and Paperboards
3080	January 1998	Dairy Products
3083	February 1998	Canned Fish, Except Shellfish
3095	March 1998	Milled Grains, Malts, and Starches
3096	April 1998	Millwork
3145	December 1998	Wool and Related Animal Hair
3148	December 1998	Poultry
3171	March 1999	Dried Fruits Other Than Tropical
3268	December 1999	Eggs
3275	January 2000	Animal Feeds
3350	September 2000	Grain (Cereals)
3352	September 2000	Edible Nuts
3355	September 2000	Newsprint
3373	November 2000	Distilled Spirits

CONTENTS

	<i>Page</i>
Preface	i
Abstract	1
Introduction	3
Background and summary	3
The production process	5
Products	6
U.S. industry profile	7
Inputs and production costs	7
Number of firms and employment	10
Marketing	10
Government regulations affecting the U.S. cured fish industry	11
Foreign industry profile	12
Overview	12
Dried fish	13
Salted fish	13
Smoked fish	14
U.S. trade measures	15
Tariffs and nontariff measures	15
Foreign trade measures	15
Tariff measures	15
Nontariff measures	16

CONTENTS—Continued

	<i>Page</i>
U.S. market	17

Consumption	17
Imports	17

Foreign markets	18
------------------------------	----

Foreign market profile	18
U.S. exports	20
U.S. industry performance in foreign markets	21

Appendices

A. Explanation of tariff and trade agreement terms	A-1
B. Statistical tables	B-1

Figure

1. Cured fish: Structure of the U.S. industry and market	8
--	---

Tables

1. Cured fish: U.S. production, trade, and apparent consumption, by product form, 1996-2000	B-2
2. U.S. ex-vessel prices of selected fish species, 1996-2000	B-3
3. Cured fish: Number of U.S. firms and employment, 1996-98	B-3
4. Cured fish: Labor productivity in salted, dried, and smoked fish production	B-4
5. Seafood establishments and product inspections, 1998 and 2000	B-4
6. Cured fish: World production by major producers, 1996-99	B-5
7. Cured fish: World production by product, 1996-99	B-6
8. Cured fish: Average export prices on world markets, 1996-99	B-6
9. Salted fish: World production, 1996-99	B-7
10. Smoked fish: World production, 1996-99	B-7
11. Cured fish products: Harmonized Tariff Schedule subheading description; U.S. column 1 rate of duty as of Jan. 1, 2001; U.S. exports, 2000; U.S. imports, 2000	B-8
12. Cured fish: Applied MFN tariff rates in selected foreign countries	B-10
13. Cured fish: U.S. imports by principal source, 1996-2000	B-11
14. Cured fish: U.S. imports by product, 1996-2000	B-12

CONTENTS—Continued

Page

Tables—Continued

15.	Cured fish: Asian production, trade, and consumption, 1996-99	B-13
16.	Cured fish: European production, trade, and consumption, 1996-99	B-13
17.	Cured fish: U.S. exports by product, 1996-2000	B-14
18.	Cured fish: U.S. exports by principal market, 1996-2000	B-15
19.	Cured fish: U.S. export performance for selected products, 1996-99	B-16

ABSTRACT

This Summary addresses market, industry and trade conditions for the cured fish industry (excluding shellfish) for the period 1996-2000.

- The cured fish industry produces three groups of products: salted fish, dried fish, and smoked fish. These products are made from a wide variety of fish species, some of the most popular of which are salmon (typically smoked), cod (dried), and herring (salted). During 1996-00, U.S. production of cured fish products fell by 9 percent in value, from \$133 million in 1996 to \$121 million in 2000. Among the most important products are smoked salmon and salted and/or dried cod.
- The U.S. trade deficit in cured fish products rose from \$19 million in 1996 to a record \$90 million in 2000. U.S. imports of cured fish, including dried cod and smoked salmon, rose from \$126 million in 1996 to \$143 million in 2000. The principal sources of U.S. imports have traditionally included Canada (58 percent during 1996-00), Norway (11 percent), and Iceland (7 percent). U.S. exports of cured fish, such as roe and salted cod, fell from \$107 million in 1996 to \$53 million in 2000. The principal markets for U.S. exports are Japan (61 percent of total exports during 1996-00), the European Union (11 percent), and Hong Kong (9 percent).
- Global production of cured fish totaled 4.4 million metric tons (mmt) in 1999 (the latest available year), up from 4.3 mmt in 1997. The largest producers are China, Japan, and Indonesia, with a combined share of 56 percent of world production in 1999. From 1996 to 1999, world exports declined from 667,000 mt to 629,000 mt in quantity and from \$2.83 billion to \$2.75 billion in value. As a share of production volume, world exports averaged 15 percent during 1996-99.
- Low demand (in part due to increasing availability of fresh or frozen fish) and declining resource abundance are among the greatest problems facing the U.S. and many foreign industries. Declining abundance of raw material causes problems both in terms of domestic supply of harvested fish and the volume of fish available worldwide for import as inputs into cured-fish processing. Some of the world's most valuable fisheries are becoming depleted through a combination of overfishing and industrial (i.e., coastline) development. Aquaculture (e.g., of salmon) is helping to offset the declining availability of fish harvested from the seas.

INTRODUCTION

Background and Summary

This Industry and Trade Summary covers cured fish, except shellfish.¹ Information is provided on the structure of the U.S. industry, importers and exporters, and consumers. Additional information is provided on certain foreign industries, domestic and foreign tariff and nontariff trade measures, and the competitiveness of the U.S. industry in domestic and foreign markets. Cured fish accounts for a small portion of industry output under Standard Industrial Classification (SIC) Code 2091, Canned and Cured Fish and Seafoods, and under North American Industry Classification System (NAICS) Code 31171, Seafood Canning. Imports and exports of cured fish are recorded under headings 0305 and 1604(part) of the *Harmonized Tariff Schedule of the United States (HTS)*. This report generally covers the period 1996 through 2000, providing earlier historical data, when necessary, to show longer term trends. Appendix A contains an explanation of tariff and trade agreement terms.

Three general types of cured fish are discussed in this report: salted fish (or saltfish), dried fish, and smoked fish. Sometimes a mix of methods is used, as in the production of klipfish, which is dried fish, lightly salted. Smoked fish also often contains added salt. Several species of fish are used to make cured fish; common species in the U.S. market include cod, herring, mackerel, and salmon.

Salting, drying, and smoking are very old, even ancient means of preserving fish. Saltfish originated long ago in temperate climates, such as the Mediterranean and the Iberian coasts. Drying and smoking fish are more recent and more common in colder climates, in large part because of a shortage of good quality salt. More detailed information on production methods is found in the following section of this report.

Cured fish was the first industry engaged in by European settlers in North America. The cod resources of the Northeast Atlantic attracted and supported voyages from Europeans beginning about 1000, with visits to Newfoundland by Iceland's Leif Ericson and voyages to the Newfoundland fishing grounds by fleets of Basque fishermen. Later settlements, dating soon after John Cabot's 1497 "discovery" of Canada for England's King Henry VII, were engaged primarily in drying and salting cod for shipment back to European markets.² These settlements were seasonal at first, and later became permanent, forming the base for expansion of later industries such as fur trapping.

¹ Fresh or frozen fish, shellfish, and canned fish are covered in other Industry and Trade Summaries.

² According to one account of Cabot's voyage, Cabot found "the Sea there is swarming with fish which can be taken not only with the net but in baskets let down with a stone... So many fish that this Kingdom would have no further need of Iceland, from which there comes a very great quantity of the fish called stockfish [dried fish]." Raimondo di Soncino, Milan's envoy to London, in a letter to the duke of Milan, Dec. 12, 1497, quoted in Mark Kurlansky, *Cod: a biography of the fish that changed the world* (New York: Walker and Company, 1997), pp. 48-9.

Being the first North American export, cured fish not surprisingly was also first to be subject to trade barriers. The number of French and Portuguese fishing trips to the Grand Banks off Newfoundland grew so large during the years following Cabot's voyage that in 1506 the King of Portugal imposed a 10-percent import duty on the vessels' catch in "the first European attempt to protect home industry from American competition."³

Although it was the dominant form of seafood through the early 1900s, cured fish today is the smallest sector of the broader U.S. seafood industry. Total U.S. cured fish production of \$121 million in 2000 was dwarfed by other seafood sectors, such as fresh or frozen fish (\$5.3 billion) and canned fish (\$1.3 billion).⁴ Nevertheless, some cured fish products are popular. In the U.S. market, one of the most popular cured fish products today is smoked salmon. Salted cod and salted or smoked herring are also common. As are with other seafood products, cured fish is a good source of protein. But unlike fresh or frozen seafood, cured fish can be stored and transported long distances from its source without refrigeration, enabling consumption by a wider array of consumers.

U.S. consumption of cured fish is limited. On a per-capita basis it has been constant for many years, at 0.3 pounds per person annually, despite the growing popularity of seafood in general, particularly among health-conscious consumers.⁵

The decline of the cured fish sector is not limited to the United States, or even to developed economies. In developing economies, where consumption has traditionally been strongest, the proportion of overall fish consumption accounted for by cured fish has been declining for many years. As described later in this report, cured fish consumption in regions such as Asia and Africa is stagnant or down, which has ramifications for exporting nations (although the United States is not a significant exporter). This decline in consumption is as much a supply-side phenomenon as a demand-side one: according to one source, the decline of the cured fish sector in developing countries can be attributed to increased urbanization and investment in transport and roads, the latter enabling fishermen to sell their catch fresh rather than cured.⁶

The U.S. cured fish industry consists of numerous small establishments scattered along the Atlantic, Gulf and Pacific coasts and around inland lakes and rivers. Cured-fish processing is not as capital intensive as most other segments of the seafood industry. The main capital investments required are the buildings and racks for holding fish, and the stoves for smoking. There appear to be few economies of scale in fish curing, as there are a large number of small establishments; any gains in increasing the size of the physical facility may be offset by higher costs of procuring sufficient fish to keep the establishment fully utilized. Most of the nonmanagerial labor employed in fish curing consists of relatively unskilled workers who handle and cut the fish or operate pallet trucks and other equipment.

³ Samuel Eliot Morison, *The European Discovery of America: The Northern Voyages, A.D. 500-1600* (New York: Oxford University Press, 1971), p. 225.

⁴ For information of these other seafood sectors, see the Industry and Trade Summaries on Fresh and Frozen Fish (in preparation) and Canned Fish (USITC Publication 3083).

⁵ National Marine Fisheries Service, *Fisheries of the United States* (statistical yearbook; various issues), National Oceanic and Atmospheric Administration, U.S. Department of Commerce. In contrast to the steady, low consumption of cured fish, U.S. per capita consumption of fresh or frozen seafood grew from 7 pounds in 1970 to 10.5 pounds in 2000, an increase of 50 percent.

⁶ Sfier-Younis, Alfredo, *Fishery: Sector Policy Paper*, The World Bank, Dec. 1992, p. 18.

There does not appear to be substantial investment required on the marketing side, for the cured-fish market is not generally highly brand sensitive. (Exceptions may include the marketing of products such as “Norwegian” or “Scottish” smoked salmon, although there the emphasis is on nationality rather than corporate brand.) The bulk of the sales of smoked fish are made through retail outlets such as grocery stores and specialty shops, while that of salted fish are often made in generic or unbranded form in ethnic markets. Unlike other seafoods such as canned fish, there are few cured fish products with labels that are household names.

Imports of cured fish supply a large share of U.S. consumption, averaging 68 percent of the total value of consumption during the 1996-2000 period. Such imports reached almost \$143 million in 2000, and consisted largely of dried or salted fish (mainly cod and other groundfish, herring and mackerel) from Canada, Iceland, and Norway. Exports are also important to the U.S. cured fish industry: such exports reached \$53 million in 2000, or 44 percent of U.S. production. Most exports consist of Pacific salmon roe (eggs), in dried or salted forms or in brine, destined for Japan. U.S. cured fish imports far exceed exports, more so in recent years as the value of exports has declined sharply. The U.S. trade deficit in cured fish products reached \$90 million in 2000, up from \$19 million in 1996.

The Production Process

In the production of cured fish, as with most seafoods, proximity to the raw material is of greater importance to plant location than proximity to the market. This is because of the relatively higher cost of transporting raw versus finished product. Most fish curing establishments are located along coastlines and rivers, near the habitat of the fish species they intend to process. The freshly caught fish, which has a short shelf life, is delivered to the curing establishment, which processes it into products with much longer shelf lives, before transport to markets.

The three primary methods to cure fish involve simple operations. To make dried fish, curers clean and split the fresh fish (open the fillets to the air), and hang or lay them out on racks in the sun to dry. The air must be cool and dry to be effective; thus, such processing is more common in colder climates than in tropical or temperate regions. Once dried, the fish becomes as hard as stiff leather, even resembling in some cases a section of bark from a tree. Until refreshed by soaking and cooking, it is inedible (or at least highly unappealing). Its shelf life in this form is measured in weeks or months, rather than hours or days when in fresh form, and thus it is in great demand in poorer regions where refrigeration is costly or unavailable.

Smoked fish is made by hanging the cleaned fish from racks in a smoking house, a large room filled with smoke from burning wood. The smoke dries out the fish, although not as completely as the sun-dried operation described above. The smoke also adds a distinctive flavor, which can be altered by burning different species of wood, such as oak, alder, or beech.⁷ Small amounts of salt serve to absorb moisture and add flavor. The smoking process

⁷ Most smoking is of the type known as “cold smoking,” in which an air temperature of 90 to 100 degrees is maintained. Cold-smoked fish must generally be refrigerated to prevent spoilage. A limited amount of fish is cured by “hard smoking,” which requires higher temperatures and

(continued...)

can take as little as 18 hours for smaller fish such as herring (“kippers”) or 2 to 3 days for larger fish such as salmon. Once smoked, the final product can be eaten as is, without being refreshed with added water. Because smoked fish is not as completely dried as “dried” fish, it has a shorter shelf life than dried fish and is typically refrigerated or sealed in plastic or other packaging to extend its shelf life.

Salted fish also ends up dried, but the principal preservation agent is the salt, which is poured in large quantities on top of each layer of fresh fish. The salt absorbs the moisture from the fish, and the fish absorbs much of the salt. Thus, to be edible, the salted fish must first be soaked to remove the salt; this soaking typically takes a day or more (with occasional changes of fresh water), but the process may be speeded up by heating the water. Like dried fish, salted fish has a very long shelf life and is popular in regions with insufficient refrigeration. Also like dried fish, this process is generally less economical in tropical, humid climates.

Products

The U.S. seafood industry produces several cured fish products. The most important, in terms of the volume produced, is cod in salted or dried forms. Production of this traditional seafood, popular among people of Mediterranean and other European descent, averaged 6,500 metric tons during 1996-2000, about one-quarter of all U.S. cured fish production. Another significant U.S. salted fish is herring. In the smoked fish sector, the largest item by far is salmon, accounting for nearly three-quarters of all U.S. cured fish output. Another popular smoked fish is trout, the raw material for which is largely supplied by a growing aquaculture or fish-farming sector. Other significant cured fish products include roes or eggs (mainly salmon and herring), produced primarily for export but also for domestic consumption as a caviar substitute.

Cured fish are sometimes packed in brine or sauces, in airtight (canned or sealed plastic) containers. These packing media add flavor and/or reduce the preparation time needed before serving the product. Salted herring packed in brine, for example, needs less refreshing with added water than dried, salted cod does. Other information on demand for various cured fish products are discussed in the U.S. market section of this report.

⁷ (...continued)

takes less time. Hard smoking also kills more bacteria and thus extends the product’s shelf life. In addition, some “smoke flavor” products are not produced by smoking at all, but by the use of flavoring additives or “liquid smoke.” Michael W. Paparella, “Smoked Fish,” *The Shore Journal*, found at http://www.intercom.net/local/shore_journal/mwp10107.html, retrieved Nov. 15, 1999.

U.S. INDUSTRY PROFILE

Figure 1 presents a profile of the U.S. cured fish industry. The industry consists of numerous small, privately held firms that in many cases produce other products in addition to cured fish. As a result, detailed data on the cured fish industry are limited.⁸ However, some broad economic indicators are available. In 1999, the U.S. seafood industry produced cured fish products valued at \$151 million, a record (unadjusted for inflation). However, production subsequently dropped sharply, to \$121 million in 2000 (table B-1).

Cured fish is marketed mainly through retail outlets, including general and ethnic grocery stores. Consumption is largely a function of demographics, season, customs, and price. As with all seafoods, health concerns about fat and cholesterol probably also play a role in demand. The U.S. production of cured fish, like other seafood production, is regulated (on a voluntary basis) by the Department of Commerce.⁹

Inputs and Production Costs

The principal input into the production of cured fish is unprocessed fish, which is procured in whole or eviscerated form, fresh or, less often, frozen. As described earlier, the whole or eviscerated fish is further processed by salting, drying, and/or smoking. Between 30 and 100 percent of the fish is utilized, depending mainly on the species and size of the fish, and the rest of the fish is discarded or processed into industrial-use products.

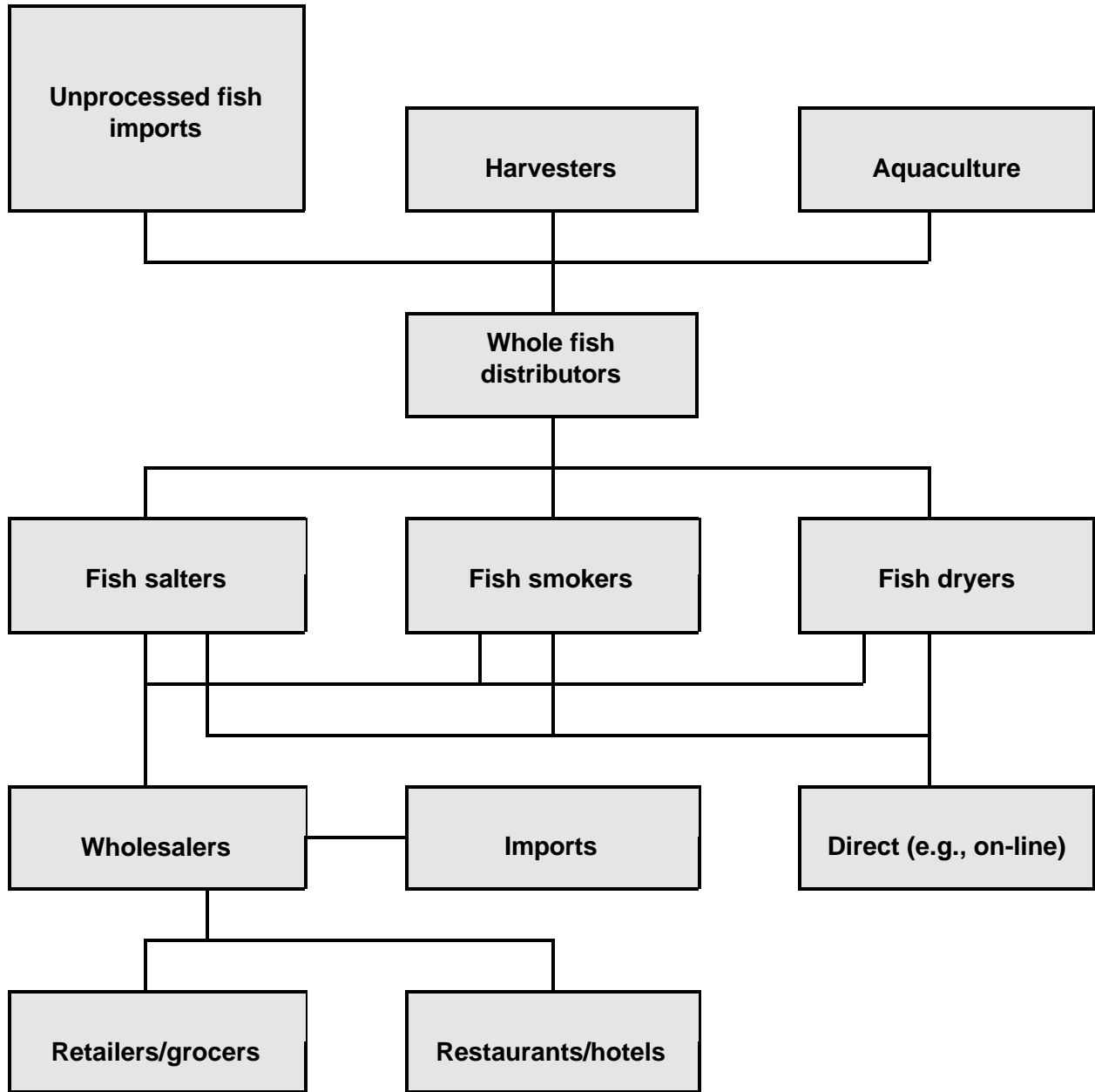
The largest cost of production in the cured fish industry is the price of the fish that makes up the raw material. Such fish are often procured from dockside sellers such as dealers or fishermen themselves. The dockside (or ex-vessel) prices received by fishermen for fresh fish are determined mainly by forces outside the cured fish market, i.e., by demand and supply in markets for fresh, frozen, or canned fish products, because so little of the overall ex-vessel-level demand for fresh fish comes from the cured fish sector.¹⁰

⁸ In addition, separate data for cured fish are not published under the Standard Industrial Classification (SIC) and North American Industry Classification (NAIC) systems. Rather, the U.S. canned and cured fish and seafoods industry is covered as a single industry under SIC Code 2091, and in the NAIC system under U.S. Industry 31171, Seafood Canning. For purposes of analyzing the cured fish industry, the data in these systems must be used with extreme caution because they are heavily skewed by the canned fish sector, which makes up more than 90 percent of the total for this sector. For this reason, SIC and NAIC data will not be further discussed in this report.

⁹ National Marine Fisheries Service, *Fisheries of the United States*, Current Fisheries Statistics Series No. 9800, National Oceanographic and Atmospheric Administration, U.S. Department of Commerce (annual; various issues).

¹⁰ This is less true in small, isolated ports where fish curers may purchase much or most of the available supply. In such cases, the market power held by fish curers is potentially greater than in larger, diversified ports, and conditions in distant fresh markets affect local prices only to the extent that fishermen can transship their catch to such distant markets.

Figure 1
Cured fish: Structure of the U.S. industry and market



Source: Staff of the USITC.

The ex-vessel prices of certain fresh fish have fluctuated significantly in recent years, as shown in table B-2. Prices of some key species have risen, while others have fallen, resulting mainly from changes in supply and demand conditions for the various species in the larger fresh or frozen markets. The ex-vessel price of Atlantic cod, which is important to producers of dried and salted cod, dropped sharply in 1996 to \$1.87 per kilogram, and then rose to a recent peak of \$2.46 per kilogram in 1999, an increase of 31 percent in only 3 years. The price of eels has been even more volatile: prices rose by 40 percent, from an average of \$6.15 per kilogram in 1996 (the first year the average annual price was published) to \$13.59 per kilogram in 1997, before dropping to only \$1.71 per kilogram in 2000. The price of Atlantic mackerel, a popular salted product, rose from \$0.29 per kilogram in 1996 to \$0.62 the following year, but then declined to an average price of \$0.36 per kilogram in 2000. On the West Coast, the drop in the price of herring has been notable: from a 1996 peak of \$1.28 per kilogram in 1996, the average annual price fell to just \$0.26 per kilogram in 1998, before recovering slightly to \$0.35-0.36 per kilogram in 1999-00.

Another important expense in fish curing is salt, which is used not only in the production of saltfish but also, in lesser amounts, in various smoked and dried fish products. A proxy for the wholesale price of salt that would be paid by fish curers is the average import price for salt (see tabulation). This expense rose through 1998, when it peaked at \$16.53 per metric ton before falling to \$14.15 per metric ton in 2000.

Year	Average unit value of U.S. salt imports
1996	15.74
1997	16.11
1998	16.53
1999	15.43
2000	14.15

An important fixed cost is interest, which represents the opportunity cost of existing fixed capital (such as that invested in curing houses) or the actual cost of new fixed capital. A proxy for this long-run expense would be an interest rate for a long-term loan, such as the new-home mortgage yield shown in the following tabulation.¹¹ By this measure, capital costs steadily declined from 1996 to 1999, before rising sharply in 2000.

Year	New-home mortgage yield
1990-95 average	
1996	7.80
1997	7.71
1998	7.07
1999	7.04
2000	7.55

¹¹ Source: *Economic Report of the President, 2001*; table B-73. The mortgage rate for a commercial building may differ from this rate at any one time but would probably follow the same trend.

There can be no firm conclusion drawn about recent trends in the cost side of the cured fish sector as a whole. The single most important cost of production in cured fish, the price of raw fish, has fallen for some species and risen for others. Other key costs, such as the price of fixed capital and of salt, have fluctuated.

Number of Firms and Employment

Fish curing can be a cyclical business, with seasonal ups and downs depending upon the abundance of fish inputs. Many fish curing establishments operate only during the fishing season, while others operate year-round with other, unrelated uses for inputs. Therefore, actual employment in fish curing also fluctuates, and there is a difference between seasonal and year-round equivalent employment. Table B-3 presents data on the number of companies and employment in the production of salted, dried, and smoked fish in the United States.

Information on labor productivity in fish curing is provided in table B-4. In general, productivity in each of the three categories of production has fluctuated a great deal in recent years. On an average employment basis, pounds produced per employee ranged from a low of 6,722 pounds (in 1995) to a high of 19,711 pounds (in 1998) of salted fish; 2,640 pounds (in 1995) to 6,390 pounds (in 1997) of dried fish; and 5,849 pounds (in 1996) to 9,143 pounds (in 1998) of smoked fish.

Marketing

Although cured fish producers in the U.S. industry are sometimes vertically integrated upstream into harvesting, they generally do not own or operate downstream marketing operations past the wholesale stage. Rather, they rely on brokers and other distributors to market their product to retailers. Such distributors usually handle a wide variety of food products in addition to cured fish, which facilitates the marketing of cured fish to large buyers such as supermarket chains.

Like fresh or frozen fish, cured fish often is sold as a bulk commodity in a simple marketing process. This is especially true of dried fish, which is often sold completely unbranded. Other products, such as salted herring, are sold under brand names, but the typical grocery store will not carry more than one or two different brands because of the limited demand for the product. Further down the line is smoked salmon, which can attract highly brand- (or at least nationality-) conscious consumers. In the salmon trade, nationality, brand name, and reputation are very important because the final consumer has a selection available and makes the final choice between the available nationalities and brands. For other products, the final consumer has less concern about the brand and so other competitive elements -- price and physical quality -- are relatively more important than brand reputation in marketing.

The nature of competition between imported and domestically produced cured fish also depends on brands and on the marketing channel. For generic, bulk-marketed products, the imported product is indistinguishable from, and can be marketed in direct competition with, the domestic product. The retail price is the same for either. For products where the label is important, however, there are consumers who prefer imported over domestic and vice versa.

Government Regulations Affecting the U.S. Cured Fish Industry

Unlike other U.S. meat products for human consumption, domestically produced seafood is not subject to mandatory Federal inspection. There is, however, a voluntary inspection program carried out by the U.S. Department of Commerce. This Federal inspection service, unlike mandatory inspection programs for other meats, is a fee-for-service program. In addition to the inspection service, the Commerce Department operates a fee-for-service grading program which distinguishes between products of differing levels of quality (e.g., “Grade A” versus “Lot Inspected”).

Services provided by the inspection program include vessel and plant sanitation, product inspection and grading, label reviews, product specification reviews, laboratory analyses, training, education, and information. In addition, consultative services are provided in foreign countries, and inspection and certification services are provided for imported and exported products, in addition to mandatory Food and Drug Administration (FDA) programs. In 1997, FDA implemented its Hazard Analysis Critical Control Point (HACCP) rule¹² regarding “Procedures for the Safe and Sanitary Processing and Importing of Fish and Fishery Products.” All seafood firms, whether processing domestic or imported fish, must comply with this rule, and the Commerce Department program provides to the seafood industry HACCP training, implementation assistance, and verification service to ensure such compliance. The number of establishments and volume of product (all seafood, including cured fish) inspected by the Commerce Department in 1998 and 2000 are shown in table B-5.¹³

¹² 21 CFR Parts 123 and 1240.

¹³ National Marine Fisheries Service, U.S. Department of Commerce, *Fisheries of the United States, 2000*, p. 96.

FOREIGN INDUSTRY PROFILE

Overview

In 1999, world production of cured fish totaled 4.4 million metric tons, up by 1 percent over the 1996-98 average of 4.36 million metric tons (table B-6).¹⁴ Almost 130 countries reported cured fish production to the Food and Agriculture Organization of the United Nations (FAO) in 1999. In that year, more than half of world cured fish production was concentrated in the Asian Pacific Rim. Of particular importance are China (20 percent of the 1999 world total), Japan (18 percent), and Indonesia (18 percent). Another 15 percent of world production is accounted for by Western Europe, mainly Norway (3 percent). The U.S. industry, according to the FAO, accounts for only 0.5 percent of world production. Among other NAFTA members, Canada ranks 17th in size, with 1 percent of world cured fish production, and Mexico accounts for only 0.05 percent of world production.

The location of foreign cured fish industries and patterns of international trade in cured fish vary by species. As in the case of the U.S. industry, most foreign curing facilities are located near the raw material, raw fish. In addition, there are inherent differences between the various species, making the final product from one species distinct from another in the consumer's view, as discussed elsewhere in the report. The main products and species processed by the world's cured fish industries are listed in table B-7. Dried cod and other fish, HTS subheadings 0305.51 and 0305.59, make up the largest category by volume, with 68 percent of the 1999 total. Much smaller proportions are accounted for by smoked fish, HTS subheadings 0305.41-0305.49 (16 percent) and fish that is salted or in brine, HTS subheadings 0305.61-0305.69 (15 percent).

Prices for individual cured fish products, as measured by average export prices on world markets, have moved in divergent directions in recent years, as shown in table B-8. Several have declined sharply: for example, smoked trout and char (-39 percent during 1996-99), smoked salmon (-16 percent), and smoked herring (-10 percent). Some products has risen significantly in price, including dried cod (38 percent) and salted mackerel (20 percent). On average, by this measure, prices of cured fish products declined from \$4.17 per kilogram in 1996 to \$3.83 per kilogram in 1997, before recovering to \$4.20 per kilogram in 1999.

¹⁴ Data reported by the Food and Agriculture Organization of the United Nations (FAO); available on the FAO website at www.fao.org. FAO data discussed herein are for commodities provided for under HTS subheadings 0305.20 through 0305.69.

Dried Fish

Dried fish is the world's most important cured fish product, in terms of both the value and volume of world production. Nearly 100 nations produced an annual average of about 3 million metric tons during 1996-99. The total value of dried fish production (estimated using export unit values) averaged over \$10 billion during 1996-99.

In U.S. trade and consumption, the most popular species used in the production of dried fish is cod, which is found in cold marine waters throughout the world. As noted earlier in this report, dried (and salted) cod were the first products produced by European settlers in North America, and some of the same countries that produced it then dominate the industry today. The following tabulation of FAO data shows the major nations producing dried and salted cod in recent years (data in metric tons):¹⁵

Country	1996	1997	1998	1999
Norway	117,400	98,293	98,994	75,766
Iceland	41,158	41,281	41,954	42,860
Denmark ¹	10,479	8,222	7,658	8,081
Canada	3,194	3,162	4,621	4,941

¹ Includes Faeroe Islands.

Elsewhere in the world, there are many different fish species used in dried fish production. According to the FAO, the world's largest producer of dried fish is Indonesia, which in 1999 produced 756 thousand metric tons, or 25 percent of the world's output; products ranged from anchovies to shark fins. The second largest producer is Japan, whose dried fish output in 1999 totaled 398 thousand metric tons, or almost 15 percent of total world production. Japan's dried fish products include pilchards, herring roe, eels, and many others.

Salted Fish

Salted fish is the second largest of the three major groups of cured fish products. FAO reports more than 100 nations engaged in the production of salted fish; total production reached an estimated 655,000 metric tons in 1999, a 16-percent decrease from the 1996 level of 784,000 metric tons (table B-9). Cod is the most important species processed into salted fish: salted and dried cod, popularly known as bacalao, accounts for more than one-seventh of the 1999 total. Other important species include herring and anchovies. The estimated value of world salted fish production (calculated using export unit values) totaled \$1.7 billion in 1999, a decline of 19 percent from 1996 production of \$2.1 billion.

¹⁵ In the tabulation, the figure reported by FAO for Denmark's 1998 production may be misreported. A quantity ten times larger would be more consistent with recent trends and with Denmark's export data for this product.

The salted fish product with the greatest growth in production is anchovies. South Korea is the largest supplier of salted anchovies, with annual production in excess of 40,000 metric tons, or more than half of the world's supply. The EU – mainly Italy, Greece, and Spain – comprises the second largest source of supply, accounting for 18,000 to 20,000 metric tons, or about 25 percent of the world's total reported by the FAO.

Herring is also important, but its share of world production is declining due in part to declining demand, as industry sources report cured herring to be an inferior food. Another factor is diminished abundance of herring in European waters. Farmed herring has yet to be commercially significant. Poland is the largest producer of salted herring; its production of 20,000 metric tons in 1999 accounted for 31 percent of global production reported by the FAO. The EU, particularly the Netherlands and Ireland, together accounted for another 20,000 metric tons in 1999. Norway is the third largest producer of salted herring, accounting for 21 percent of the world total.

The average price of salted cod, as measured by average export prices on world markets, has generally declined in recent years (see table B-8), while that of salted herring has risen.

Smoked Fish

Smoked fish is a small but increasingly important cured fish product in world markets. FAO reports that more than 60 nations produce smoked fish; global production generally increased from 635,000 metric tons in 1996 to 696,000 metric tons in 1999 (table B-10). Herring and salmon were the two most important species processed into smoked fish, together accounting for one-sixth of the 1999 total. The total value of world smoked fish production (calculated using export unit values) reached nearly \$4 billion in 1999, a 13 percent increase over the 1996 production level of \$3.5 billion.

The smoked fish product with the greatest growth in production is salmon, as shown in table B-10. Most smoked salmon comes from European countries: the EU produces about 75 percent of the world's total reported by the FAO, and Norway accounts for an additional 3 percent. Much of the smoked salmon processed in Europe is Atlantic salmon raised in aquaculture facilities.

Smoked herring is also important, but its share of world production is declining for the same reasons described above for salted herring. The EU, particularly the Netherlands and the United Kingdom, together accounts for 20,000 metric tons, or 60 percent of world output. Outside the EU, Canada is the largest producer of smoked herring, accounting for more than one-third of the world total.

There are several other fish species used in smoked fish production. According to the FAO, the world's largest producer of smoked fish is China, which in 1999 produced 235,000 metric tons, or 33 percent of the world's total output. The Philippines supplied 43,000 metric tons (6 percent), and Ghana, Indonesia, and Sierra Leone each supplied an additional 35,000 to 40,000 metric tons of smoked fish products. Against these rivals, the U.S. industry is tiny, with FAO-reported production of only 6,800 metric tons, or less than one percent of world production.

Prices of smoked fish products, as measured by average export prices on world markets, have generally declined (table B-8). The largest decline was in the price of trouts and chars (down by 28 percent).

U.S. TRADE MEASURES

Tariffs and Nontariff Measures

U.S. import tariffs on cured fish products in 2001 are presented in table B-11. Such tariffs are affected by several trade agreements, including the North American Free Trade Agreement (NAFTA) and the Uruguay Round Agreement of the former General Agreement on Tariffs and Trade, which established the World Trade Organization (WTO). NAFTA directly affects U.S. trade with Canada and Mexico, while U.S. obligations under the WTO affect trade with most other nations. In addition, current or future negotiations under the auspices of other bi- or multilateral associations, such as the Asia Pacific Economic Cooperation forum, may also affect future U.S. cured-fish trade.

Under NAFTA, which incorporated the earlier U.S.-Canada Free Trade Agreement, the United States eliminated its duties on cured fish imports from Canada. In addition, U.S. duties on cured fish imports from Mexico are scheduled to be eliminated by the year 2003. NAFTA provisions relating to Canada affected \$79 million in two-way trade in cured-fish products in 2000, while those with Mexico affected less than \$2 million in two-way trade in 2000.

FOREIGN TRADE MEASURES

Tariff Measures

Table B-12 presents tariff rates on cured fish imports applied by selected large consuming nations. The lowest foreign tariffs are found in Canada, which permits most cured fish products to enter duty-free (see also the following discussion of NAFTA). Tariffs in the European Union range from 5 percent ad valorem on certain dried anchovy products to 20 percent ad valorem on certain smoked fillets. Tariffs in Japan range from 4 percent ad valorem on certain cured livers and roes to 15 percent ad valorem on a wide variety of cured fish products.

In the Uruguay Round Agreement, important results concerning cured fish products included the agreement by major importing countries to bind their existing tariffs against future increase and/or to reduce already bound rates. These agreements are significant to U.S. exporters because earlier tariff reductions negotiated with foreign countries under previous rounds of negotiations under the GATT have thereby been locked into place under the WTO. (WTO members may raise tariffs that are not bound.) Other significant results of the

Uruguay Round for cured fish exporters concern nontariff barriers, which are discussed in the following section.

NAFTA governs trade between the United States, Canada, and Mexico; under this agreement, all U.S. cured fish imports to Canada and Mexico are eligible to enter duty-free. Prior to the implementation of NAFTA, Mexico charged a straight 20-percent ad valorem duty on all imports of U.S. cured fish products. Under NAFTA, Mexico agreed to immediate (1994) elimination of its duties on imports from Canada and the United States of all cured fish except for fish fillets, dried, salted or in brine, but not smoked (HTS subheading 0305.30), duties on which were phased out in 5 equal annual stages by 1998.¹⁶ Under NAFTA, Canada agreed to eliminate by 1998 its duties on all cured fish imports from the United States.

Nontariff Measures

The most important type of nontariff measure for the cured fish industry is technical barriers, i.e., government regulations and policies (other than tariffs) which govern the sale of products in national markets with the objective of correcting externalities in production, distribution, or consumption.¹⁷ However, such nontariff measures in foreign countries can hinder U.S. exports to the markets where the barriers are in place and, by depressing world prices, they can also reduce prices received by U.S. exporters in other markets. There are a variety of foreign sanitary and phytosanitary regulations, quotas, and other nontariff measures for food products generally; these may also hinder U.S. cured fish exports. Such trade barriers are described in more detail in an annual review of foreign trade barriers published by the U.S. Government.¹⁸ Specifically for cured fish, some significant trade barriers are found in Japan, including quantitative restrictions on surimi, pollock roe, herring, cod, mackerel, and other products.

U.S. laws that address foreign nontariff measures include section 301 of the Trade Act of 1974, which authorizes the President to retaliate against foreign nations that impose burdensome nontariff measures or violate trade agreements; such retaliation can and usually does take the forms of suspending previously granted trade concessions or imposing new restrictions or fees on trade of the offending nation. No recent section 301 investigations involving cured fish products have been instituted.

¹⁶ North American Free Trade Agreement, Annex 302.2, Tariff Schedule of Mexico (Washington, DC: Government Printing Office).

¹⁷ Donna Roberts, Timothy E. Josling, and David Orden, "A Framework for Analyzing Technical Trade Barriers in Agricultural Markets." Market and Trade Economics Division, Economic Research Service, U.S. Department of Agriculture. Technical Bulletin No. 1876 (TB-1876), Mar. 1999, p. 3.

¹⁸ United States Trade Representative, *2001 National Trade Estimate Report on Foreign Trade Barriers* (Washington, DC: Office of the United States Trade Representative, 2001). This report is available on the USTR website at <http://www.ustr.gov>.

In addition to section 301 and other unilateral actions, there are multilateral institutions that provide mechanisms for trade dispute resolution. The largest is the WTO, which addresses nontariff measures and other problem areas and provided improved means to eliminate or resolve disputes. To date, no complaints regarding cured fish products have been filed with the WTO by the U.S. Government against another country.

U.S. MARKET

Consumption

Information on U.S. consumption of cured fish is shown in table B-1.¹⁹ Total consumption of cured fish during 1996-00 grew by 60 percent in value, from \$132 million in 1996 to \$211 million in 2000. Imports accounted for about 68 percent of the total value of the overall cured fish market in 2000, down from 96 percent in 1996. On a per capita basis, U.S. consumption of cured fish is small relative to other meat and fish products. For at least 20 years, such per-capita consumption has been steady at 0.3 pounds per year.²⁰

Imports

Total U.S. imports of cured fish products reached a record value of \$142.9 million in 2000, an increase of \$16.9 million, or 13 percent, over the 1996 level of \$126.0 million (table B-13). By quantity, imports totaled 30,088 metric tons in 2000, down by 4 percent from the level of imports in 2000. The greatest single source of U.S. cured fish imports was Canada, whose shipments of 18,273 metric tons, valued at \$75.1 million, accounted for 61 percent of the volume and 53 percent of the value of total U.S. imports in 2000. On a value basis, Norway was the second largest source of imports, with 13 percent of total value. China was third, with 6 percent. Asian Pacific Rim countries (China, Japan, and the Philippines) together accounted for 12 percent of total value and 11 percent of total volume in 2000.

¹⁹ U.S. Commerce Department data on domestic production of cured fish are highly aggregated; in addition, the product categories are inconsistent with product groups defined in HTS subheadings, precluding estimation of consumption by product form. Data published in the annual report *Fisheries of the United States* (National Marine Fisheries Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce) are available only for “cured fish” as a whole; unpublished data supplied to Commission staff by the Economics and Statistics Division of the National Marine Fisheries Service are for three subgroups, Salted, Smoked, and Dried fish products and exclude Alaska production. An alternative source of data is the Food and Agriculture Organization of the United Nations; such data are more disaggregated and are consistent with the HTS but suffer from lags in reporting.

²⁰ National Marine Fisheries Service, *Fisheries of the United States* (statistical yearbook; various issues), National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

Table B-14 presents information on the principal cured fish products imported into the United States. By far the largest item is fish fillets, dried, salted or in brine. Such imports exceeded 11,000 metric tons, valued at nearly \$50 million, in 2000, or more than one-third of both the value and volume of total cured fish imports. This is a basket category that supplements the other categories for whole (or semiprocessed) fish. Important items in those categories include dried cod, which in 2000 accounted for 14 percent and 10 percent of the total value and volume of cured fish imports, and smoked salmon, a high-valued commodity that accounted for 14 percent of total import value but only 6 percent of total import volume.

FOREIGN MARKETS

Foreign Market Profile

Japan is a large consumer of cured fish and other seafood, and is by far the largest market for U.S. exports of cured fish products. Total consumption has declined in recent years, from about 900,000 metric tons in 1996 to 820,000 metric tons in 1999, or by 9 percent. The following tabulation presents FAO data on Japanese production, trade, and consumption of cured fish products (in metric tons):

Year	Production	Net imports	Apparent consumption
1996	876,383	24,056	900,439
1997	855,122	24,826	879,948
1998	821,813	19,982	841,795
1999	801,101	18,556	819,657

Prices in the Japanese cured fish market, evidenced by average annual import prices, generally decreased through 1998, before reversing sharply in 1999, as shown in the following tabulation of FAO data (in dollars per kilogram):

Product	1996	1997	1998	1999	Percent change
Smoked salmon	15.65	14.09	14.47	14.56	-7.0
Cured fish roes	18.88	12.42	10.96	13.69	-27.5
Cured jellyfish	4.76	3.67	3.29	3.87	-18.7
All cured products	17.54	12.09	10.83	13.03	-25.7

During 1996-99, cured fish prices in Japan declined by 26 percent on average, and as much as 28 percent (in the case of roes). Smaller declines were seen in the prices of smoked salmon and cured jellyfish, which declined by 7 percent and 19 percent, respectively.²¹ Additional data on cured fish production, trade and consumption in Asia are presented in table B-15.

Some cured fish products are very important elements in traditional Asian cuisine. An example in Japanese cuisine is katsuobushi, or dried bonito flakes (bonito is a member of the tuna family). Katsuobushi is a main ingredient in dashi, a soup stock that is widely consumed in Japan either alone or as part of a larger meal.

Demographic, economic and political changes are playing a role in shaping Asian demand for seafood, including cured fish products. In Hong Kong and southern China, for example, economic growth, greater availability of refrigeration, and better transportation have boosted consumer demand for high-valued seafood and increased the emphasis of price and quality in seafood marketing.²² To the extent that some cured fish products are “traditional” or ordinary foods, this phenomenon may reduce demand for cured fish. Higher demand for seafood boosts prices and enables some sellers to provide fish in fresh rather than the traditional cured forms. However, some cured fish products such as smoked salmon or roe cater to higher-income consumers and may enjoy increased demand.

A large and increasing share of the supply of fish to the cured fish sector in Asia comes from aquaculture, or fish farming. This enables fish sellers to provide a more dependable supply to fish curers and other consumers, and consequently, at a more stable price. This is an advantage not generally available to fish curers in the U.S. industry, where wild fisheries rather than aquaculture provide most fish.

Europe is another large cured-fish consuming region and the second largest market for U.S. exports. Total European consumption of cured fish reached 496,500 metric tons in 1999, of which 347,500 tons, or 70 percent, were imported (table B-16). France is one of the largest EU markets for cured fish; the following tabulation presents FAO data on French production, trade, and consumption of cured fish products (in metric tons):

Year	Production	Exports	Imports	Apparent consumption
1996	35,575	9,332	20,258	46,501
1997	34,548	6,182	22,932	51,298
1998	31,344	6,611	22,687	47,420
1999	31,588	5,401	20,358	46,545

²¹ According to one source, “[jellyfish] are considered a delicacy by many people. After they have been dried and de-salted, they are (according to some) not only delicious, but low in fat, calories, and salt and rich in nutrients. Others claim they taste like rubber bands.” Retrieved on Nov. 5, 1999, from the National Aquarium at Baltimore website, <http://www.aqua.org/animals/species/jellies/facts.html>.

²² Sameer Dhargalkar, “Seafood Market Hong Kong/Guangdong,” Consulate General of Canada, Hong Kong, Aug. 1996.

Smoked salmon accounts for 90 percent of total French production reported by the FAO.²³ Salted herring makes up most of the remainder. By volume, about one-sixth of France's cured fish production was exported in 1999, down from one-quarter in 1996. Such exports center largely on smoked salmon. In recent years both exports and imports have reacted to improved domestic demand following quality improvements in French seafood processing and marketing.²⁴

Prices in the European cured fish market, evidenced by average annual import prices, have generally declined in recent years, as shown in the following tabulation of FAO data (in dollars per kilogram):

Product	1996	1997	1998	1999	Percent change
Dried cod	6.57	6.10	6.72	6.99	6
Cured livers/roes . .	7.45	6.80	4.72	4.16	-44
Salted cod	4.72	3.59	3.94	4.40	-7
Smoked herring . . .	5.06	4.46	4.18	4.05	-20
Smoked salmon . . .	19.71	17.37	15.06	15.42	-22

Price declines have been as high as 44 percent in the case of cured livers and roes. Smoked salmon prices have also declined significantly. A small price increase (6 percent) was registered for dried cod. Additional data on cured fish production, trade and consumption in Europe are presented in table B-16.

U.S. Exports

About 40 percent of U.S. cured fish production, by value, has been exported in recent years. Tables B-17 and B-18 summarize U.S. exports by product form, and destination, respectively. U.S. exports declined sharply after 1996, largely because of conditions in the Japanese market for fish roe, which represents 95 percent of all U.S. cured fish exports to Japan, which in turn purchases two-thirds of all U.S. cured fish exports. According to industry sources, these market conditions weakened both on the demand side, where a general economic slowdown and a rise in the yen/dollar exchange rate likely reduced Japanese demand, and on the supply side, where a U.S. salmon harvest fell short of expectations. Markets strengthened briefly in 1999, as U.S. exports recovered to near their previous highs.

On a quantity basis, total exports of cured fish to Japan peaked in 1996 at 12.2 million metric tons, before falling sharply immediately thereafter. Since 1996, exports to Japan have fallen by 70 percent in volume and 50 percent in value. Table B-15 presents data on cured fish production, trade, and consumption for the entire Asian region, where the Japanese market is a dominant influence on U.S. exporters.

²³ See also "The French Smoked Salmon Market," IntraFish Market Report, found at www.intrafish.com, retrieved Oct. 8, 1999.

²⁴ "The French Smoked Salmon Market," pp. 1, 4.

The EU is the second largest destination for U.S. cured fish exports, which, except for a large jump in 1999, have averaged about 2,100 metric tons annually in recent years. On a value basis, exports to the EU totaled \$6.6 million in 1999. The single largest U.S. cured fish export to the EU is salted fish (primarily cod). Within the EU, Portugal is by far the largest market for U.S. exports, followed by Spain. The average unit value of U.S. salt cod exports to the EU market reached \$1.91 per kilogram in 2000, about the same as the annual average during the preceding 4 years.. Table B-16 contains more information on the European cured fish market.

U.S. Industry Performance in Foreign Markets

This section examines U.S. performance in major world markets for cured fish. Performance is defined here as the share held by U.S. producers or exporters in domestic or foreign markets. This approach is commonly referred to as constant market share (CMS) analysis. An increase in the U.S. share of a particular market is evidence of an improvement in U.S. performance vis-a-vis competing suppliers in that market, and vice versa.²⁵ Thus, even a decrease in the absolute level of U.S. exports to a particular declining market could be consistent with improved U.S. performance if the market itself is declining at a faster rate than U.S. exports.²⁶ As seen below, such is the case for some key product markets.

Table B-19 presents data on U.S. export performance in selected markets. In world markets for cured livers and roes (HTS subheading 0305.20), the largest U.S. cured fish export, U.S. exports have declined, but U.S. exporters have been able to capture a rising share of world imports in recent years: as a share of world import value, U.S. exports rose from 15.0 percent in 1996 to 18.1 percent in 1999 (table B-19). This resulted in an increase in U.S. performance equivalent to \$7.9 million, or 17.3 percent of the actual export level. The entire gain (plus some) was registered in Japan, where rising market shares equaled an increase in U.S. exports of \$9.1 million between 1996 and 1999.

In the world market for salted cod (HTS subheading 0305.62), the share held by U.S. exporters has traditionally been quite low, less than 2 percent of world imports. But in recent years that share has risen somewhat, from 1.4 percent in 1996 to 2.3 percent in 1999. Had U.S. exporters maintained only the 1.4-percent share they had in 1996, the value of 1999 exports would have been about \$5.7 million lower. Thus, exporters achieved a market-share gain of \$5.7 million, or almost 40 percent of the actual 1999 export level of \$14.6 million. The largest market for U.S. salted cod exports is the EU, where the U.S. share of the market grew from 0.3 percent in 1996 to 1.5 percent in 1999, a gain that generated \$7.7 million in improved export earnings in 1999.

²⁵ CMS analysis is described in detail in a paper, "Constant Market Share Analysis of Export Growth," presented in Edward E. Leamer and Robert M. Stern, *Quantitative International Economics* (Chicago: Allyn and Bacon, 1970), ch. 7.

²⁶ In the following discussion, data on "world import markets" vis-a-vis U.S. exports exclude U.S. imports from the world total.

APPENDIX A
EXPLANATION OF TARIFF AND TRADE
AGREEMENT TERMS

TARIFF AND TRADE AGREEMENT TERMS

In the *Harmonized Tariff Schedule of the United States* (HTS), chapters 1 through 97 cover all goods in trade and incorporate in the tariff nomenclature the internationally adopted Harmonized Commodity Description and Coding System through the 6-digit level of product description. Subordinate 8-digit product subdivisions, either enacted by Congress or proclaimed by the President, allow more narrowly applicable duty rates; 10-digit administrative statistical reporting numbers provide data of national interest. Chapters 98 and 99 contain special U.S. classifications and temporary rate provisions, respectively. The HTS replaced the *Tariff Schedules of the United States* (TSUS) effective January 1, 1989.

Duty rates in the *general* subcolumn of HTS column 1 are normal trade relations rates, many of which have been eliminated or are being reduced as concessions resulting from the Uruguay Round of Multilateral Trade Negotiations. Column 1-general duty rates apply to all countries except those listed in HTS general note 3(b) (Afghanistan, Cuba, Laos, North Korea, and Vietnam) plus Serbia and Montenegro, which are subject to the statutory rates set forth in *column 2*. Specified goods from designated general-rate countries may be eligible for reduced rates of duty or for duty-free entry under one or more preferential tariff programs. Such tariff treatment is set forth in the *special* subcolumn of HTS rate of duty column 1 or in the general notes. If eligibility for special tariff rates is not claimed or established, goods are dutiable at column 1-general rates. The HTS does not enumerate those countries as to which a total or partial embargo has been declared.

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 for 10 years and extended several times thereafter, applies to merchandise imported on or after January 1, 1976 and before the close of September 30, 2001. Indicated by the symbol "A", "A*", or "A+" in the special subcolumn, 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 4 to the HTS.

The *Caribbean Basin Economic Recovery Act* (CBERA) affords nonreciprocal tariff preferences to developing countries in the Caribbean Basin area to aid their economic development and to diversify and expand their production and exports. The CBERA, enacted in title II of Public Law 98-67, implemented by Presidential Proclamation 5133 of November 30, 1983, and amended by the Customs and Trade Act of 1990, applies to merchandise entered, or withdrawn from warehouse for consumption, on or after January 1, 1984. Indicated by the symbol "E" or "E*" in the special subcolumn, the CBERA provides duty-free entry to eligible articles, and reduced-duty treatment to certain other articles, which are the product of and imported directly from designated countries, as set forth in general note 7 to the HTS.

Free rates of duty in the special subcolumn followed by the symbol "IL" are applicable to products of Israel under the *United States-Israel Free Trade Area Implementation Act* of 1985 (IFTA), as provided in general note 8 to the HTS.

Preferential nonreciprocal duty-free or reduced-duty treatment in the special subcolumn followed by the symbol "J" or "J*" in parentheses is afforded to eligible articles the product of designated beneficiary countries under the *Andean Trade Preference Act* (ATPA), enacted as title II of Public Law 102-182 and implemented by Presidential Proclamation 6455 of July 2, 1992 (effective July 22, 1992), as set forth in general note 11 to the HTS.

Preferential free rates of duty in the special subcolumn followed by the symbol "CA" are applicable to eligible goods of Canada, and rates followed by the symbol "MX" are applicable to eligible goods of Mexico, under the *North American Free Trade Agreement*, as provided in general note 12 to the HTS and implemented effective January 1, 1994 by Presidential Proclamation 6641 of December 15, 1993. Goods must originate in the NAFTA region under rules set forth in general note 12(t) and meet other requirements of the note and applicable regulations.

Other special tariff treatment applies to particular *products of insular possessions* (general note 3(a)(iv)), *products of the West Bank and Gaza Strip* (general note 3(a)(v)), goods covered by the *Automotive Products Trade Act* (APTA) (general note 5) and the *Agreement on Trade in Civil Aircraft* (ATCA) (general note 6), *articles imported from freely associated states* (general note 10), *pharmaceutical products* (general note 13), and *intermediate chemicals for dyes* (general note 14).

The *General Agreement on Tariffs and Trade 1994* (GATT 1994), pursuant to the Agreement Establishing the World Trade Organization, is based upon the earlier GATT 1947 (61 Stat. (pt. 5) A58; 8 UST (pt. 2) 1786) as the primary multilateral system of disciplines and principles governing international trade. Signatories' obligations under both the 1994 and 1947 agreements focus upon most-favored-nation treatment, the maintenance of scheduled concession rates of duty, and national treatment for imported products; the GATT also provides the legal framework for customs valuation standards, "escape clause" (emergency) actions, antidumping and countervailing duties, dispute settlement, and other measures. The results of the Uruguay Round of 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. Pursuant to the **Agreement on Textiles and Clothing** (ATC) of the GATT 1994, member countries are phasing out restrictions on imports under the prior "Arrangement Regarding International Trade in Textiles" (known as the **Multifiber Arrangement** (MFA)). Under the MFA, which was a departure from GATT 1947 provisions, importing and exporting countries negotiated bilateral agreements limiting textile and apparel shipments, and importing countries could take unilateral action in the absence or violation of an agreement. Quantitative limits had been established on imported textiles and apparel of cotton, other vegetable fibers, wool, man-made fibers or silk blends in an effort to prevent or limit market disruption in the importing countries. The ATC establishes notification and safeguard procedures, along with other rules concerning the customs treatment of textile and apparel shipments, and calls for the eventual complete integration of this sector into the GATT 1994 over a ten-year period, or by Jan. 1, 2005.

APPENDIX B
STATISTICAL TABLES

Table B-1
Cured fish: U.S. production, trade, and apparent consumption, by product form, 1996-2000

Item	1996	1997	1998	1999	2000	Percent change, 1996-00
————— Value (1,000 dollars) —————						
Production:						
Salted products	28,778	31,071	27,630	(¹)	(¹)	² -4.0
Dried products	18,210	19,316	16,315	(¹)	(¹)	² -10.4
Smoked products	86,465	81,722	107,206	(¹)	(¹)	² 24.0
Total	133,453	132,109	151,151	151,802	121,008	-9.3
Exports:						
Salted products	10,538	6,834	13,276	16,961	5,690	-46.0
Dried products ³	93,683	47,144	39,415	53,181	46,017	-50.9
Smoked products	2,878	2,409	1,438	2,134	1,629	-43.4
Total	107,099	56,387	54,129	72,276	53,336	-50.2
Imports:						
Salted products	15,907	15,687	35,114	23,525	26,462	66.4
Dried products ³	91,885	89,758	76,156	93,138	87,497	-4.8
Smoked products	18,221	20,139	21,187	24,597	28,972	59.0
Total	126,013	125,584	132,457	141,260	142,929	13.4
Apparent consumption:						
Salted products	34,147	39,924	38,153	22,879	(¹)	11.7
Dried products ³	16,412	61,930	53,056	56,272	(¹)	223.3
Smoked products	101,808	99,452	126,955	129,669	(¹)	24.7
Total	131,692	212,040	210,585	220,135	210,601	59.9
————— Percent —————						
All products: Ratio of--						
Exports to production	95.0	39.5	40.9	47.8	44.1	N/A
Imports to consumption	95.7	59.2	62.9	64.2	67.9	N/A

¹ Not available.

² Calculated for 1996-98.

³ Includes roe and certain fish meat that is dried, smoked, salted, or in brine but not smoked.

Source: Official statistics of the Bureau of the Census and National Marine Fisheries Service, U.S. Department of Commerce.

Table B-2
U.S. ex-vessel prices of selected fish species, 1996-2000

Species	1996	1997	1998	1999	2000	Percent change, 1996-00
	(Dollars per kilogram)					
Alewife	0.45	0.37	0.49	0.49	0.59	31
Bluefish	0.75	0.67	0.73	0.80	0.76	1
Cod, Atlantic	1.87	1.88	2.29	2.46	2.32	24
Eel	6.15	13.59	8.63	3.36	1.71	-72
Haddock	2.62	2.39	2.78	2.90	2.89	10
Halibut	3.75	3.70	3.13	3.42	4.22	13
Herring:						
Atlantic	0.13	0.12	0.13	0.14	0.14	8
Pacific	1.28	0.47	0.26	0.36	0.35	-73
Mackerel, Atlantic	0.29	0.62	0.38	0.30	0.36	24
Salmon:						
Chinook	2.53	2.80	2.58	3.68	3.59	42
Chum	0.36	0.58	0.38	0.39	0.53	47
Pink	0.19	0.26	0.30	0.30	0.29	53
Red	1.84	2.03	2.58	2.10	1.69	-8
Coho	1.05	1.53	1.19	1.72	1.18	12

Source: Calculated by Commission staff from value and quantity data on domestic landings in National Marine Fisheries Service, *Fisheries of the United States*, Current Fisheries Statistics Series No. 9800 (annual; various issues), National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

Table B-3
Cured fish: Number of U.S. firms and employment, 1996-98

Item	1996	1997	1998 ¹
	(Number)		
Salted fish:			
Companies	30	35	27
Employment:			
Average	841	985	815
Seasonal	842	985	816
Dried fish:			
Companies	31	28	26
Employment:			
Average	730	378	501
Seasonal	739	423	509
Smoked fish:			
Companies	69	74	57
Employment:			
Average	2,109	1,918	1,617
Seasonal	2,332	1,918	1,617

¹ Preliminary.

Source: Fisheries Statistics and Economics Division, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, Commission staff communication.

Table B-4
Cured fish: Labor productivity in salted, dried, and smoked fish production, 1996-98

Category	1996	1997	1998 ¹
	— Pounds produced per employee —		
On an average employment basis:			
Salted fish	8,396	7,353	19,711
Dried fish	2,901	6,390	4,724
Smoked fish	5,849	7,782	9,143
On a seasonal employment basis:			
Salted fish	8,386	7,353	19,687
Dried fish	2,865	5,710	4,650
Smoked fish	5,289	7,782	9,143

¹ Preliminary.

Source: Fisheries Statistics and Economics Division, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, Commission staff communication.

Table B-5
Seafood establishments and product inspections, 1998 and 2000¹

	1998	2000
	— Number —	
Establishments:		
SIFE ²	8	1
In-plant ³	289	257
	— Million pounds —	
Quantity inspected:		
PUFI ⁴	301.1	248.7
Grade A ⁴	70.3	59.8
No mark ⁵	189.6	117.4
Lot ⁶	319.6	399.0
Total	880.7	824.9

¹ All seafood, including cured fish.

² Fish processing establishments approved for sanitation; products are not processed under inspection.

³ Sanitarily inspected establishments approved for sanitation processing products under Commerce Department inspection.

⁴ Products processed under Commerce Department inspection in inspected establishments and labeled with USDC inspection mark as "Processed Under Federal Inspection" (PUFI) and/or "U.S. Grade A."

⁵ Products processed under inspection in inspected establishments but bearing no USDC inspection mark.

⁶ Lot inspected products checked for quality and condition at the time of examination and located in processing plants, warehouses, cold storage facilities, or terminal markets anywhere in the United States.

Source: National Marine Fisheries Service, *Fisheries of the United States, 1998*, Current Fisheries Statistics Series No. 9800, National Oceanic and Atmospheric Administration, U.S. Department of Commerce (July 1999), p. 98.

Table B-6
Cured fish: World production, by major producers, 1996-99

Item	1996	1997	1998	1999	Percent change, 1996-99
	————— (1,000 metric tons) —————				
China	589,536	678,654	810,084	885,981	50.3
Japan	876,383	855,122	821,813	801,101	-8.6
Indonesia	779,996	752,556	745,089	788,661	1.1
India	310,307	308,456	290,836	300,249	-3.2
Norway	186,570	168,026	174,520	145,959	-21.8
Thailand	103,543	101,911	107,254	106,456	2.8
Philippines	241,730	42,380	42,570	42,900	-82.3
France	35,575	34,548	31,344	31,588	-11.2
Other EU	223,256	228,652	201,906	203,109	-9.0
Russian Federation	79,400	63,196	34,061	31,420	-60.4
United States	22,977	17,558	17,546	20,648	-10.1
Other	988,331	1,006,585	1,093,151	1,055,779	6.8
Total	4,437,604	4,257,644	4,370,174	4,413,851	-0.5

Source: Official statistics of the Food and Agriculture Organization of the United Nations.

Table B-7
Cured fish: World production by product, 1996-99

Description	1996	1997	1998	1999	Percent change, 1996-99
Smoked:					
Salmon	77,674	80,673	76,179	80,417	3.5
Herrings	45,787	43,078	40,801	39,160	-14.5
Other fish	511,408	540,617	487,909	576,592	12.8
Salted or in brine:					
Cod	113,026	99,333	101,155	89,351	-21.0
Anchovies	72,368	72,979	71,843	51,733	-28.5
Herrings	95,228	86,812	64,533	64,726	-32.0
Other fish	503,140	479,284	443,918	449,477	-10.7
Dried, whether or not salted but not smoked:					
Cod	56,929	47,774	47,279	35,375	-37.9
Fish fillets	30,662	40,894	37,569	37,622	22.7
Other fish	2,846,408	2,680,334	2,912,426	2,909,396	2.2
All other	84,974	85,866	86,562	80,002	-5.9
Total	4,437,604	4,257,644	4,370,174	4,413,851	-0.5

Source: Food and Agriculture Organization of the United Nations.

Table B-8
Cured fish: Average export prices on world markets, 1996-99

Fish product	1996	1997	1998	1999	Percent change, 1996-99
Alaska pollock, dried	4.60	4.01	3.69	5.79	25.7
Atlantic halibut, smoked	16.13	13.97	12.15	15.95	-1.1
Atlantic herring, salted	1.34	1.35	1.48	1.56	15.7
Atlantic herring, smoked	3.02	2.83	2.94	2.72	-10.1
Cod, dried (stockfish)	11.88	10.55	12.19	16.40	38.0
Cod, salted & dried (klipfish)	5.45	5.00	6.02	6.65	22.1
Eels, smoked	19.21	16.80	16.12	17.27	-10.1
Fish roes, dried/salted/in brine	5.81	3.89	2.83	5.48	-5.6
Mackerel, salted/in brine	2.88	3.08	2.72	3.46	20.2
Salmon roes, cured	8.92	8.65	8.21	9.37	5.1
Salmon, smoked	12.91	11.24	11.05	10.79	-16.4
Shark fins, dried, unsalted	21.70	22.84	21.58	18.79	-13.4
Trouts and chars, smoked	11.71	9.86	9.45	8.43	-28.0
Average for all cured products	4.17	3.83	4.12	4.20	0.61

Source: Food and Agriculture Organization of the United Nations.

Table B-9
Salted fish: World production, 1996-99

Description	1996	1997	1998	1999	Percent change, 1996-99
	<i>(Thousand dollars¹)</i>				
Cod	410,392	349,654	443,119	435,336	6.1
Anchovies	172,100	159,637	169,602	105,388	-38.8
Herring	128,041	117,414	95,365	100,672	-21.4
Other	1,390,629	865,830	914,748	1,063,492	-23.5
Total	2,101,162	1,492,535	1,622,834	1,704,888	-18.9
	<i>(Metric tons)</i>				
Cod	113,026	99,333	101,155	89,351	-21.0
Anchovies	72,368	72,979	71,843	51,733	-28.5
Herring	95,228	86,812	64,533	64,726	-32.0
Other	503,140	479,284	443,918	449,477	-10.7
Total	783,762	738,408	681,449	655,287	-16.4

¹ Estimated using world average export unit values.

Source: Food and Agriculture Organization of the United Nations.

Table B-10
Smoked fish: World production, 1996-99

Description	1996	1997	1998	1999	Percent change, 1996-99
	<i>(Thousand dollars¹)</i>				
Salmon	1,002,975	906,653	841,420	867,670	-13.5
Herring	69,283	68,572	59,096	66,424	-4.1
Other	2,427,857	2,623,950	2,908,264	3,009,847	24.0
Total	3,500,115	3,599,175	3,808,780	3,943,941	12.7
	<i>(Metric tons)</i>				
Salmon	77,674	80,673	76,179	80,417	3.5
Herring	45,787	43,078	40,801	39,160	-14.5
Other	511,408	540,617	487,909	576,592	12.8
Total	634,869	664,368	604,889	696,169	9.7

¹ Estimated using world average export unit values.

Source: Food and Agriculture Organization of the United Nations.

Table B-11

Cured fish products: Harmonized Tariff Schedule subheading description; U.S. column 1 rate of duty as of Jan. 1, 2001; U.S. exports, 2000; and U.S. imports, 2000

HTS subheading	Description	Column 1	U.S.	U.S.
		rate of duty as of Jan. 1, 2001 General	exports 2000	imports 2000
		<i>Percent</i>	<i>—1,000 dollars—</i>	
0305	Fish, dried, salted or in brine; smoked fish, whether or not cooked before or during the smoking process:			
0305.20	Livers and roes, dried, smoked, salted or in brine:			
0305.20.20	Sturgeon roe	7.5	(¹)	302
0305.20.40	Other	Free	37,287	2,340
0305.30	Fish fillets, dried, salted or in brine, but not smoked:			
0305.30.20	Herrings, in immediate containers weighing with their contents 6.8 kg or less each	4	(²)	9
0305.30.40	Mackerel, in immediate containers weighing with their contents 6.8 kg or less each	5	(²)	664
0305.30.60	Other	Free	2,085	47,697
	Smoked fish, including fillets:			
0305.41.00	Pacific salmon, Atlantic salmon, and Danube salmon . . .	5	1,276	20,718
0305.42.00	Herrings	Free	58	1,900
0305.49	Other:			
0305.49.20	Mackerel	Free	(³)	478
0305.49.40	Other	Free	295	5,876
	Dried fish, whether or not salted but not smoked:			
0305.51.00	Cod	Free	433	20,524
0305.59	Other:			
0305.59.20	Shark fins	Free	3,513	2,356
0305.59.40	Other	Free	2,699	13,604
	Fish, salted but not dried or smoked and fish in brine:			
0305.61	Herrings:			
0305.61.20	In immediate containers weighing with their contents 6.8 kg or less	4	(⁴)	4
0305.61.40	Other	Free	213	3,162
0305.62.00	Cod	Free	5,310	9,123
0305.63	Anchovies:			
	In immediate containers weighing with their contents 6.8 kg or less each			
0305.63.20	In airtight containers	5	(⁵)	64
0305.63.40	Other	Free	(⁵)	473
0305.63.60	Other	Free	167	896
0305.69	Other:			
0305.69.10	Cusk, haddock, hake and pollock	Free	(⁶)	9,608
	Mackerel:			
0305.69.20	In immediate containers weighing with their contents 6.8 kg or less each	5	(⁶)	166
0305.69.30	Other	Free	(⁶)	992
0305.69.40	Salmon	3	(⁶)	119
	Other:			
0305.69.50	In immediate containers weighing with their contents 6.8 kg or less each	Free	(⁶)	725
0305.69.60	Other	0.5	1,611	1,129

See footnotes at end of table.

Table B-11—Continued

Cured fish products: Harmonized Tariff Schedule subheading description; U.S. column 1 rate of duty as of Jan. 1, 2001; U.S. exports, 2000; and U.S. imports, 2000

¹ Included in 0305.20.40.

² Included in 0305.30.60.

³ Included in 0305.49.40.

⁴ Included in 0305.61.40.

⁵ Included in 0305.63.60.

⁶ Included in 0305.69.60.

Source: Harmonized Tariff Schedule of the United States; official statistics of the U.S. Department of Commerce.

Table B-12
Cured fish products: Applied MFN tariff rates in selected foreign countries¹

HTS heading	Heading and description	European	Canada	Japan
		Union	Percent (<i>ad valorem or ad valorem equivalent</i>)	
	Salted or in brine, but not smoked:			
0305.20	Livers and roes	11	4	4-12
0305.30	Fish fillets	15-20	0	12-15
	Smoked:			
0305.41	Salmons	13	0	15
0305.42	Herrings	10	0	15
0305.49	Other fish	14 to 16	0	15
	Dried, whether or not salted but not smoked:			
0305.51	Cod	13	0	15
0305.59	Other fish	10 to 15	0	12
	Salted or in brine:			
0305.61	Herrings	12	0	15
0305.62	Cod	13	0	15
0305.63	Anchovies	5 to 10	0	15
0305.69	Other fish	11 to 15	0	12-15

¹ Most Favored Nation rate, applicable to imports from the United States. The MFN policy in the United States is now known as Normal Trading Relations (NTR) status; other nations retain the MFN terminology. The duty reported for Canada is applicable to MFN countries other than the United States and Mexico, imports from which are duty free under the North American Free Trade Agreement.

Source: *The International Customs Journal*, International Customs Tariffs Bureau.

Table B-13
Cured fish: U.S. imports, by principal source, 1996-2000

Source	1996	1997	1998	1999	2000	Percent change, 1996-00
<i>Thousand dollars</i>						
Canada	77,523	74,134	82,480	80,854	75,057	-3.2
Norway	7,943	8,558	9,041	15,429	18,500	132.9
China	1,473	1,896	2,407	8,246	8,544	480.0
Iceland	8,920	9,851	7,687	10,810	8,268	-7.3
Japan	7,590	7,023	4,818	5,068	5,498	-27.6
European Union:						
United Kingdom	3,464	3,144	2,604	3,171	3,288	-5.1
Denmark	324	1,567	530	250	438	35.2
Spain	787	871	688	419	400	-49.2
Other	1,479	1,489	1,429	725	1,202	-18.7
Subtotal EU	6,054	7,071	5,251	4,565	5,318	-12.2
Philippines	1,331	710	5,343	2,051	3,164	137.7
Other	15,179	16,341	15,430	14,237	18,580	22.4
Total	126,013	125,584	132,457	141,260	142,929	13.4
<i>Metric tons</i>						
Canada	21,653	21,324	21,707	18,511	18,273	-15.6
Norway	734	779	960	1,619	2,058	180.4
China	292	458	689	1,975	2,116	624.7
Iceland	1,702	2,193	1,653	2,160	2,096	23.1
Japan	886	757	576	539	579	-34.7
European Union:						
United Kingdom	256	253	202	242	212	-17.2
Denmark	33	211	54	26	68	106.1
Spain	193	243	198	98	102	-47.2
Other	239	185	164	103	221	-7.5
Subtotal EU	721	892	618	469	603	-16.4
Philippines	348	279	822	477	717	106.0
Other	2,625	2,567	3,064	2,790	3,646	38.9
Total	28,961	29,249	30,089	28,540	30,088	3.9

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

Table B-14
Cured fish: U.S. imports, by product, 1996-2000

Product	1996	1997	1998	1999	2000	Percent change, 1996-00
<i>1,000 dollars</i>						
Fillets, dried, salted or in brine but not smoked	46,263	44,706	48,850	53,380	48,371	4.6
Salmon, smoked	12,159	13,729	11,184	17,175	20,718	70.4
Cod, dried whether or not salted but not smoked	23,663	24,639	22,970	22,121	20,524	-13.3
Fish, n.e.i., dried, whether or not salted but not smoked	20,577	18,629	16,680	15,139	15,959	-22.4
Fish, n.e.i., salted or in brine	9,130	7,956	12,715	10,873	12,740	39.5
Cod, salted or in brine	2,520	3,193	4,143	7,556	9,123	262.0
Fish, n.e.i., smoked	4,052	3,980	7,831	5,116	6,354	56.8
Herrings, salted or in brine	2,229	2,591	3,272	3,239	3,167	42.1
Livers and roes, dried, salted, smoked or in brine	1,380	1,778	647	2,492	2,643	91.5
Herrings, smoked	2,010	2,430	2,172	2,306	1,900	-5.5
Anchovies, salted or in brine	2,031	1,953	1,992	1,862	1,432	-29.5
Total	126,013	125,584	132,457	141,260	142,929	13.4
<i>Metric tons</i>						
Fillets, dried, salted or in brine but not smoked	12,357	11,783	11,073	10,546	11,026	-10.8
Salmon, smoked	833	1,105	947	1,525	1,805	116.7
Cod, dried whether or not salted but not smoked	4,274	4,527	3,973	3,188	3,009	-29.6
Fish, n.e.i., dried, whether or not salted but not smoked	3,278	3,014	2,653	2,615	2,757	-15.9
Fish, n.e.i., salted or in brine	2,932	2,549	3,842	2,954	3,940	34.4
Cod, salted or in brine	506	673	777	1,222	1,482	192.9
Fish, n.e.i., smoked	638	600	1,071	752	1,008	58.0
Herrings, salted or in brine	2,397	2,971	3,953	3,779	3,357	40.1
Livers and roes, dried, salted, smoked or in brine	118	186	76	311	324	74.6
Herrings, smoked	858	1,120	916	884	758	-11.7
Anchovies, salted or in brine	771	719	810	764	621	-19.5
Total	28,961	29,249	30,089	28,540	30,088	3.9

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

Table B-15
Cured fish: Asian production, trade, and consumption, 1996-99

Year	Production	Exports	Imports	Apparent consumption ¹	Exports/	Imports/
					production	consumption
	<i>1,000 metric tons</i>				<i>Percent</i>	
1996	3,220.5	111.1	137.1	3,246.5	3.5	4.2
1997	3,040.9	120.4	139.5	3,060.0	4.0	4.6
1998	3,194.0	113.8	136.7	3,216.8	3.6	4.2
1999	3,274.8	121.2	135.9	3,289.5	3.7	4.1
Percent change, 1996-99	1.7	9.0	-0.9	1.3	-	-

¹ Apparent consumption = production - exports + imports.

Source: Food and Agriculture Organization of the United Nations.

Table B-16
Cured fish: European production, trade, and consumption, 1996-99

Year	Production	Exports	Imports	Apparent consumption ¹	Exports/	Imports/
					production	consumption
	<i>1,000 metric tons</i>				<i>Percent</i>	
1996	684.8	436.8	389.4	637.4	63.8	61.1
1997	674.7	432.6	378.5	620.7	64.1	61.0
1998	590.9	430.8	359.9	520.0	72.9	69.2
1999	556.2	407.3	347.5	496.5	73.2	70.0
Percent change, 1996-99	-18.8	-6.8	-10.7	-22.1	-	-

¹ Apparent consumption = production - exports + imports.

Source: Food and Agriculture Organization of the United Nations.

Table B-17
Cured fish: U.S. exports, by product, 1996-2000

Product	1996	1997	1998	1999	2000	Percent change, 1996-00
<i>1,000 dollars</i>						
Livers and roes, dried, salted, smoked or in brine	66,450	36,379	31,501	45,740	37,287	-43.9
Fish, n.e.i., dried, whether or not salted but not smoked	14,468	8,771	5,330	3,344	6,212	-57.1
Cod, salted or in brine	7,774	5,047	9,393	14,567	5,310	-31.7
Fillets, dried, salted or in brine but not smoked	8,030	1,030	1,883	3,385	2,085	-74.0
Fish, n.e.i., salted or in brine	1,847	1,275	3,857	2,050	1,611	-12.8
Salmon, smoked	1,477	1,773	1,076	1,328	1,276	-13.6
Cod, dried whether or not salted but not smoked	4,744	964	731	712	433	-90.9
Fish, n.e.i., smoked	1,159	625	334	769	295	-74.5
Herrings, salted or in brine	688	13	20	256	213	-69.0
Anchovies, salted or in brine	230	492	6	88	167	-27.4
Herrings, smoked	242	11	28	37	58	-76.0
Total	107,099	56,387	54,129	72,276	54,948	-48.7
<i>Metric tons</i>						
Livers and roes, dried, salted, smoked or in brine	11,162	4,763	5,299	8,628	4,289	-61.6
Fish, n.e.i., dried, whether or not salted but not smoked	1,932	949	749	518	826	-57.2
Cod, salted or in brine	2,944	1,980	3,543	9,207	2,618	-11.1
Fillets, dried, salted or in brine but not smoked	1,713	359	329	778	387	-77.4
Fish, n.e.i., salted or in brine	548	501	1,784	683	437	-20.3
Salmon, smoked	96	160	87	82	81	-15.6
Cod, dried whether or not salted but not smoked	2,266	415	323	309	185	-91.8
Fish, n.e.i., smoked	277	135	65	173	60	-78.3
Herrings, salted or in brine	276	7	11	42	108	-60.9
Anchovies, salted or in brine	158	148	1	25	38	-75.9
Herrings, smoked	95	5	17	13	8	-91.6
Total	21,466	9,422	12,209	20,456	9,037	-57.9

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

Table B-19
Cured fish: U.S. export performance for selected products, 1996-99

Item	Market	U.S. exports		U.S. share (percent) of foreign import market ¹		U.S. export gain (loss) from rise (fall) in market share ¹	
		1996	1999	1996	1999	Value	As a share of 1999 exports
		1,000 dollars		--Percent--		1,000 dollars	--Percent--
0305.20; Livers and roes, dried, smoked, salted, or in brine	World . . .	66,450	45,740	15.0	18.1	7,891	17.3
	Japan . . .	58,124	41,683	14.3	18.2	9,052	21.7
	EU	1,386	931	5.2	5.2	2	0.3
0305.30; Fillets, dried, salted or in brine	World . . .	8,030	3,385	4.1	1.4	-6,243	-184.4
	Canada . .	25	959	0.5	15.7	928	96.8
0305.41; Smoked Pacific, Atlantic, or Danube salmon	World . . .	1,477	1,328	0.5	0.4	-152	-11.4
	Canada . .	255	300	10.7	8.9	-61	-20.4
	Japan . . .	265	192	2.2	2.5	23	12.1
0305.49; Other fish, smoked	World . . .	1,159	769	1.2	0.6	-671	-87.2
	Canada . .	147	43	17.1	7.4	-56	-130.4
0305.59; Other fish, dried, whether or not salted but not smoked	World . . .	14,468	3,344	2.1	0.5	-9,927	-296.9
	Canada . .	542	559	4.7	5.4	70	12.5
	Japan . . .	270	116	3.6	2.8	-34	-29.1
0305.62; Cod, salted or in brine	World . . .	7,774	14,567	1.4	2.3	5,748	39.5
	EU	1,407	9,318	0.3	1.5	7,721	82.9
0305.63; Anchovies, salted or in brine	World . . .	230	88	0.6	0.2	-124	-140.4
	Canada . .	100	43	17.6	18.5	2	5.0

¹ Calculated from unrounded data. "World" imports exclude U.S. imports.

² Less than 0.5 percent.

Source: Derived by Commission staff from official statistics of the U.S. Department of Commerce and the Food and Agriculture Organization of the United Nations.