

〈 조 사 보 고 〉

A Large and Changing U.S. Market for Gadoids and Other Groundfish

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Abstract

The United States is the world's leading importer of frozen processed groundfish products, with over two thirds of total world imports. Over 90% of the U.S. groundfish demand is met by imports, while about 2 million mt of groundfish are taken from U.S. waters by joint-venture and foreign fleets. The objective of this paper is to provide descriptive information concerning the U.S. groundfish market and the potential for groundfish resources off Alaska to become a major source of supply to this market. The size of the U.S. market, U.S. imports, trade policies, and catch from U.S. waters are discussed, and a comparison is made between the potential domestic catch of groundfish off Alaska and current U.S. groundfish consumption. The total optimum yield of 2.3 million mt for flounders, cod, and pollock is about four times the round weight equivalent of U.S. imports of these species in 1984.

Introduction

Annual world groundfish catches averaged 12 million mt from 1972 through 1982 and ranged from a low of 11.2 million mt in 1978 to a high of 13.6 million mt in 1975. Gadoids accounted for 88 percent of these catches for the period as a whole with annual gadoid catches ranging from a low of 10 million mt in 1978 to a high of 12 million mt in 1973. The gadoid catch is made up of Alaska pollock, 36%; followed by Atlantic cod, 17% hake, 8%; blue whiting, 6%; Atlantic pollock (saithe), 4%; and haddock, 3% in 1982 (Table 1).

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Table 1. World groundfish catch by species, 1973, 1975, 1977-1982.

Species	(Thousand metric tons, round weight)							
	1973	1975	1977	1978	1979	1980	1981	1982
Alaska pollock	4,617	5,024	4,296	3,925	3,944	4,015	4,167	4,475
Atlantic cod	2,541	2,430	2,272	2,172	2,042	2,209	2,319	2,264
Hake	2,231	1,671	1,551	1,697	1,462	1,176	1,139	1,041
Blue whiting	502	673	253	557	1122	1132	892	712
Saithe/pollock	663	703	545	453	443	433	480	511
Haddock	625	529	404	342	344	376	417	423
Pacific cod	150	167	117	120	129	144	196	239
Whiting	208	222	200	255	246	203	199	188
Other gadoids	433	463	959	826	877	1058	792	1116
Gadoid total	11,970	11,882	10,597	10,302	10,609	10,746	10,601	10,969
Other groundfish	1,619	1,750	1,533	1,446	1,418	1,286	1,331	1,356
Grand Total	13,589	13,632	12,130	11,748	12,027	12,032	11,932	12,325
Percent gadoids	(88)	(87)	(87)	(88)	(88)	(89)	(89)	(89)

Source: FAO Yearbook of Fishery Statistics.

Table 2. World groundfish catch by country, 1972, 1974, 1976, 1978, 1980-1982.

Country	(Thousand metric tons, round weight)						
	1972	1974	1976	1978	1980	1981	1982
USSR	2,590	3,078	2,857	2,809	3,546	3,496	2,828
Japan	3,577	3,432	2,965	1,981	1,977	2,022	1,947
Canada	521	418	471	612	740	816	849
Norway	791	694	694	670	625	702	691
Iceland	386	423	476	514	663	704	681
U. S. A.	165	154	178	305	373	454	599
United Kingdom	732	677	545	455	339	364	439
S. Korea	257	388	533	297	286	279	262
Denmark	258	274	335	251	258	261	234
Sub-total	9,277	9,538	9,054	7,894	8,757	9,098	8,530
Other countries	3,937	4,327	4,211	3,854	3,275	2,834	3,795
Grand Total	13,214	13,865	13,265	11,748	12,032	11,932	12,325
9 Country percent of total	(70)	(69)	(68)	(61)	(73)	(76)	(69)

Source: FAO Yearbook of Fishery Statistics.

In 1982, about 70% of the world groundfish catch was taken by 9 nations. The percentage taken by each are as follow: the U.S.S.R. 23%; Japan, 16%; Canada, 7%; Norway, 6%; Iceland, 6%; U.S.A., 5%; U.K., 4%; the Republic of Korea, 2%; and Denmark, 2% (Table 2).

Historically, groundfish have been sold in international markets in three major product forms; they are fresh, frozen, and salted/dried. Much of the fresh products is from fishing vessels delivering directly to foreign ports or foreign vessels. A small number of western European and North American countries account for most of the trade of frozen products. The salted/dried products are primarily sold in Southern Europe, Africa, and South America. Recently, simulated products made from surimi, an intermediary product primarily

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Table 3. World trade of frozen groundfish products for major countries, 1980-1983.

	(Thousand metric tons, product weight)			
	1980	1981	1982	1983
Exporters				
Canada	126.4	136.4	145.5	139.8
Iceland	114.0	103.8	99.9	113.6
Denmark	52.6	64.1	73.1	82.6
Norway	65.8	72.0	78.2	61.4
S. Korea	19.2	18.6	18.7	30.0
Japan	3.8	3.9	5.0	7.0
Total	381.8	398.8	420.4	434.4
Importers				
France	45.8	51.1	53.4	51.1
U. K.	80.0	83.0	86.0	82.0
U. S. A.	253.2	273.3	279.0	310.3
Total	379.0	407.4	418.4	443.4

Source: Review of Fisheries in OECD Member Countries, 1983. Fisheries of the United States, 1981-1983.

made from minced Alaska pollock, has gained wide acceptance in West Europe and North America.

Atlantic cod, Atlantic pollock (saithe), and haddock are the dominant species in the world trade of frozen groundfish products. The total world catch of these species was 3.2 million mt in 1982. It has been estimated that approximately one-half of the world catch enters international markets as frozen products. Canada, Iceland, Norway, and Denmark are the major harvestors and exporters of these groundfish species. In 1983, Canada was the world's leading exporter of frozen groundfish products with about 32% of total world exports, followed by Iceland, 26%; Denmark, 19%; Norway, 14%; the Republic of Korea, 7% and Japan, 2%. The United States was the world's leading importer of frozen groundfish products with about 70% of total world imports, followed by the United Kingdom, 18%; and France, 12% in 1983. U. K. and French imports of frozen groundfish products have been relatively stable since 1980, while those of the United States have increased steadily (Table 3).

Currently, about 90% of the U.S. demand for groundfish products is met by imports. However, there is a potential for domestic fisheries off Alaska to become a major source of groundfish in U.S. markets. The objective of this paper is to: 1) provide descriptive information concerning the U.S. market for gadoids and other groundfish; and 2) partially explore the aforementioned potential. The descriptive information includes consumption, international trade, domestic catch, joint-venture catch, foreign catch, and price statistics; it also includes a discussion of trade policies.

U.S. Market

Trends in Market Size

From 1967 to 1984, U.S. annual consumption of fillets and steaks, which consist primarily of groundfish products, increased steadily from 163,000 mt to 350,000 mt as annual per capita consumption of fillets and steaks increased from 1.68 pounds to 3.18 pounds (Fig. 1).

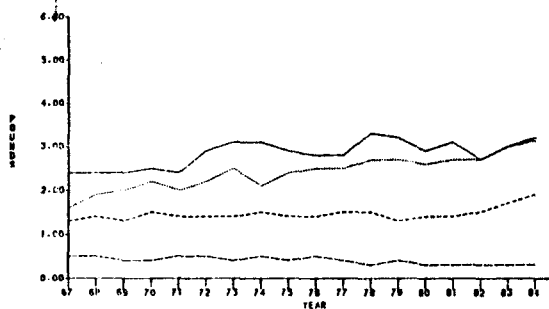


Fig. 1. U.S. Annual per capita consumption, 1967-1984

— Canned tuna --- Shrimp
 Fillets & Steaks - - - Cured Fish

During the same period, total per capita consumption of fish and shellfish increased from 10.6 pounds to 13.6 pounds. The increased consumption of fillets and steaks account for over half of the total increase and consumption of these products increased much more rapidly than that of total seafood products.

From the supply side, these increases in the U.S. market for groundfish products were the result of large scale production, distribution, and marketing of frozen food products that have made groundfish products available to a large number of people throughout the United States. From the demand side, the increases were the results of rising per capita income and increased consumption of food away from home.

It is difficult to predict whether this upward trend in per capita consumption of steaks and fillets will continue. Two factors which suggest further increases are possible are: 1) per capita consumption of seafood in the United States is low when compared with many developed countries; and 2) recent studies indicate that there are health benefits associated with the consumption of seafood products. With respect to the latter it has been shown that increased seafood consumption reduces the cholesterol in the blood and helps prevent coronary diseases. It may also build up resistance against colds and other common ailments and give good results in the treatment of arthritis. However, it is possible that the structural changes in the economy that have produced the increased consumption of seafood will not continue and that per capita consumption will soon stabilize.

The recent introduction of simulated crab or "kanibo" to the U.S. market has made an auspicious beginning. This product is made from "surimi" or minced Alaska pollock that is combined with other ingredients. The development of simulated crab in the United States occurred at a time when there were sharp reductions in the king and snow crab fisheries. Despite the growing demand for surimi, much of U.S. products depends on Japanese raw

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material. Japanese exports to the United States (estimated to be around 90% simulated crab) have jumped from 2,228 mt in 1981 to 26,756 mt in 1984.

U.S. Imports

U.S. demand for groundfish products is met largely by imports as U.S. domestic production accounts for about 10 percent of total supply. U.S. demand for groundfish products is concentrated in two groups of products--frozen blocks, and fresh and frozen fillets. Imports accounted for 99% of the 150,000 mt of blocks supplied to U.S. markets in 1984 (Fig. 2), and of the 175,000 mt of groundfish fillets supplied to U.S. markets, 80% were imported (Fig. 3). Imports of blocks peaked at 185,000 mt in 1979 and declined to 150,000

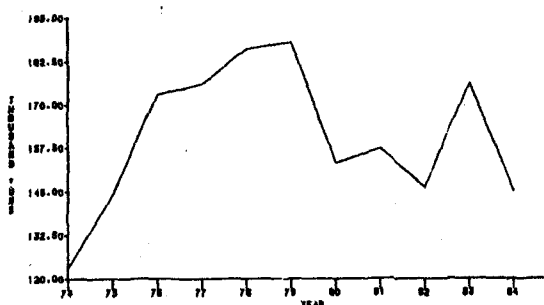


Fig. 2. Supply of groundfish blocks to U.S. market

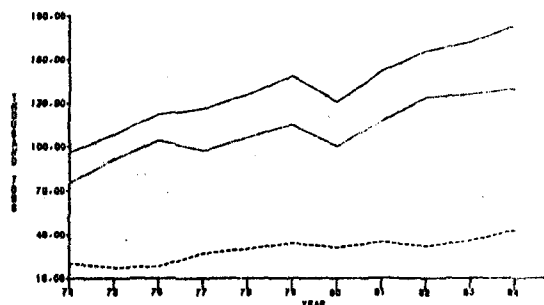


Fig. 3. Supply of groundfish fillets to U.S. market
 — Total
 --- U.S. production
 Imports

Table 4. U.S. groundfish imports by country, 1980-1984.

Country	1980	1981	1982	1983	1984
Weight (Thousand metric tons, product weight)					
Canada	107	134	137	146	155
Iceland	69	54	50	69	65
Denmark	13	17	24	38	40
Norway	15	18	17	17	14
S. Korea	19	19	19	26	26
Japan	17	15	14	10	7
Other	45	54	49	31	18
Total	285	311	310	337	325
Value (Million dollars)					
Canada	233	308	312	373	374
Iceland	166	142	138	175	155
Denmark	33	42	59	101	94
Norway	38	40	39	35	30
S. Korea	26	30	28	39	40
Japan	31	30	33	23	15
Other	110	137	135	56	45
Total	637	729	744	802	753

Included: Whole groundfish, fillets, and blocks.

Source: NMFS trade statistic data base.

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mt in 1984, while those of fillets have increased steadily from 75,000 mt in 1975 to 175,000 mt in 1984, up 125% over the last decade.

Canada is the leading supplier for groundfish products with 48% of the supply, followed by Iceland (19%), Denmark (12%), Korea(7%), and Norway(4%) in 1984 (Table 4). Among block imports, cod blocks were the leading imports with 47%, then, pollock (19%), haddock(9%), and other (25%). The species composition of fillet imports were cod 61%, haddock 21%, and flatfish 17% in 1984.

Trade Policies

Imported blocks are not subject to any tariff or quotas. However, imports of fresh/frozen fillets and steaks are currently subject to duties and a quota. Quantities within the quota, which were 56,000,000 pounds in 1984, are subject to a rate of 1.875 cents per pound. Over the quota, the rate increases to 2.04 cent per pound.

In 1987, the tariff on imports over the quota will be terminated and all groundfish imports of fillets and steaks will be assessed at 1.875 cents per pound. The U.S. tariffs and quotas do not appear to have significantly affected either the levels or prices of imports.

The United States is protected against unfair practices such as dumping and subsidization by the government of the country of origin. A.U.S. industry or company can petition the International Trade Commission for a ruling concerning unfair trade practices. If such practices are found to exist and to be detrimental to the domestic industry, the President can assess duties against the foreign country. Over the last decade, several complaints have been filed; however, no duty has been assessed by the President.

Prices

Companies in the principal groundfish exporting countries have market networks in the United States and sell directly to large restaurant and supermarket chains. Differences in

Table 5. Frozen cod fillets: Wholesale price of U.S. production and U.S. import prices, 1979-1984.

Year	U.S. Production	Import				Average ¹
		Canada	Iceland	Denmark	Norway	
Dollar per Pound						
1979	1.34	1.03	1.30	1.28	1.25	1.21
1980	1.36	1.10	1.35	1.34	1.35	1.26
1981	1.69	1.20	1.41	1.42	1.36	1.36
1982	1.50	1.22	1.45	1.47	1.37	1.33
1983	1.47	1.26	1.35	1.37	1.33	1.34
1984	1.45	1.25	1.40	1.40	1.28	1.35

1) Average of total imports.

Source: Various publication from NOAA/MMFS.

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import prices among countries suggest that there are product quality or market access differences at least at the wholesale level. For example, the import price of cod fillets from Canada was the lowest at \$1.25 per pound in 1984, while the import prices from other major suppliers were \$1.28 to \$1.40 per pound. The wholesale price of U.S. produced cod fillet was \$1.45 per pound (Table 5).

Fresh fillets command a substantially higher price than do frozen fillets. On the East Coast, domestic landings are directed to the fresh fillet market and only in over supply situations do they enter the frozen markets. The domestic cod and pollock catch from Alaska that has begun to enter U.S. markets is primarily sold as frozen products due to the great distance to domestic market.

Over the last decade, the wholesale cod and haddock fillet price indexes increased by about 65% and 55%, while the indexes for meat and poultry increased by about 50% and 28%, respectively (Fig. 4). The retail cod and haddock fillet price indexes increased by about 65% and 85%, while the indexes for meat and poultry increased by about 50% and 22%, respectively (Fig. 5). The increases in groundfish wholesale and retail prices relative to prices of meat and poultry, together with the increased imports of fillets, reflects strong growth in consumer demand for groundfish products during this period.

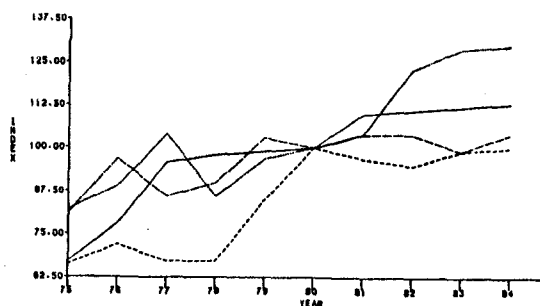


Fig. 4. U.S. Wholesale price index (1980=100)
 — Cod fillets - - - Meat
Haddock fillets - - - Poultry

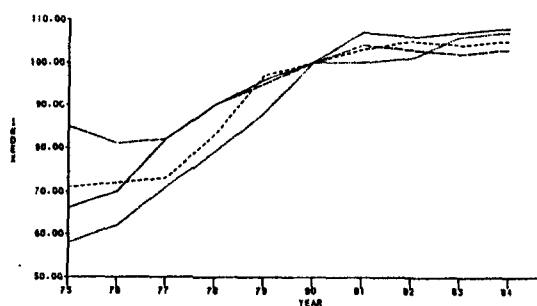


Fig. 5. U.S. Retail price index (1980=100)
 — Cod fillets - - - Meat
Haddock fillets - - - Poultry

Catch within U.S. Waters

Annual U.S. domestic landings of all groundfish were 340,000 mt, valued at \$267 million in 1984. Landings of Atlantic groundfish were 180,000 mt, valued at \$184 million, while Pacific groundfish were 160,000 mt, valued at \$83 million in 1984. Over the last decade, landings of Pacific groundfish increased about fivefold while those of Atlantic groundfish remained relatively unchanged. Cod, flounder, haddock, and pollock accounted for 70% of quantity and 77% of the value of U.S. groundfish landings in 1984 (Table 6).

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Table 6. Groundfish: U.S. domestic landings, joint-venture catches, and foreign catches in U.S. waters 1980-1984.

	(Thousand metric tons, round weight)				
	1980	1981	1982	1983	1984
Cod					
Domestic	63	67	79	101	97
J-V	9	9	14	17	40
Foreign	78	83	74	84	80
Total	150	159	167	202	217
Flatfish					
Domestic	98	91	103	115	100
J-V	15	22	27	37	54
Foreign	182	188	163	175	189
Total	295	301	293	327	343
Hadock					
Domestic	35	25	20	15	12
J-V	0	0	0	0	0
Foreign	10	6	6	3	1
Total	35	31	26	18	13
Pollock					
Domestic	19	19	16	15	29
J-V	23	59	129	283	444
Foreign	1125	1121	1053	976	1033
Total	1167	1199	1198	1274	1506
Other					
Domestic	106	112	127	112	101
J-V	15	50	84	37	126
Foreign	178	206	80	54	45
Total	299	368	291	253	272
Total					
Domestic	311	314	345	358	339
J-V	62	140	254	424	664
Foreign	1573	1604	1376	1292	1348
Total	1946	2058	1975	2074	2351

Source: Fisheries of the United States.

In 1984, joint-venture catches by U.S. fishermen (i.e., U.S. catch unloaded onto foreign vessels) totaled 665,000 mt, valued at \$79 million. This was 53% increase over 1983. The major species harvested were Alaska pollock, flatfish, Pacific cod, and Pacific hake (Table 6). The combined 1984 domestic and joint-venture catch of 1.0 million mt was greater than the 1982 groundfish catch of all but two countries.

The foreign catch of groundfish in the U.S. EEZ was nearly 1.4 million mt in 1984. As in the other years, the U.S. EEZ off Alaska supplied the largest share of the foreign catch(96%). Alaska pollock comprised 76% of the foreign catch; Pacific flounder, 14%; and Pacific cod, 5%. Japan continued as the leading nation fishing in the U.S. EEZ with a catch of 941,000 mt, 69% of the total foreign catch. Catches by vessels of the Rep-

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ublic of Korea, the second leading nation fishing in the U.S. EEZ, were 275,000 mt representing 20% of the foreign catch. If the domestic and joint-venture fisheries replace the foreign fisheries in the U.S. EEZ, the U.S. groundfish catch could exceed 2 million mt. With a catch of this amount in 1982, the U.S. would have ranked second in world groundfish catch.

The development of the domestic fisheries and the potential for the groundfish resources off Alaska to become a major source of groundfish products for U.S. markets are limited by both market conditions and the Alaska groundfish resources. The optimum yield (OY) is one measure of the potential of these fisheries and is very high compared to what is now domestically harvested and consumed in the United States. Many of the species are currently well accepted in the U.S. market, although others are limited by their present market forms. There are flounders (OY=412,000 mt) and Pacific cod (OY=280,000 mt) for fillet production, and Alaska pollock(OY=1,600,000 mt) for fillet, block, and surimi production.

Table 7. U.S. imports and optimum yields of Alaska groundfish.

	(Thousand metric tons, round weight)	
	Imports in 1984	Optimum Yield
Cod	500	280
Pollock	70	1,600
Sub-total	570	1,880
Flatfish	57	412
Grand Total	627	2,292

Product weight of imports was converted into round weight, assuming recovery rates: 35% for cod, 45% for pollock, and 70% for flatfish.

about one-half of U.S. cod imports in 1984. The 1.9 million mt optimum yield for cod and pollock is over three times the U.S. imports of gadoids. If it is assumed that half of the pollock OY is used for surimi production, which does not compete directly with the traditional groundfish product forms, the potential supply of Alaska pollock and cod to the traditional markets is about two times the U.S. imports of gadoids. The optimum yield of flounder of 412,000 mt is more than 7 times the U.S. imports of flatfish in 1984. Overall, the total optimum yield of 2.3 million mt for these species is about four times of the U.S. imports of corresponding species in 1984. The implication of this comparison is that for U.S. fishing vessels to fully utilize the groundfish resources in the U.S. EEZ, either there will have to be a significant increase in domestic consumption or the U.S. will have to become a major net exporter of groundfish.

To compare U.S. imports of groundfish and the optimum yields of groundfish resources off Alaska, the product weight of U.S. imports in 1984 was converted into round weight, assuming recovery rates of 35% for cod, 45% for pollock, and 70% for flounder. The results of conversion, together with the optimum yields of Alaska groundfish, are shown in table 7. The optimum yield of cod off Alaska of 280,000 mt is