Agenda Item H-1
February, 1980

MEMORANDUM

DATE: February 4, 1980

TO: Council Members, Scientific & Statistical Committee and Advisory Panel

FROM: Jim H. Branson, Executive Director

SUBJECT: Discussion of Foreign Allocations in Return for Market Opportunities

ACTION REQUIRED

Discussion of the concept, with comments on the document from Richard E. Gutting, NMFS, entitled "Economic Factors Related to the Prospects for U.S. Development of Its Alaska Pollock Fisheries Through Trade With Japan."

BACKGROUND

Three meetings ago the Council asked that this subject be included in a future agenda for discussion. The basic concept was that in return for an allocation, a foreign nation should commit itself to buying some amount of finished product from American fishermen, or in some other way encouraging the development of the American fishery for those same species. Since that directive was given by the Council, several projects in the same general area have developed and are pretty well covered in the three attachments to this agenda item. First, is a preliminary economic analysis by Robert L. Stokes of "U.S.-Foreign Cooperation for Fisheries Development" in which he explores a tentative offer from West Germany to buy X amount of finished product from American fishermen in return for an allocation of groundfish in the North Pacific.

Second is a long report entitled "Economic Factors Related to the Prospects for U.S. Development of its Alaska Pollock Fisheries Through Trade with Japan" prepared by the Division of Policy and Planning, NMFS, Washington. Nobody has had a chance to critique it as yet.

Third is a letter from Leitzell to Chairman Tillion asking for a meeting with the Chairman, or other interested Council members, on February 25th in Seattle to discuss Commerce's effort to expand export opportunities and try to relate more closely foreign fish allocations to expanded trade opportunities for U.S. industry.

Attachments

JHB

Agenda H-1
Feb. 1980

U.S.-FOREIGN COOPERATION FOR FISHERIES DEVELOPMENT: A PRELIMINARY ECONOMIC ANALYSIS

January 1980

Robert L. Stokes

Institute for Marine Studies
University of Washington

2

I INTRODUCTION

The U.S. Fisheries Conservation and Management Act of 1976 (FCMA) requires the allocation to foreign nations of that portion of the "optimum yield" of a fishery resource which is not harvested by U.S. fishermen. The law provides that;

> "the Secretary of State, in cooperation with the Secretary of Commerce shall determine the allocation among foreign nations of the total allowable level of foreign fishing which is permitted with respect to any fishery, subject to the exclusive fishery management authority of the United States. In making any such determination, the Secretary of State and the Secretary of Commerce shall consider:
>
> 1) whether, and to what extent the fishing vessels of such nations have traditionally engaged in fishing in such fishery;
>
> 2) whether such nations have cooperated with the United States in, and made substantial contributions to, fishery research and the identification of fishery resources;
>
> 3) whether such nations have cooperated with the the United states in enforcement with respect to the conservation and management of fishery resources; and
>
> 4) such other matters as the Secretary of State, in cooperation with the Secretary, deems appropriate." [1]

It is possible that the United States may elect to de-emphasize the principle of "traditional fisheries" and give more consideration to other matters: notably, to economic benefits received by the United States in return for fishing privileges. The preliminary analysis set forth here indicates that, with some reservations, such a policy could offer substantial economic benefits both to the United States and to the nations offering such exchanges.

The traditional-fisheries principle itself evolved as a form of trade-off between the United States and the nations fishing off its coast. Although the principle originally developed in the international context of the Law of the Sea, its acknowledgement at the time of unilateral extension of jurisdiction

by the United States (FCMA) served important U.S. national interests. These included the peaceful recognition by foreign nations of United States rights of jurisdiction, limitations placed by Japan on its high seas fishery for salmon of North American origin, and the continuation of fisheries research in the U.S. Fisheries Conservation Zone (FCZ) by several distant-water nations.[2]

Slow development of the United States fisheries for underutilized species such as Alaska bottomfish creates the need for a reassessment of these benefits and costs. Had the national fishing industry developed rapidly, a few years of foreign allocation under the traditional-fisheries principle might have been a reasonable price for what the United States gained at the time FCMA was enacted. Instead, it appears that large surpluses will be available for allocation to foreign nations for many years, particularly in the Bering Sea. Thus the cumulative fisheries resources allocated to foreign nations already exceed what had been expected when the FCMA was enacted and will increase with any further downward adjustment in the expected rate of United States fisheries development. If the traditional-fisheries principls is retained (with nominal fees) as the preliminary basis for allocation, the payment made by the United States to the original fishing nations will also increase.

For the most part, the slow development of the national fishing industry can be attributed to market conditions. Since mid-1977 the insignificant increase in the prices of products the United States would produce from underutilized species (e.g., frozen groundfish blocks and fillets) actually represents a price decline in terms of real inflation-adjusted dollars. On the contrary, prices have risen sharply, in real terms, for major items in the cost of fishing, such as fuel and investment capital.[3]

There may be another reason for the lag, particularly in the development

of an Alaska bottomfish industry. Under the traditional-fisheries principle, the bulk of Alaskan bottomfish are taken by Japanese firms which find the harvest vital to the full utilization of their distant-water fishing fleets and as a source of raw material for the paste-product market in Japan. Since Japanese firms also exert economic influence over most United States processors in Alaska through equity ownership, debt financing, and market guarantees, it is not beyond possibility that these firms would seek to protect their allocations by retarding the development of an Alaskan groundfishery.

Other nations without traditional fishing rights in the United States FCZ are beginning to offer what could be better deals. Many distant-water nations which have had to accept reductions in North Atlantic groundfish quotas, after seeking with only partial success to replace this production with resources in the southern hemisphere and elsewhere, still find themselves with underutilized factory trawler fleets and unsatisfied markets.[4] Allocations of United States groundfish surpluses could help them solve both these problems.

A first round of deals has already occurred. First, Mexico traded concessions to United States fishermen in Mexican waters for access to Bering Sea groundfish (primarily pollock); that allocation is being harvested by a joint venture (KORMEX) that consists essentially of South Korean distant-water fishing vessels operating under the Mexican flag. Second, Poland also obtained a Bering Sea pollock allocation, in part because the Poles agreed to sell the product -- pollock fillet blocks -- to a major United States importer of groundfish, Mrs. Paul's Kitchen. Finally, the Soviet Union and South Korea supply some of their factory ships through joint ventures which buy fish at sea from United States fishermen harvesting under the preferential national allocation.[5]

The next round of offers may center on exchanges of export markets for

fishing rights. The Federal Republic of Germany is requesting a 30,000 mt allocation of Bering Sea pollock and other groundfish species in 1980; in return, they have expressed a willingness to buy up to 10,000 mt of both high-value and low-value fisheries products from United States industry.[6] Private groups in Norway and in the southern European nations are formulating similar offers. Not surprisingly, Japanese interests have recognized that to maintain current allocations, they may have to match these offers. Indications are that some firms are considering doing so.[7]

II AID TO THE DEVELOPMENT OF UNITED STATES FISHERIES

The exchange of a guaranteed market in return for fishing rights could contribute greatly to the development of a national fishery for underutilized species. Any purchase agreement should open a firm market, assured for some years by an implicit or explicit linking to the allocation of TALFF (total allowable level of foreign fishing). Quantities and production periods would most likely be adequate to justify investments in large-scale, year-round trawling operations, automated filleting lines, and other cost-reducing equipment needed to make the United State industry competitive. The volume and duration of the potential markets should be sufficient to make investment in the industry as secure as in other available business ventures, thus assuring the participant good access to the capital market. This has not been the case in the past, particularly for processors seeking to move into underutilized species.

In addition, even secure investments must yield a return on capital which is attractive to potential investors. Under normal business conditions, a potential investor would calculate the expected rate of return for a fisheries development from market data on prices and production costs in the industry. Comparing that with rates of return on alternative investments would determine whether the investment is attractive. With respect to the development of an

underutilized fishery, the answer usually has been "no."[8]

Investment on the national side of a United States/foreign deal could offer a brighter prospect. The foreign participant obviously intends to make some, probably the greater part, of his profit from the fishing side of the deal. Thus, if prevailing groundfish prices did not make the purchase side financially attractive to United States participants, foreigners could, within limits, offer a premium and still come out ahead. That is, they could profitably subsidize the American industry in order to obtain allocations of TALFF.

This principle of implied subsidy could be extended further. The governments of distant-water fishing nations already provide direct and indirect subsidies to their fishing fleets, in particular for efforts to find new stocks.[9] From the standpoint of foreign fishing companies, these home government subsidies would offset some of the costs of any subsidy they must pay United States economic interests.

An improved product reputation would be another possible benefit deriving to the United States from such deals. U.S. national groundfish products have not yet established a standard for quality and reliability in export markets.[10] If marketed by established distant-water fishing companies, the products would reflect the reputation of those firms until, over time, American fishermen and processors would themselves meet the standards and establish a secure market in their own right.

Yet another (less direct) benefit of United States-foreign deals would be potentially important to American interests -- the formation of a better market structure. Currently, a few Japanese fishing and trading firms dominate the harvest of Alaskan groundfish and the export marketing of such higher-valued Alaskan species taken by American fishermen such as salmon, crab, and herring. In economic terms these firms operate in a noncompetitive monopsonistic, or at

least oligopsonistic, market structure.

A monopsonistic market consists of a single buyer who (in this case) determines the price to be paid the fishermen by equating marginal factor cost (what he must pay) with marginal value product (what the fish are worth to him -- or, roughly what he can sell them for less the costs of processing and distribution). Unless he can discriminate among fishermen, he must pay more for all the fish he buys every time he increases the quantity purchased. Hence marginal factor cost (the total he must pay for additional fish) is greater than the unit price paid on any transaction. To equate marginal factor cost with marginal value product, then, the monopsonist must pay fishermen less than the value of marginal product; that is, his profit-maximizing decision will usually be to pay the fishermen less than his selling price net of processing and distribution costs.

An oligopsonistic market consists of more than one buyer, but only a few. Although no single oligopsonist has complete control over the price paid for fish, each recognizes that he has substantial influence over that price. In particular, each buyer knows that if he offers a higher price to capture additional supplies he may force a reaction from other buyers -- the familiar price war in which several buyers outbid each other to protect their sources of supply. Therefore oligopsonists, too, generally hold prices below value of marginal product because they recognize that individually profitable purchases may be costlier in the long run if they set off such a price spiral.

Consider how the profit-maximizing strategy of buyers would change, to the benefit of United States fishermen, if a more competitive market structure resulted from the entry of other distant-water fishing companies and nations through United States-foreign deals. As the number of buyers increases, the influence of any one diminishes. An extreme case is the perfectly competitive

world grain market, in which most individual buyers and sellers have so little effect that the price is regarded as an external constant. Buyers maximize profits by purchasing grain whenever the value of marginal product exceeds prices, and farmers come as close as possible in the economic sense to realizing "full value for production."

Although perfectly competitive markets for fish are unlikely, any movement in that direction should provide a comparable benefit to United States fishermen by increasing the value they receive for their catch.

III. PROBLEMS

What are the problems and risks? There are numerous examples in fisheries where imperfections of the market or erroneous government policies have attracted capital and labor into alternatives which, although privately profitable, are socially disadvantageous. This experience dictates a careful search for any undesirable side effects of contemplated exchanges.

One possible danger is that foreign market deals which are necessarily of short duration may stimulate apparently attractive short run investmens in the domestic fishing industry that are actually economic losers in the long run. A principal reason for such a short-term tendency is that existing law (with an eye to development of the United States fisheries industry) mandates a phasing out of foreign fishing, and, with it, the economic basis for deals of the above type. A second reason is that foreign nations will be less willing to pay for access to United States resources as they depreciate out their present trawl fleets and find other sources of supply.

Will American operations then be able to survive under normal market conditions? Where the answer would be in the negative, American producers shutting down at the end of a foreign deal could strand workers or, perhaps, entire communities. On the other hand, producers recognizing the malleability of

government policy might lobby for continuation of the foreign fishing that justified their operations or, failing that, for other forms of public support.

Even if the supplying of export markets were to prove profitable in the long term, it may not be the best development path for the domestic industry. Considering transportation costs, trade barriers, and other possible factors, a preferred market would appear to be the domestic United States market for groundfish, primarily supplied now by imported blocks and fillets. Might fisheries agreements with other nations bias the industry away from that domestic market, which could otherwise be the most logical destination for Alaska groundfish products?

Also, who is to decide who gets the benefits from deals, including any implied subsidy? Under present legal arrangements, foreign allocations are made by the U.S. State Department with the advice of the Department of Commerce and the fisheries management councils of affected regions. As specific American firms stand to benefit in this allocation, the Departments of State and Commerce and the Councils, will inevitably be drawn into new forms of domestic economic allocation and, hence, into domestic politics. How is the State Department to choose between competitive foreign applicants when each has a domestic processor to lobby on its behalf? What if one deal subsidizes onshore Alaska processing and another benefits offshore processing? Here the State of Alaska's preference for onshore processing will come into play as well. Finally, imagine that a foreign fishing operation is opposed by some American fishing interests (i.e., halibut fishermen who fear that foreign trawlers will takt that species), but the same operation is providing a secure market and possibly a subsidy to other United States fishing interest.

IV. CONCLUSION

One suggests that a lively debate will ensue over these questions. But with a bit of imagination, real gains may be possible, both for the American fishing industry and for distant-water fishing nations which do not have traditional fishery rights in the American Fisheries Conservation Zone. These benefits, to some degree, may come at the expense of such traditional fishing nations as Japan and the USSR. However, United States/foreign deals may also demonstrate that cooperation between coastal state and distant-water fishermen can provide benefits for both. It is hard to imagine two nations more likely to gain in the long term from the spread of such an idea than Japan and the USSR.

REFERENCES

1. Public Law 94-265, Fisheries Conservation and Management Act of 1976, 90 Stat. 331.

2. Personal interview, Dr. Dayton L. Alverson, January 2, 1980.

3. Robert L. Stokes, "Alaska Groundfish: A Financial Feasibility Analysis," unpublished manuscript presented before the U.S. International Trade Commission, Seattle, Washington, November 1979.

4. Great Britain, White Fish Authority, Fisheries Economics Research Unit, A Retrospective View of Developments in the Fishing Industry in 1976 and Their Consequences in 1977, (occasional paper No. 1, 1977) and Cod Profile (occasional paper No. 2, 1977). Also interview (1979) with Mr. Wisch, Chairman and Cpt. Mushkeit (Inspector for Overseas Operation) Hochseefischerei Nordstern AG.

5. Robert L. Stokes, "Prospects for Foreign Fishing Vessels in U.S. Fisheries Development," Marine Policy, forthcoming.

6. Interview (1979) with Mr. Larry Snead, U.S. Department of State, Office of Fisheries Affairs.

7. Personal interview (1980)with Dr. Dayton L. Alverson, Seattle, Washington.

8. Robert L. Stokes, " Alaska Groundfish...."

9. Great Britain, White Fish Authority, Annual Report and Accounts, 1978. Also interview (1979) with Mr. Wisch (Chairman) and Cpt. Mushkeit (Inspector for Overseas Operations) Hochseefischerei Nordstern AG.

10. U.S. Department of Commerce (Earl R. Combs, Inc., Contractor) Export and Domestic Market Opportunities for Fish and Shellfish, December 1978.

Agenda H-1
Feb. 1980

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Washington, D.C. 20235

January 30, 1980

F/UD:

Mr. Clem Tillion
North Pacific Fishery
Management Council
P.O. Box 3136DT
Anchorage, AK 99510

Dear Clem,

As you are aware, the Fisheries Development Initiative announced in May 1979 included a major effort to expand United States exports in the non-traditional species. To accomplish this goal, we have established an export development program in NMFS to work with the fishing industry throughout the United States to identify export opportunities and assist our industry in taking advantage of those opportunities where such assistance is necessary.

An integral part of this export expansion activity is a new policy to try and relate more closely foreign fish allocations to expanded trade opportunities for U.S. harvested and processed product. As you are also aware, the State Department has withheld 40,000 metric tons of Alaska pollock from the Japanese TALFF in 1980 pending a forthcoming trade mission with the Japanese scheduled for April 1, at which time Japanese interest and effort to expand their imports of U.S. products in certain target species, including pollock, will be carefully reviewed. Dick Frank is expected to lead that mission, and I expect to accompany him. Similar discussions will be held with Spain in March, and preliminary discussions with other European countries are expected to take place at that time as well.

These efforts to expand U.S. exports are directly related to our program to encourage fisheries development in the underutilized species and to expand our domestic capability to harvest and market these products. These efforts are so closely tied into the Council's deliberations and planning for these fisheries in the next several years that I would very much like an opportunity to meet with you, Jim Branson, and any other interested Council members who could be available to discuss these issues further. If possible, I would very much like to meet with your Council group during a brief visit I shall make to Seattle on February 25. We could meet in the morning or in the evening after 6 p.m. At that time I would also like to bring you up-to-date on the current status of Administration policy regarding reallocation of the withdrawn Soviet TALFF.

I am going to ask Harry Rietze to get in touch with you to see whether a meeting can be arranged for February 25, and, if so, to firm up the details of such a meeting. If we cannot meet, I would like to discuss this with you on the telephone.

I look forward to hearing from you.

Sincerely yours,

Terry L. Leitzell
Assistant Administrator for
Fisheries

cc: Harry Rietze

Agenda H-1
Feb. 1980

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Washington, D.C. 20235

Fx53/MM

JAN 17 1980

TO: North Pacific Council - Jim H. Branson

FROM: Fx5 - Richard E. Gutting, Jr.

SUBJECT: Economic Factors Related to the Prospects For U.S. Development of Its Alaska Pollock Fisheries Through Trade With Japan.

Our office has prepared the attached report as a background paper on the issue of fishery products trade with Japan. This paper was done at the request of Terry Leitzell who will be using the information in connection with the development of a strategy to enhance exports of species that are surplus to the needs of the U.S. market.

We would very much appreciate your review of this report, and your comments, by February 15 if possible. If you have any questions with regard to the paper, or wish to discuss it, please contact Mort Miller on (202) 634-7111.

FILE	ACT	INFO	ROUTE TO	INITIAL
				MAH

cc: Council + SSC
JAN 28 1980

ECONOMIC FACTORS RELATED TO THE PROSPECTS FOR U.S. DEVELOPMENT OF ITS ALASKA POLLOCK FISHERIES THROUGH TRADE WITH JAPAN

Prepared by:
National Marine Fisheries Service
Office of Policy and Planning
Economic Analysis Staff
Washington, D.C.

December, 1979

DRAFT

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Economic Factors Related To The Prospects For U.S. Development Of Its Alaska Pollock Fisheries Through Trade With Japan*

Introduction

The purpose of this report is to highlight certain economic factors that have an important bearing on the development of a large scale U.S. bottomfish industry in Alaska. The focus is on Alaska pollock which represents one of the most abundant species now used for human consumption in the world. It is estimated that in the Northeast Pacific, within the U.S. Fisheries Conservation Zone (FCZ), there are ample stocks of Alaska pollock to sustain catches of one million metric tons annually, which is equivalent to more than one-third of total U.S. landings of all species from all areas. There are even larger Alaska pollock stocks in the Northwest Pacific, off Japan and the USSR.

The Alaska pollock fishery in what is now the U.S. zone has been vigorously exploited by foreign interests since the early 1960's, principally by the Japanese. U.S. fishermen however, have largely ignored the fishery, for good economic reasons. Pollock are highly perishable, and require either onboard processing (for which U.S. vessels are generally not equipped) or frequent offloadings at processing sites (which reduces flexibility and productive trip time). Moreover, there is a lack of suitable processing sites and where there

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* A staff report of the NMFS Economic Analysis Staff, Office of Policy and Planning. Principal contributors to this report were Morton Miller, Richard Surdi, and Donald Whitaker. Typing of text and tables was done by Bernadette Anderson.

are buyers, the offering price is low. U.S. fishermen clearly have had much better alternatives in Alaska waters than to fish for pollock.

U.S. processors have claimed that it is not economically feasible for them to handle pollock. Domestic demand for processed Alaska pollock is principally for frozen blocks of fillets which are supplied exclusively by foreign imports. Domestic processors apparently are unable to compete with these imports, given the price they would have to offer U.S. fishermen for raw product in order to encourage U.S. effort in the pollock fishery. There is a strong demand abroad, in Japan, for pollock products, but U.S. processors are virtually shut out of the Japanese market by stringent protective import quotas. Alaska pollock is the leading species in Japan's marine fisheries in terms of landings, accounting for nearly one-fourth of the total tonnage. In terms of value, Alaska pollock is second among the more than 50 significant species in Japan's catch. Nearly half the world catch of Alaska pollock is taken by Japanese fishermen and about 40-45 percent of the Japanese pollock catch is taken in the U.S. zone off Alaska. The USSR now harvests about the same quantity of Alaska pollock as Japan, although nearly the entire USSR catch is taken off its own shores, in the Northwest Pacific.

The Japanese restrictions on pollock imports constitute a large obstacle to U.S. industry development of an Alaska pollock fishery. The Japanese utilize over 2 million tons of Alaska pollock (live weight) annually, of which about 850,000 tons is taken off Alaska. Almost all

the pollock caught by Japanese vessels is for domestic consumption, mostly in the form of products fabricated from fish paste (surimi) that has been processed from Alaska pollock. In contrast, the U.S. market absorbs the live weight equivalent of about 12,000 tons of Alaska pollock almost all of which is imported in the form of frozen blocks of fillets or minced flesh. At most, according to a recent study (Combs, 1979), the United States market has the potential to absorb about 170,000 tons of Alaska pollock by the late 1980's. Thus, if U.S. industry depended solely on domestic markets for sales of Alaska pollock, U.S. demand would represent only about 15 percent of the amount available in the U.S. pollock fishery off Alaska under present management policy.

World Production of Alaska Pollock

Alaska pollock constitute one of the world's major fishery resources. Annual catches of Alaska pollock in all areas have averaged about 4.5 million tons, in recent years. This total is equal to about one-third of the total world catch of all bottomfish species of which there are over 50 species with commercial significance (Table 1). Alaska pollock are caught exclusively in the North Pacific. Roughly, about three-fourths of the world catch is taken in an area west of 175° which includes the coastal and offshore areas of Japan, Korea, and the USSR. The remaining one-fourth is from waters off Alaska, that are included in the U.S. Fisheries Conservation Zone (FCZ) (Table 2).

Japan, the USSR and the Republic of Korea account for almost the entire world catch of Alaska pollock. In 1977, Japan and the USSR respectively harvested 45 percent and 46 percent of the world total. The Republic of Korea's share was 9 percent, and the combined catch of other countries including Canada, Poland and the United States was not statistically significant (Table 3).

About two-thirds of Japan's catch of Alaska pollock comes from the Northwest Pacific, which includes Japan's own coastal and offshore waters and those of the USSR. The other remaining one-third is taken in the Northeast Pacific. Neither the USSR nor the Republic of Korea is as heavily dependent as Japan on the Northeast Pacific for their respective supplies of Alaska pollock. According to the latest available FAO data (1977) only between 2 and 3 percent of the USSR Alaska pollock catch and 16 percent of the Korean catch was taken in the Northeast Pacific (Figure 1).

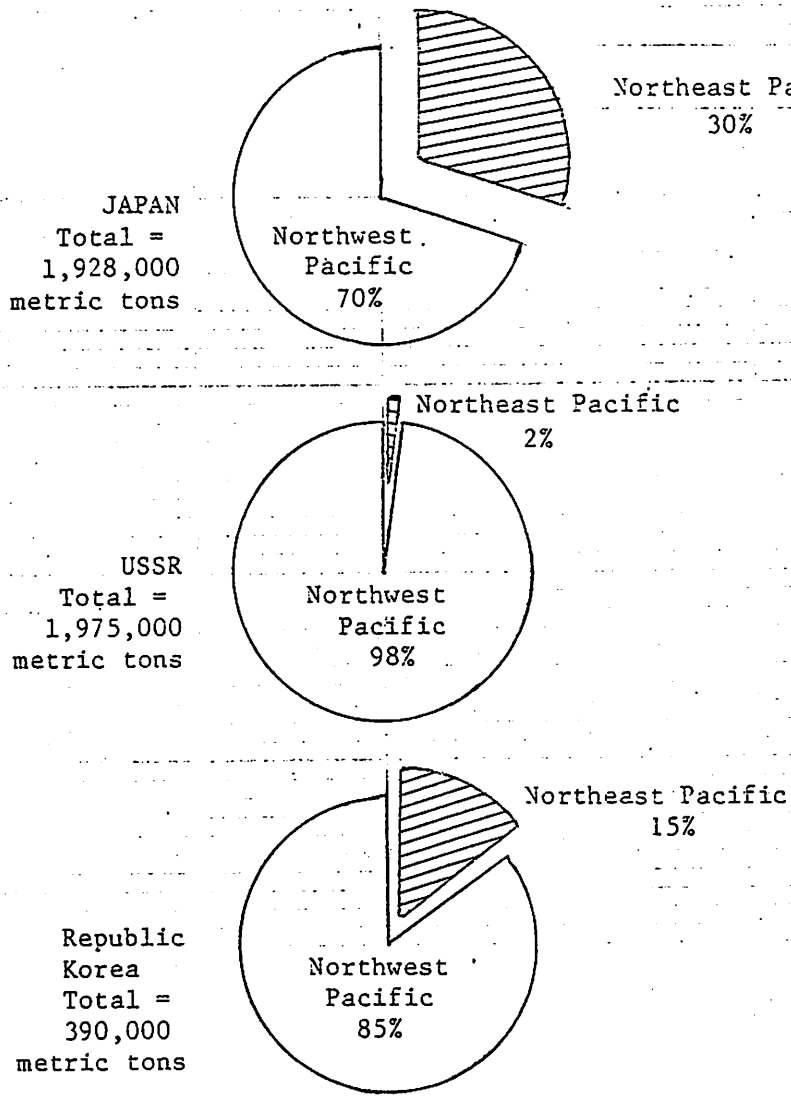
Status of the U.S. Alaska Pollock Fisheries

Alaska pollock make up the largest part of the groundfish stocks that are found off Alaska. These stocks are most abundant in the Bering Sea, and are also present in the Gulf of Alaska (Figure 2). Annual bottomfish catches by all nations, in the Bering Sea area managed by the United States, averaged about 1.5 million m.t. in the 5 year period 1974-1978. Pollock accounted for 78 percent of the total, flounders 12 percent, and the remaining 10 percent consisted of cod, ocean perch, sablefish, halibut, atka mackerel, and other species (Table 4). In the

Figure 1

Among the Three Principal Nations that Fish for Alaska Pollock in the Northeast Pacific, Japan Relies Most Heavily on this Area for its Total Alaska Pollock Catch

Distribution of Alaska pollock catches, By (FAO) area of catch, 1977

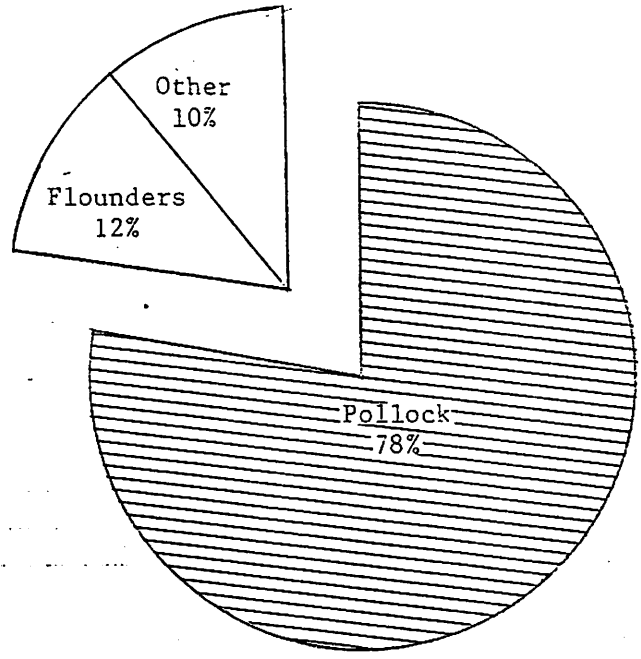


Source: Table 3

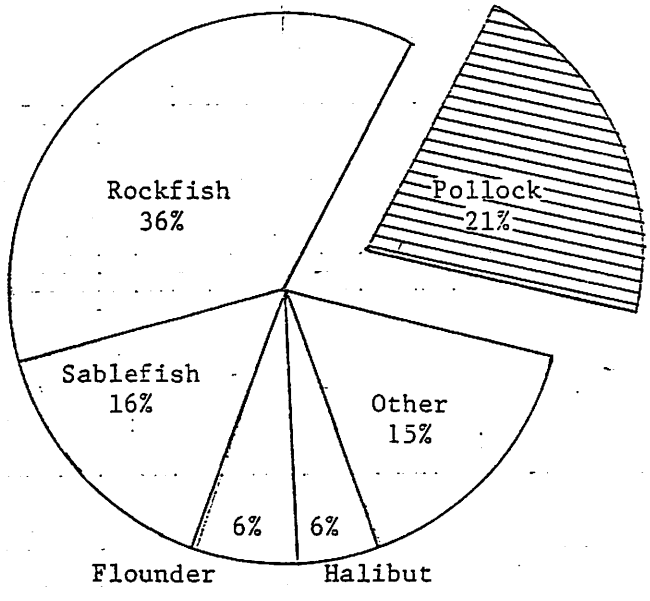
FIGURE 2

Alaska pollock is the predominant groundfish species in the Eastern Bering Sea, and is important also in the Gulf of Alaska

Composition of groundfish catches in the Eastern Bering Sea/Aleutian region - Average for 1974-78 (total = 1,541,000 metric tons)



Composition of groundfish catches in the Gulf of Alaska, Average for 1971-75 (total = 177,000 metric tons)



Source: Tables 4 and 5

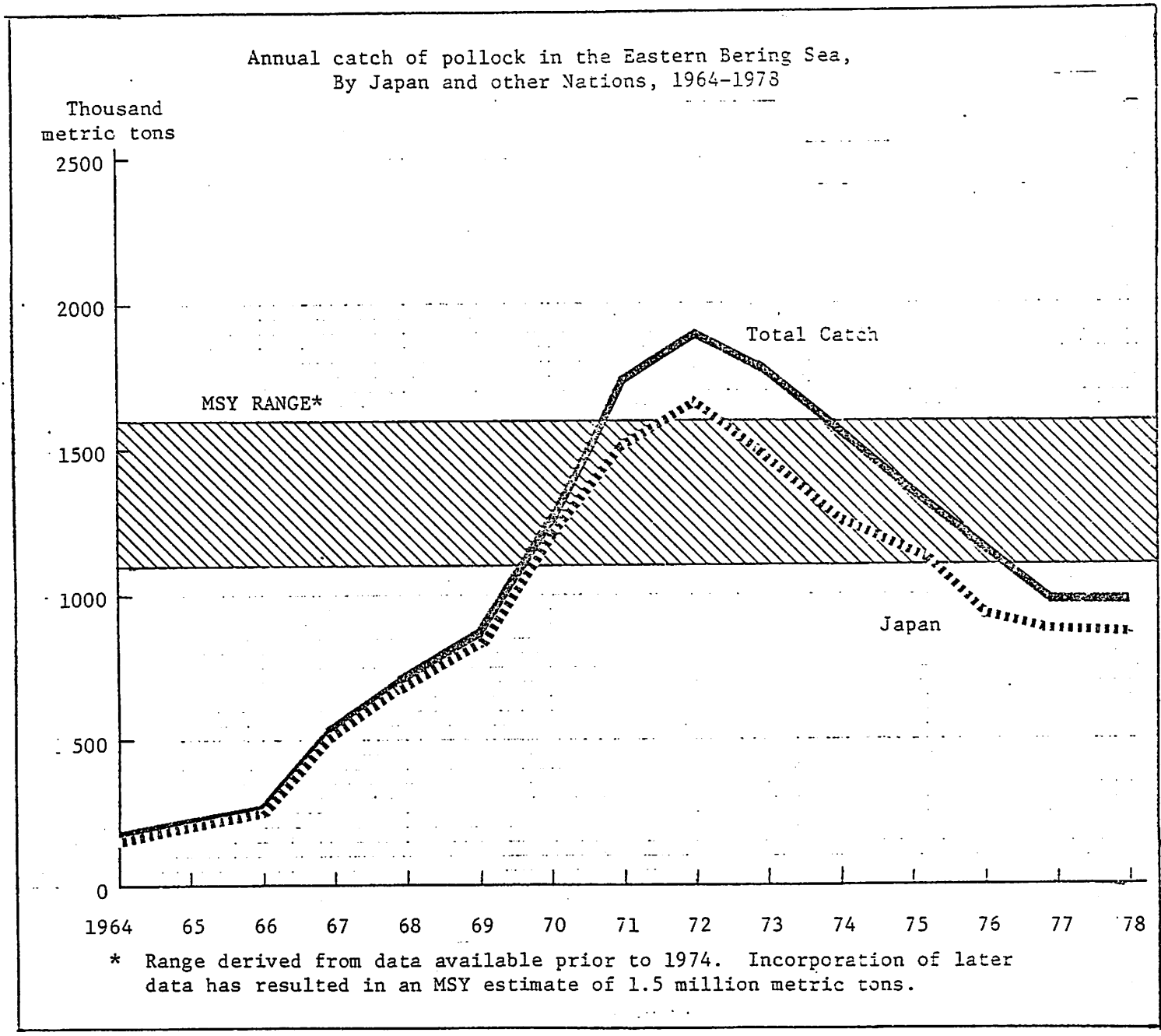
Gulf of Alaska, bottomfish catches have averaged about 177,000 tons, annually (1971-1975). Rockfishes lead the groundfish catch in the Gulf of Alaska, with 36 percent of the total, followed by pollock, 21 percent; sablefish, 16 percent; and flounders, halibut and other species, 27 percent (Table 5).

The pollock fishery off Alaska began to assume importance in the early 1960's when heavy foreign fishing, particularly by Japan and the USSR, decimated stocks of yellowfin sole, the principal target species at that time (Figure 3). Japanese development of the Alaska pollock fishery was stimulated by their successful implementation of mechanized processing of pollock into minced meat on mothership and large factory stern trawlers. Catches of pollock in the Bering Sea increased tenfold, from 175,000 tons in 1964 to 1.9 million tons in 1972, while total groundfish catches reached 2.2 million tons. At its peak, the Japanese catch of Alaska pollock in the Eastern Bering Sea was 1.7 million tons. Japanese fleets fishing for pollock and other species in the Northeast Pacific grew to 10 mothership fleets and 254 independent vessels, ranging in size between 2,500 and 5,500 gross tons (Tables 6,7).

Declining stock abundance for pollock became apparent after 1972, as catch per unit of effort (CPUE) dropped sharply (Figure 4). Between 1972 and 1975 the CPUE index for pollock in the Eastern Bering Sea dropped 80 percent (Table 8). Restrictions were placed on fishing, and these restrictions along with declining stocks resulted in increasingly smaller catches. By 1977 the pollock catch for all nations was down to

FIGURE 3

The Bering Sea pollock catch peaked in 1972 and declined thereafter due to declining abundance and fishery restrictions -- Japan has been the predominant harvester of Bering Seas pollock since the fishery came under heavy commercial exploitation in the early 1960's.

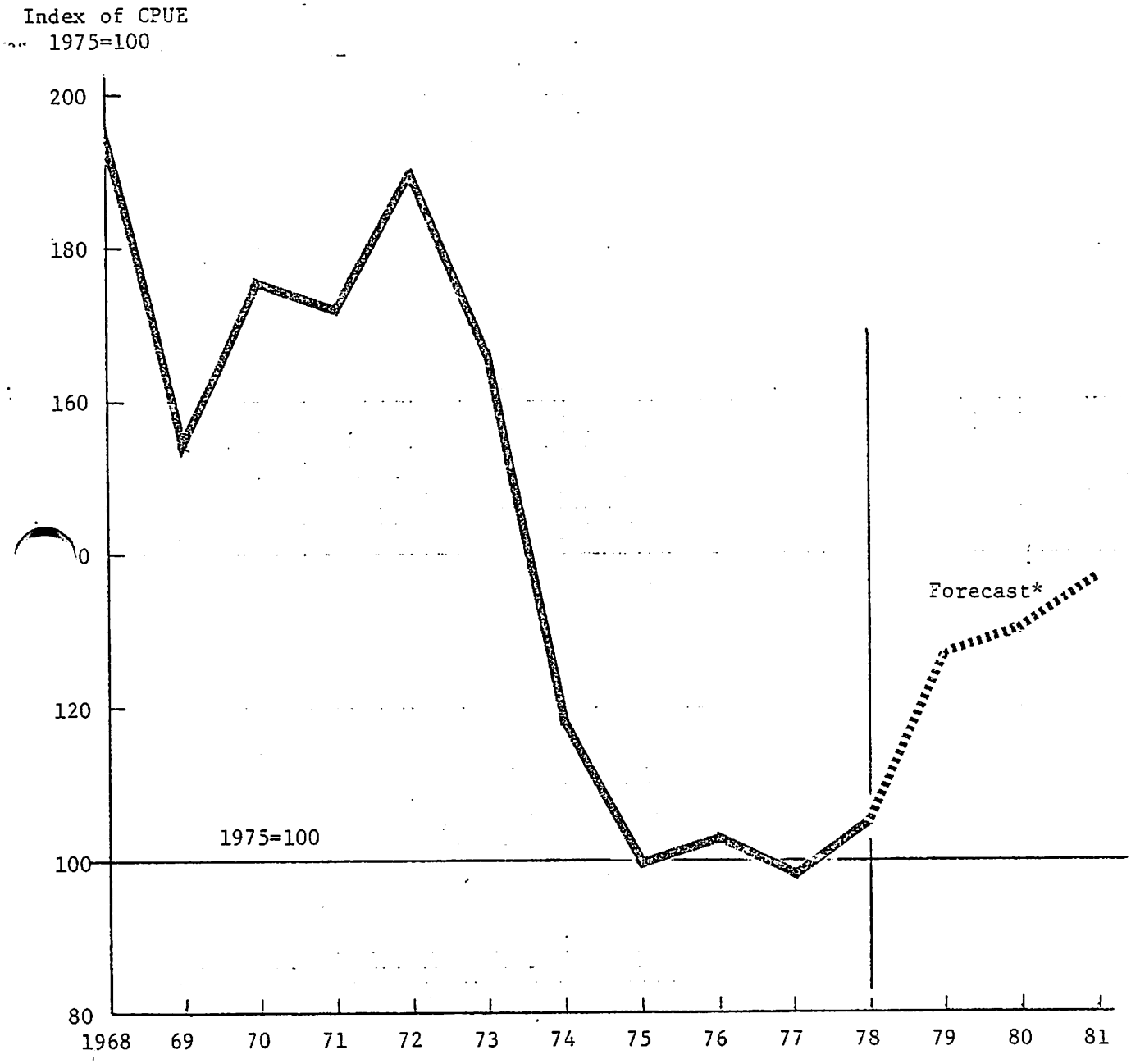


Source: Table 6

FIGURE 4

The relative abundance of Bering Sea pollock declined sharply since 1972 -- it has only recently begun to show signs of improvement

Index of catch per unit of effort in the Eastern Bering Sea pollock fishery, 1968-1978 and forecast 1979-1981*



* 1968-1978 represents estimates by U.S. scientists.
Forecast 1979-1981 is derived from estimates by Japanese scientists.

Source: Table 8

about 1.2 million tons, and since then catches have been regulated under FCMA at just under 1 million tons. Estimates of MSY for the Eastern Bering Sea pollock fishery are in the range of 1.1 to 1.6 million tons.

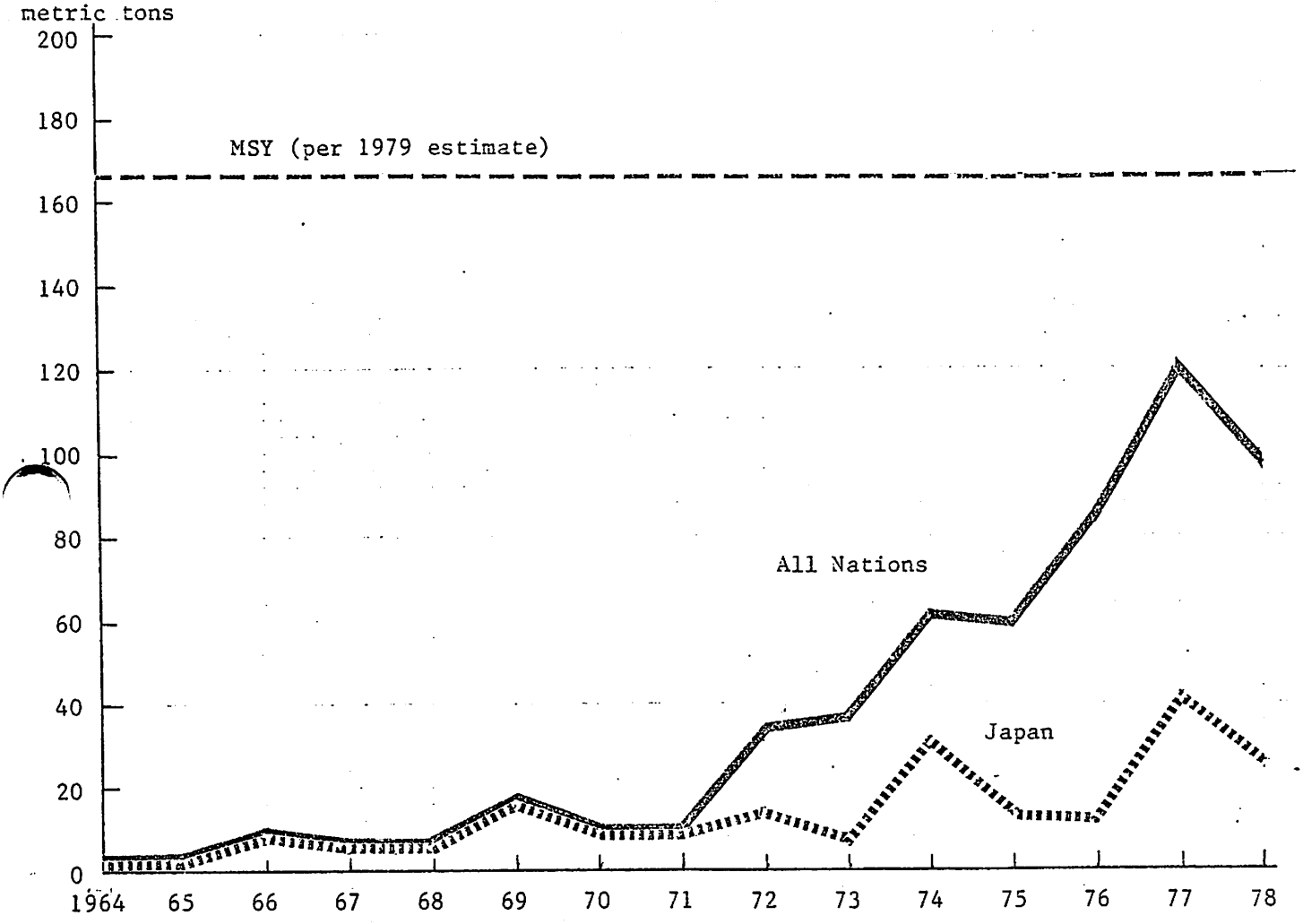
Present management aims at keeping catches slightly under MSY, and there are signs of improved abundance. CPUE increased in 1978, and according to some scientists, it will continue to improve through 1981. In this connection, it needs to be noted that the 1978 pollock fishery was enhanced by exceptionally strong year classes during 1972-1974. Later years classes (1975-1976) are also reported to be relatively strong. In any case, stocks of pollock in the Bering Sea-Aleutians and Gulf of Alaska areas have been pronounced "healthy" by NMFS biologists (Table 9).

In contrast to the Bering Sea, pollock catches in the Gulf of Alaska have been increasing, although the total amounts to only about one-tenth of the Bering Sea pollock catch (Figure 5). Since 1971, pollock taken by all nations in the Gulf of Alaska has increased at an average annual rate of about 40 percent, building to a peak 120,000 tons in 1977. The catch in 1978 dropped to about 97,000 tons. MSY for the Gulf of Alaska pollock fishery is estimated at about 163,000 tons (table 10).

Figure 5

Commercial exploitation of the pollock fishery in the Gulf of Alaska has not affected stock abundance -- the annual catch is increasing as a result of other nations joining Japan in the fishery during the 1970's*

Annual Catch of Pollock in the Gulf of Alaska, By Japan and other nations, 1964-1978



* Since 1971, catches have increased at a compound annual rate of nearly 40%.

Source: Table 10

Foreign Participation in the U.S. Alaska Pollock Fisheries

Traditionally, Japan has dominated the Eastern Bering Sea pollock fishery, and has been an important factor in the Gulf of Alaska pollock fishery (Figures 6, 7). In 1978, Japan accounted for 84 percent of the Bering Sea pollock catch and 27 percent of the pollock catch in the Gulf of Alaska. For the two areas combined, Japan's share of the total pollock catch was 78 percent (Table 11). Provisional data for 1979 show that Japan continues as the leading harvester of Alaska pollock in the FCZ, with 80 percent of the total (Table 12).

Other nations that have fished for pollock in the Eastern Bering Sea included the USSR, the Republic of Korea, and more recently Taiwan and Poland. Together, these nations account for well under 20 percent of the total catch. In the Gulf of Alaska, the USSR is the principal harvester of pollock, (43 percent of the total in 1978) followed by the Republic of Korea, Japan, Poland, and, in 1979, Mexico.

The combined Bering Sea-Aleutian and Gulf of Alaska foreign allocations of pollock and other groundfish for 1979 were as follows:

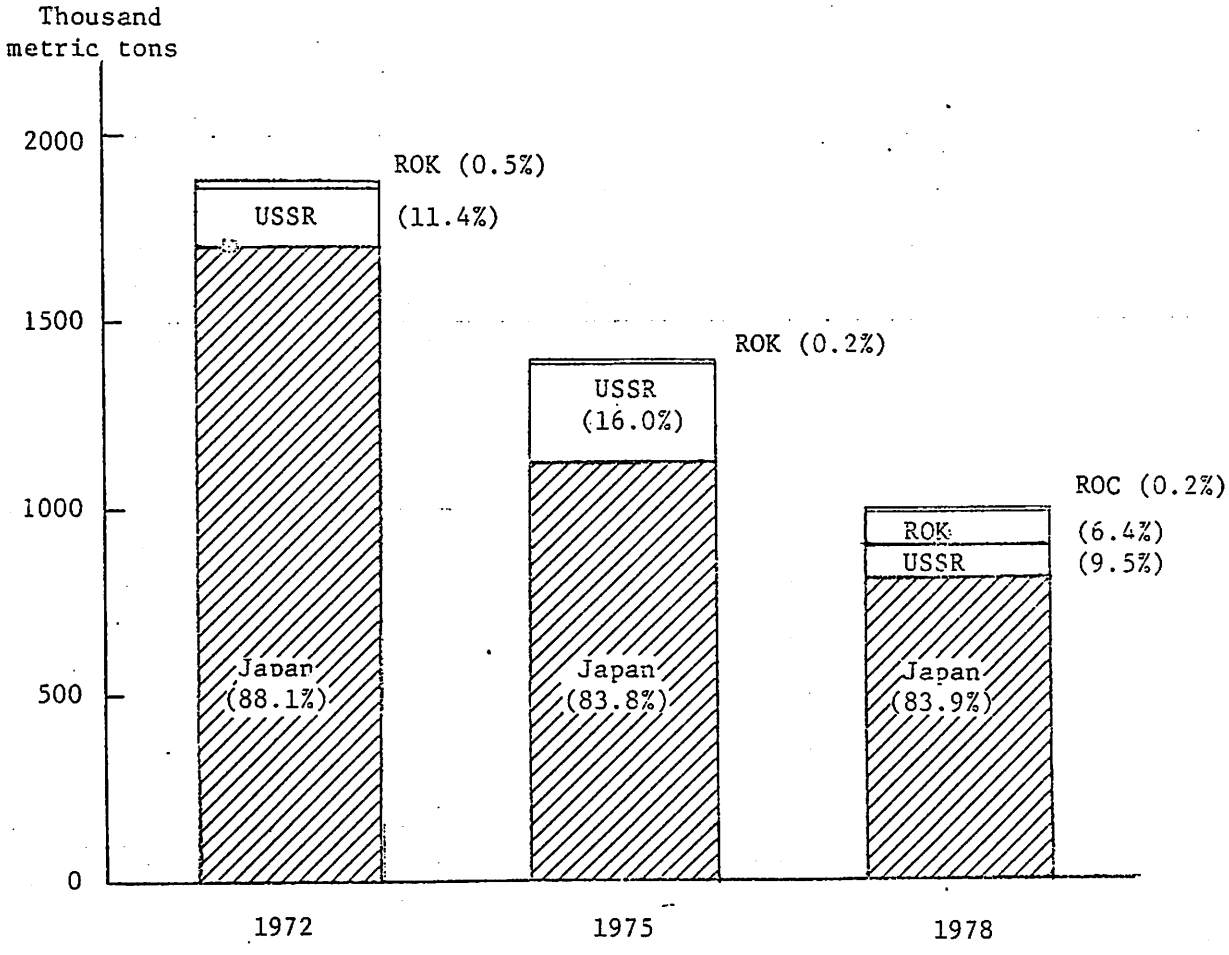
	Pollock	Other	Total Groundfish	% of Total
Japan	812,909	244,637	1,057,546	67.9
USSR	119,668	169,647	289,647	18.6
Mexico	12,170	8,887	21,057	1.4
Poland	44,523	6,722	51,245	3.2
Korea	112,930	20,206	133,136	8.5
Taiwan	5,000	500	5,550	0.4
Total	1,107,200	450,931	1,558,131	100.0

SOURCE: Table 13

FIGURE 6

Through 1978 only four countries participated in the Eastern Bering Sea pollock fishery, with Japan consistently taking well above 80% of the total harvest

Catch of pollock in the Eastern Bering Sea,
By country, 1972, 1975 and 1978

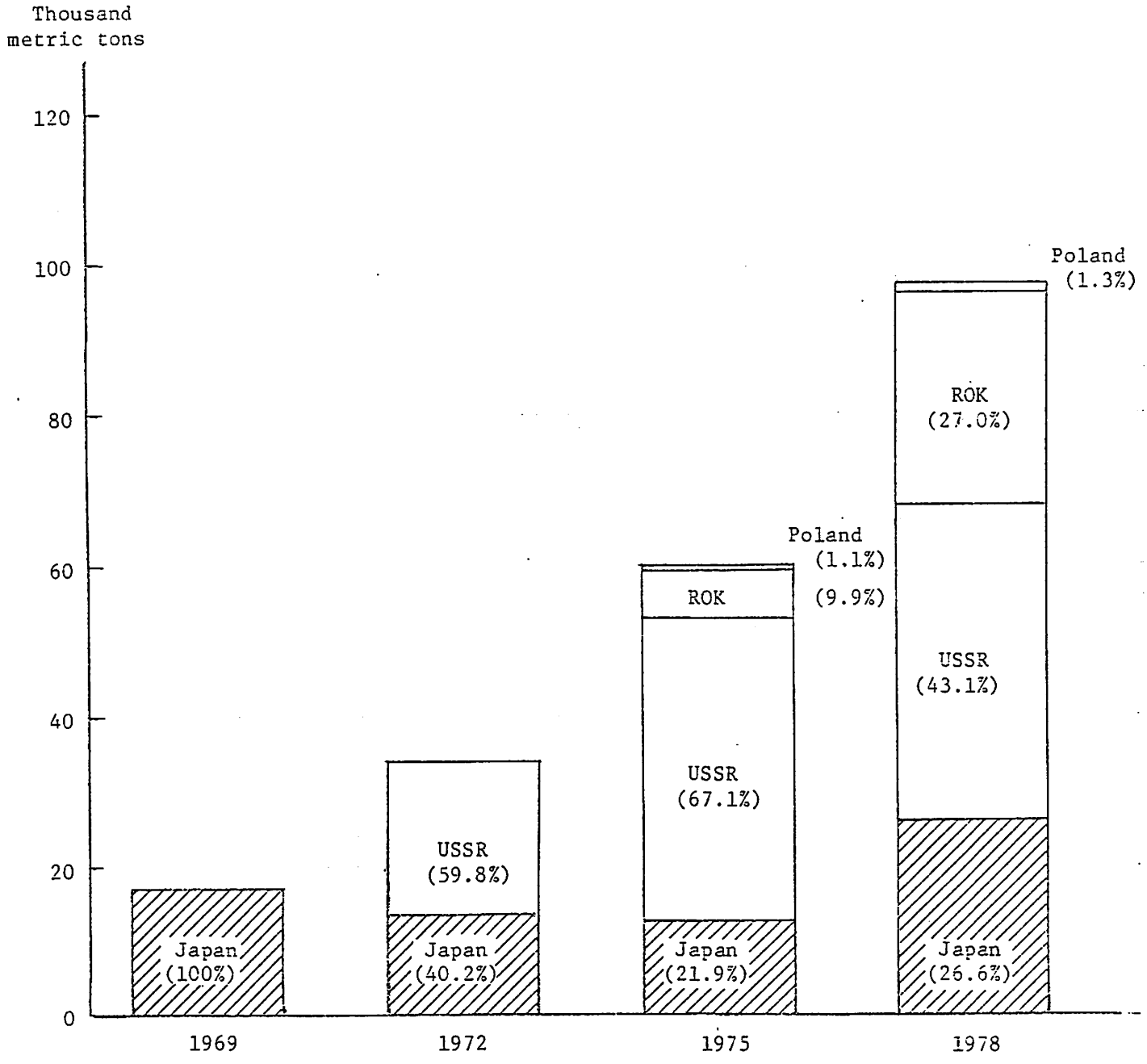


Source: Table 6

FIGURE 7

Going into the 1970's Japan was the sole harvester of pollock in the Gulf of Alaska -- now one of several participants in the fishery, Japan accounts for about one-fourth of the annual catch

Catch of pollock in the Gulf of Alaska,
By country, 1972, 1975 and 1978



Source: Table 10

U.S. Participation In Its Alaska Pollock Fisheries

There has been little U.S. participation in the Pollock fisheries off Alaska. No more than 1,500 metric tons of all groundfish species has been caught by U.S. commercial fishermen in the Bering Sea/Aleutian region in any recent year, much of it being sold for bait. Similarly, in the Gulf of Alaska, most domestic groundfish landings are the result of supplemental fishing activities, between seasons for more economically attractive species. The domestic groundfish catch in the Gulf of Alaska in 1976 totaled about 1,650 tons of which less than 200 tons was pollock.

Despite its traditional lack of interest in Alaska groundfish, especially pollock, U.S. industry has a large harvesting potential that could be committed to these fisheries. In the Alaskan shellfish fleet in 1978, there were 197 combination crabber-trawlers, and a large number of these types of vessels were under construction in 1979.1/ Few U.S. processors have ventured into the production of groundfish products in Alaska, but new interest is being generated. In 1977, only two firms in Alaska processed groundfish. According to a survey taken in connection with the development of management plans for the groundfish fisheries in Alaska, there could possibly be 11 additional U.S. processors handling Alaska groundfish before 1980.

1/ An NMFS survey during July, 1979, revealed that U.S. boatyards had 56 crabber/trawler combination vessels scheduled for delivery in 1979 and 1980, for Alaska fisheries. There were also numerous additional vessels equipped for trawling that were destined for Alaska fisheries.

New filleting equipment capable of efficient processing of small fish such as Alaska pollock has become available, and this could pave the way for eventual production of frozen blocks for the U.S. market by U.S. industry. It is estimated that as much as 70 percent of pollock taken in the Bering Sea are too small for machine filleting by equipment that has been in service up to now. Also, research has been undertaken, by NMFS, to convert minced pollock flesh into convenience products for the U.S. market.

Development of a U.S. frozen block industry, and the successful large scale introduction of pollock-based covenience foods in the U.S. market, are long term goals. To reach these goals will require heavy investment in processing capability and in market development. In the near term, marketing constraints will limit participation by U.S. industry in the Alaska pollock fishery. These near term limitations are reflected in the actions of the North Pacific Fishery Management Council in its groundfish plan for the Eastern Bering Sea/Aleutian area. The Council has recommended that 56,100 tons of groundfish be allocated for domestic harvesting, plus a reserve of 63,324 tons that could be made available to U.S. fishermen. In the Gulf of Alaska, the Council has recommended a domestic harvest allocation in the amount of 116,927 tons, and a reserve of 68,660 tons. For both areas, combined, the domestic allocations plus the reserve amount to less than 17 percent of the optimum yield (OY). Even so, Alaska pollock figures heavily in these admittedly modest short term plans for U.S. participation in the Alaska

groundfish fisheries as reflected in the following recommended allocations for the Bering Sea/Aleutian and Gulf of Alaska areas:

	All Groundfish	Pollock	% pollock of Total
	(Metric tons)		
Domestic Harvest (DAH)	173,027	84,150	48.6%
Reserve	141,984	83,760	59.0
Total DAH & Reserve	315,011	167,910	53.3%
Allowable Foreign Fishing (TALFF)	1,588,115	1,100,890	69.3
Optimum Yield (OY)	1,903,126	1,268,800	66.7
% DAH of OY	9.1%	6.6%	
% DAH & Reserve of OY	16.6%	13.2	
% TALFF of OY	83.4%	86.8%	

SOURCE: Tables 14, 15.

Japan's Import Policy and Its Implications For U.S. Alaska Pollock Fisheries Development

Japan follows a highly restrictive import policy with respect to pollock. Two types of import quotas are imposed. One is a specific quota on volume that is applicable only to the USSR and the Republic of Korea, and allows only processed pollock to enter.[2/] Pollock are also included with sardines and mackerel, in a quota on value which is subject to change annually. This quota in 1977 allowed a total of $20 million in pollock/sardine/mackerel imports from all sources.[3/]

2/ The quota in 1978 was 70,000 m.t. which was allocated to a Japanese fishing company for purchase of pollock at sea from Soviet vessels, for processing on board a Japanese factory ship.

3/ This quota is allocated to a number of Japanese import companies which carry on trade with more than 80 countries.

The artificial barriers Japan maintains against imports of Alaska pollock will hamper U.S. development of its Alaska pollock fishery. Japan, however, may not be eager to remove these barriers. Japan's fishing industry is highly dependent on its catch of pollock in the U.S. zone, and its participation in this fishery is contingent upon continued lack of interest in the fishery on the part of U.S. producers. Pollock contributes substantially to Japan's total fisheries production. It is the leading species in Japan's catch, by weight, and ranks second in value. During the 3 year period 1975-1977, annual pollock catches by Japanese fishermen accounted for 24 percent of Japan's total catch, ranking well ahead of mackerels, herring, tunas and other important species. Pollock also accounted for close to 7 percent of the value of Japan's total catch, ranking second to albacore (Table 16).

Japan's Primacy as a Market for U.S. Alaska Pollock

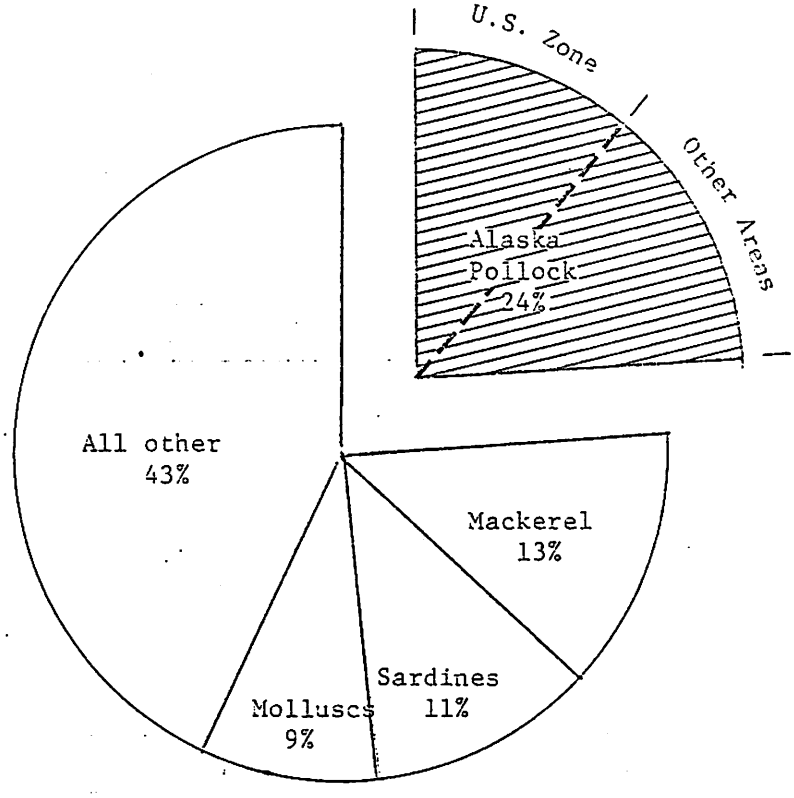
The degree of Japan's dependency on the U.S. zone for Alaska pollock is evident in its reported catches in the Eastern Bering Sea in particular, and also in the Gulf of Alaska. Based on NMFS data, it appears that Japan's Alaska pollock catches off Alaska, may account for nearly one half of the total Japanese catch of Alaska pollock, as the following data indicate: 4/

4/ These data are obviously not comparable with data published by FAO which indicates that for 1976 and 1977, respectively the Japanese catch of Alaska pollock in the Northeast Pacific was 34 percent and 30 percent of Japan's total catch of Alaska pollock.

FIGURE 8

Alaska pollock accounts for one-fourth of Japan's total marine fisheries catch

Distribution of Japan marine fisheries catch,
By major species, average 1975-1977
(total = 9,624,350 metric tons)



Source: Table 16

Japan's Catch of Alaska Pollock 1977

Area of Catch	Thous. m.t.	Source:
U.S. Area:		
Bering Sea	869	NMFS
Gulf of Alaska	42	NMFS
Total U.S. Area	911	
All Areas	1,931	Gov't. of Japan
% U.S. Area of All Areas	47.2%	

Japan is also dependent on fishing grounds off the USSR for part of its supply of Alaska pollock, and the remainder (about one-third) comes from its own coastal and offshore grounds.

In brief: Japan can supply only a relatively small part of its demand for pollock from its own coastal and offshore fisheries. Much of Japan's distant water supply of pollock comes from its operations in fisheries in the U.S. zone, where U.S. fishermen enjoy preferential rights, through FCMA. U.S. industry, therefore, has an opportunity to harvest a vast resource for which there is an established market in Japan. However, Japan's quota restrictions on importations of Alaska pollock will help to assure that U.S. industry will not exercise its option to harvest Alaska pollock.

Japan represents the best opportunity for U.S. industry to market Alaska pollock abroad. The USSR for example, appears to be nearly self sufficient in Alaska pollock, as the figures below indicate:

USSR Alaska Pollock Catch, 1977

	Thous. m.t.	Source
U.S. Area:		
Bering Sea	64	NMFS
Gulf of Alaska	42	NMFS
Total U.S. Area	106	
All Areas	1,975	
% U.S. Areas of All Areas	5.4%	

Also, trade ties between the United States and the USSR are minimal, in contrast to Japan which is the United States' largest trading partner, as indicated in the following data for 1977:

	U.S. Mdse. Exports to:	U.S. Mdse. Imports from:
	(Million dollars)	
Japan	10,522	18,623
USSR	1,628	234

SOURCE: USDC, Statistical Abstract of the United States

The Republic of Korea is a potential market, for much the same reason as Japan--its dependency on distant water fisheries for its supply of Alaska pollock. Korea has harvested between 400,000 and 500,000 metric tons of pollock annually in recent years. About 20-25 percent of Korea's total catch of pollock has been in the U.S. zone and another 60 percent or so in other distant water fisheries, including USSR areas from which it is now excluded. A substantial part of Korea's pollock catch is earmarked for export products. About 80,000 tons of Alaska pollock (live weight) manufactured into blocks has been shipped to the United States annually, which would put Korea's domestic consumption of Alaska pollock roughly in the 350,000 to 400,000 ton range--sizeable, but well below the volume consumed in Japan.

Potential for Development of the U.S. Market for Alaska Pollock

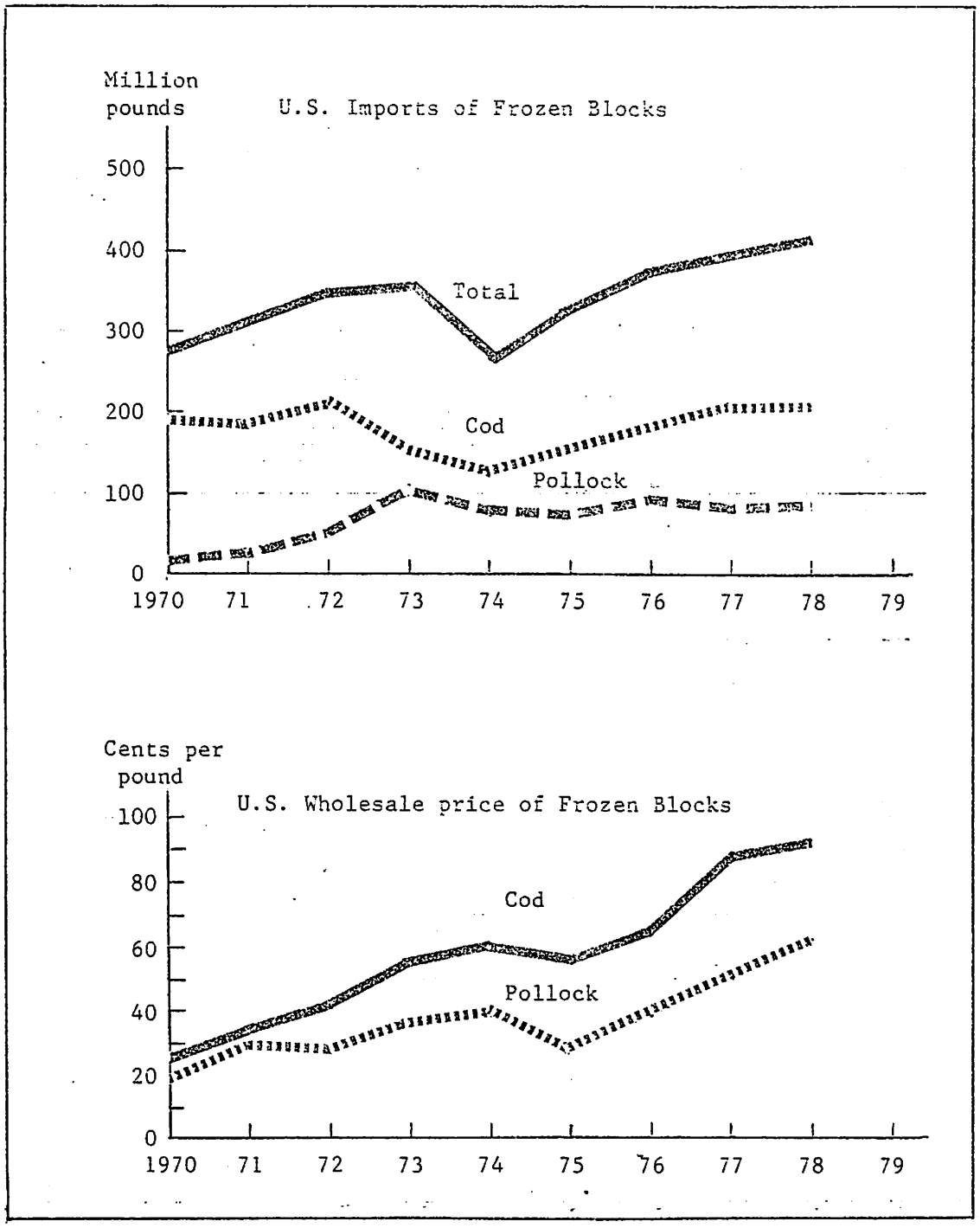
Japan's restrictive policy on pollock imports looms large also in light of the limitations of the U.S. domestic market for Alaska pollock. There is a market in the U.S. for pollock blocks, but these compete with other more preferred blocks, especially those produced from cod which command a much higher price (Table 17). In 1978, about 81 million pounds

of pollock blocks were imported into the United States (which were produced from about 120,000 metric tons of whole pollock), compared with 205 million pounds of cod blocks. Pollock blocks, accounted for only about 20 percent of all block imports, by volume, and 15 percent, by value. In the three previous years the pollock share of total block imports (by weight) ranged between 22 percent and 25 percent. Also, during the period 1975-1978, total imports of all types of blocks increased 30 percent while pollock blocks alone increased only 9 percent (Table 18).

There is small likelihood that pollock will penetrate further into the U.S. block market. In the Combs report on the prospects for Alaska bottomfish development, it was noted that "the opportunity for a large scale substitution (of pollock blocks for cod) appears unlikely." Combs reported that "U.S. produced Alaska pollock blocks will generally only substitute for other pollock blocks on the market, to a total of 125.7 million pounds annually." Translated into live weight, Combs' expectations tell us that the U.S. block market can absorb less than 200,000 tons of U.S. caught Alaska pollock annually. The figure is less than 17 percent of the combined optimum yield recommended by the North Pacific Council for Alaska pollock in the Bering Sea-Aleutian and Gulf of Alaska areas. Combs did not take into account the possible utilization of the minced flesh of pollock into frozen "convenience" items, such as croquettes, cakes, patties, etc. but even this market has its limitations. According to NMFS reports, about 27 million pounds of these products were marketed in the United States in 1977. Even if this market could be doubled over the next few years, and all of the

FIGURE 9

COD IS MUCH PREFERRED OVER POLLOCK IN THE U.S. BLOCK MARKET



Source: Tables 17 and 18

products would be based on pollock (which is not likely), the amount of raw whole pollock that would be required would total only about 75,000 tons. Add this to the 200,000 tons that could go into blocks, and the total amounts to only 23 percent of the Alaska pollock fisheries optimum yield.

Demand limits for pollock in the U.S., compared with substitute items, constrain prices and this dims the profitability outlook for prospective U.S. processors of Alaska pollock for the U.S. market. One recent study (Martin, 1978) noted that at the prevailing wholesale pollock block price in December, 1977 ($.68/lb.), processors could break even only if they paid no more than $.07 per pound for raw whole pollock. This is considerably below the $.10 per pound price that the Combs report indicates will be required for a U.S. vessel to target profitably on Alaska pollock. Another (unpublished) study's provisional results (Stokes, 1979) show that at 1978 wholesale prices, production of Alaska pollock by U.S. harvesters and processors would yield negative returns. Combs also reported that "shoreside processing plants . . . which process a large percentage of pollock are marginally profitable without including the high grade and speciality products." Combs further reported that catcher/processor vessels targeting on pollock (and producing for both the U.S. and Japanese markets) could expect a return on capital of only about 4.5 percent--or 8.3 percent if other groundfish were included along with pollock.

In summary, what the data and recent analyses reveal is that producing Alaska pollock for the U.S. domestic market is not an altogether attractive option for U.S. harvesters and processors. The profitability outlook is at best modest, and in any case the market will take only a relatively small proportion of the output the fishery is able to sustain. The more attractive market lies, potentially, in Japan, but this market under present Japanese policy is virtually closed to U.S. industry.

Demand for Fishery Products in Japan

The magnitude of demand for pollock in Japan--and Japan's potential as a market for U.S. caught pollock--is derived from the strong preferences Japanese have for fishery products in their diet. Per capita, the Japanese consumed an estimated 78.9 pounds of fishery products in 1977, one of the highest rates in the world (Table 19). This compares with 12.3 pounds in the United States, about 25 pounds in the USSR, 42 pounds in Norway, 16 pounds in the UK and 41 pounds in the Republic of Korea, to cite a few examples. Consumption of fishery products in Japan, moreover, is rapidly increasing. Since 1970, there has been a 30 percent increase in total consumption, with population up only about 10 percent (Table 20, 21). Japan consumes close to 15 percent of the world's supplies of fish and shellfish, which is more than double the portion consumed in the United States (Table 22).

The Japanese appetite for fishery products is traditional, but it has also been fed in recent years by rising incomes generated by a strong and growing economy. Among the industralized nations of the world,

3/

Japan has been the frontrunner in economic growth measured by changes in Gross National Product (GNP). Between 1970 and 1978, Japan's "Real" GNP (adjusted for inflation) increased an average 5.3 percent annually. Comparable GNP growth in the United States was 3.3 percent; in West Germany, 2.7 percent (Table 23). Only a few years ago, the Japanese were well behind Americans in discretionary income, but the gap has nearly closed. In 1978, per capita disposable income in Japan was $6,091, compared with $6,672, in the United States.

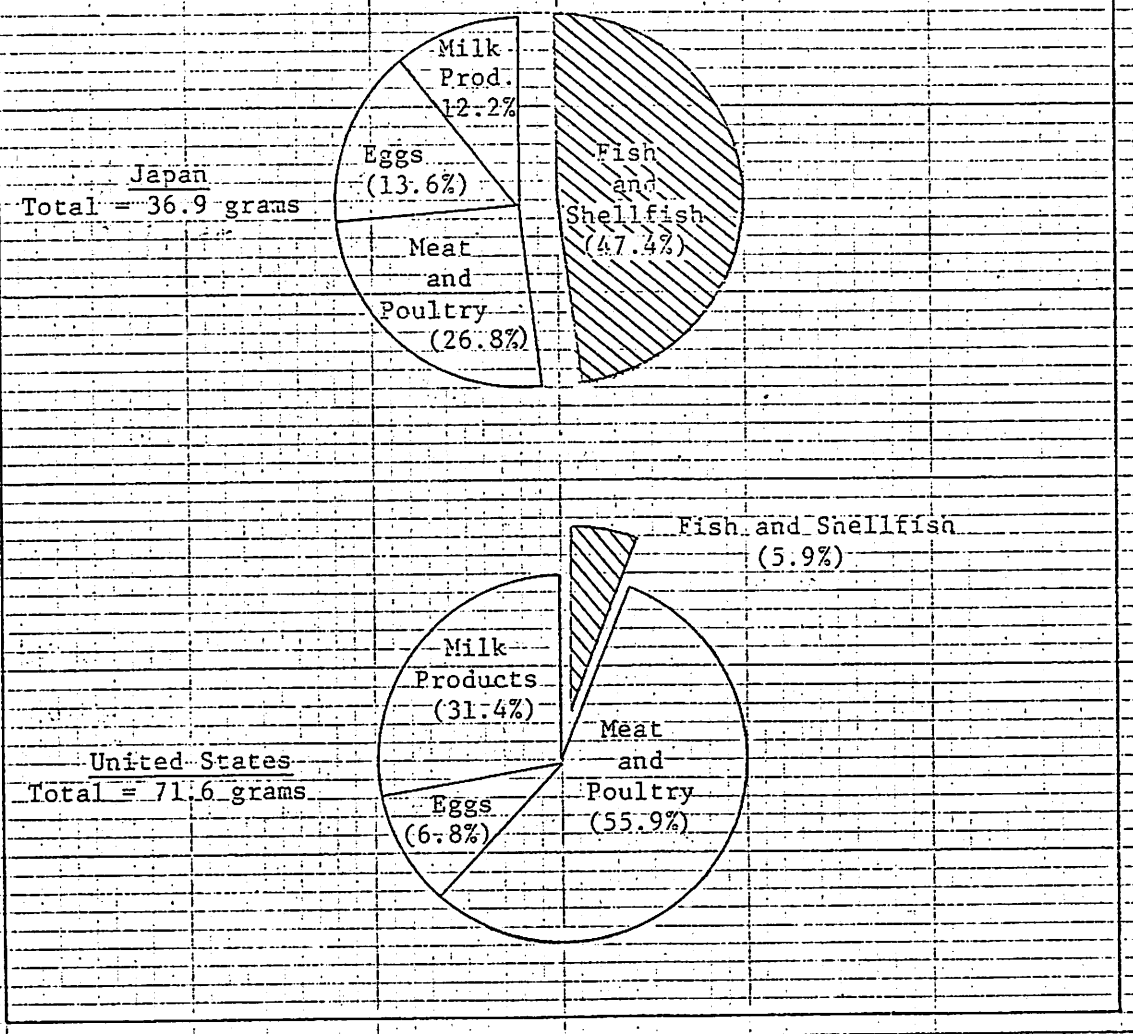
With larger incomes, Japanese have taken the opportunity to upgrade their diets through greater consumption of animal protein foods. Per capita consumption of fishery products and meat together grew 24 percent from 1970 through 1977. Consumption of meat increased faster than fishery products, but the disproportionate change barely diminished the relative importance of fishery products. In 1977, fishery products still accounted for nearly 75 percent of the total quantities of fish, beef, pork and chicken consumed in Japan (Table 19). In the United States, fishery products account for only about 6 percent of the aggregate consumption of comparable fish, meat, and poultry products.[5/] Fish and shellfish products also supplied over 47 percent of the per capita per day animal protein intake in Japan, compared with 6 percent in the United States (Table 24) (Figure 10).

5/ It is interesting to note that Japan's per capita consumption of fish and meat, in 1977, totaled 106 pounds compared with 211 pounds in the United States (See Table 19).

Figure 10

Fishery Products Provide the Japanese with Nearly Half Their Average Daily Intake of Animal Protein

Percent Distribution of Japan and United States Per Capita Per Day Protein Intake



Source: Table 24

The strength of demand for fishery products in Japan is also reflected in sharply rising prices. Japan's Consumer Price Index (CPI) for fresh fish and shellfish increased 109 percent between 1973 and 1978, while food prices in general increased only 74 percent, and meat prices climbed 49 percent (Table 25) (Figure 11).

Products Forms Consumed in Japan

There are four basic fishery product forms consumed in Japan (Table 25). These forms, and the estimated percentage each represented of total consumption in recent years are as follows:

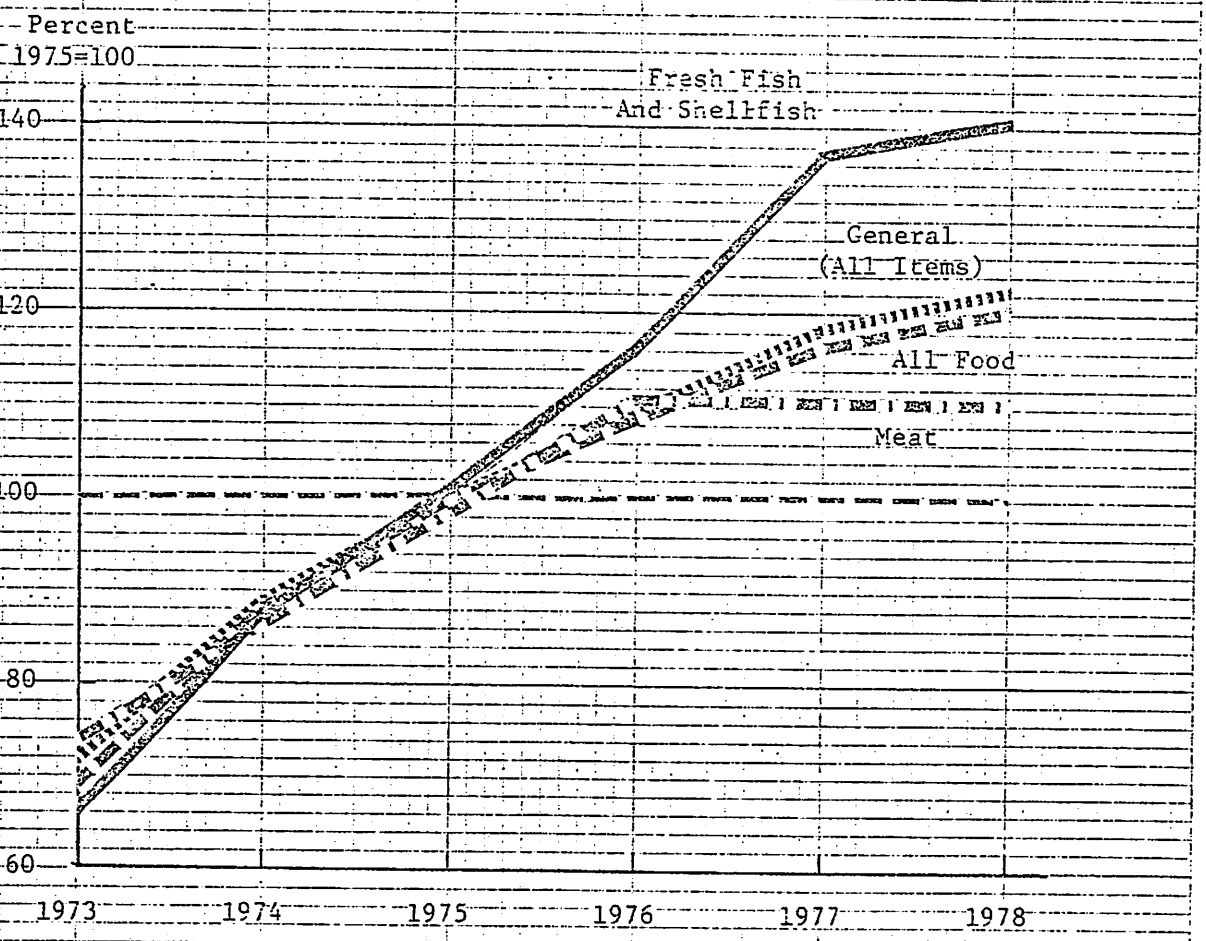
	1971	1974	1977
Fresh and Frozen	36%	39%	42%
Paste Products	40	35	31
Dried, salted, smoked	22	23	23
Canned	2	3	4
	100.0%	100.0%	100.0%

The consumption data show that fresh and frozen products have overtaken paste products as Japan's most popular fishery product form (Figure 12). Paste products are manufactured from surimi which in turn is produced almost entirely from Alaska pollock. The declining importance of fish paste products in Japan is consistent with the decline in Japan's catches of Alaska pollock. Also, rising incomes among the Japanese probably have induced some substitution of higher priced fresh and frozen, and other forms, for the lower-priced paste products. Household expenditures for "Processed Food", which includes the paste products, increased only 74 percent between 1973 and 1978, while expenditures for "Fresh, Salted

Figure 11

The Prices of Fresh Fish and Shellfish in Japan Have Increased Much Faster than Other Prices

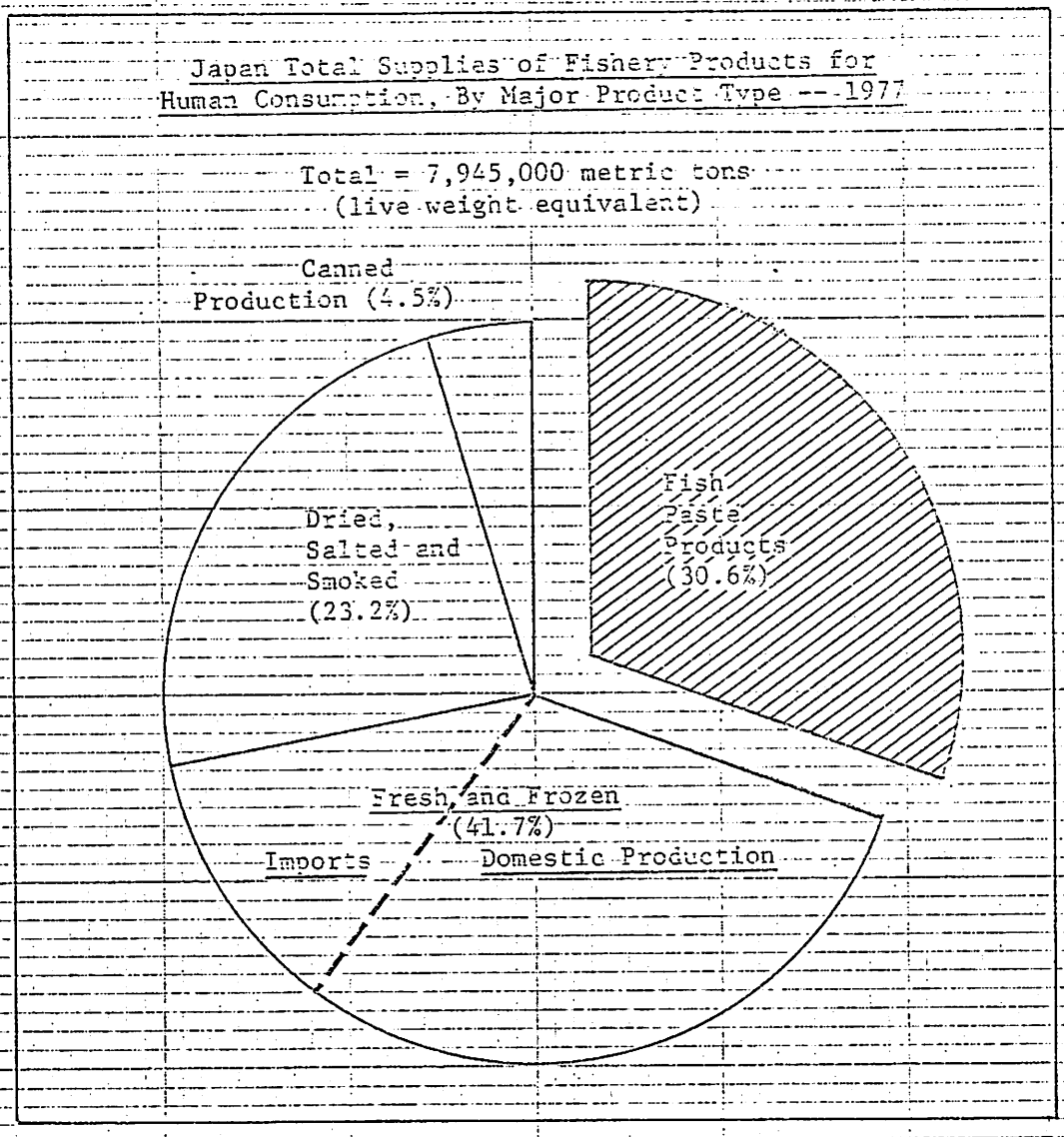
Japan Consumer Price Indexes: Fresh Fish and Shellfish, compared with the General Index-All Items, and Meat



Source: Table 24

Figure 12

Fish Paste Products (Made from Surimi) Account for Nearly One-third of Edible Fish Consumption in Japan



Source: Table 26

and Dried Fish and Shellfish" increased 86 percent.[6/] Interestingly, too expenditures on "Food Away From Home" increased 99 percent during the period, which is a likely factor in the apparent increase in demand particularly for fresh and frozen fish products (Table 27).

Demand and Price for Paste Products

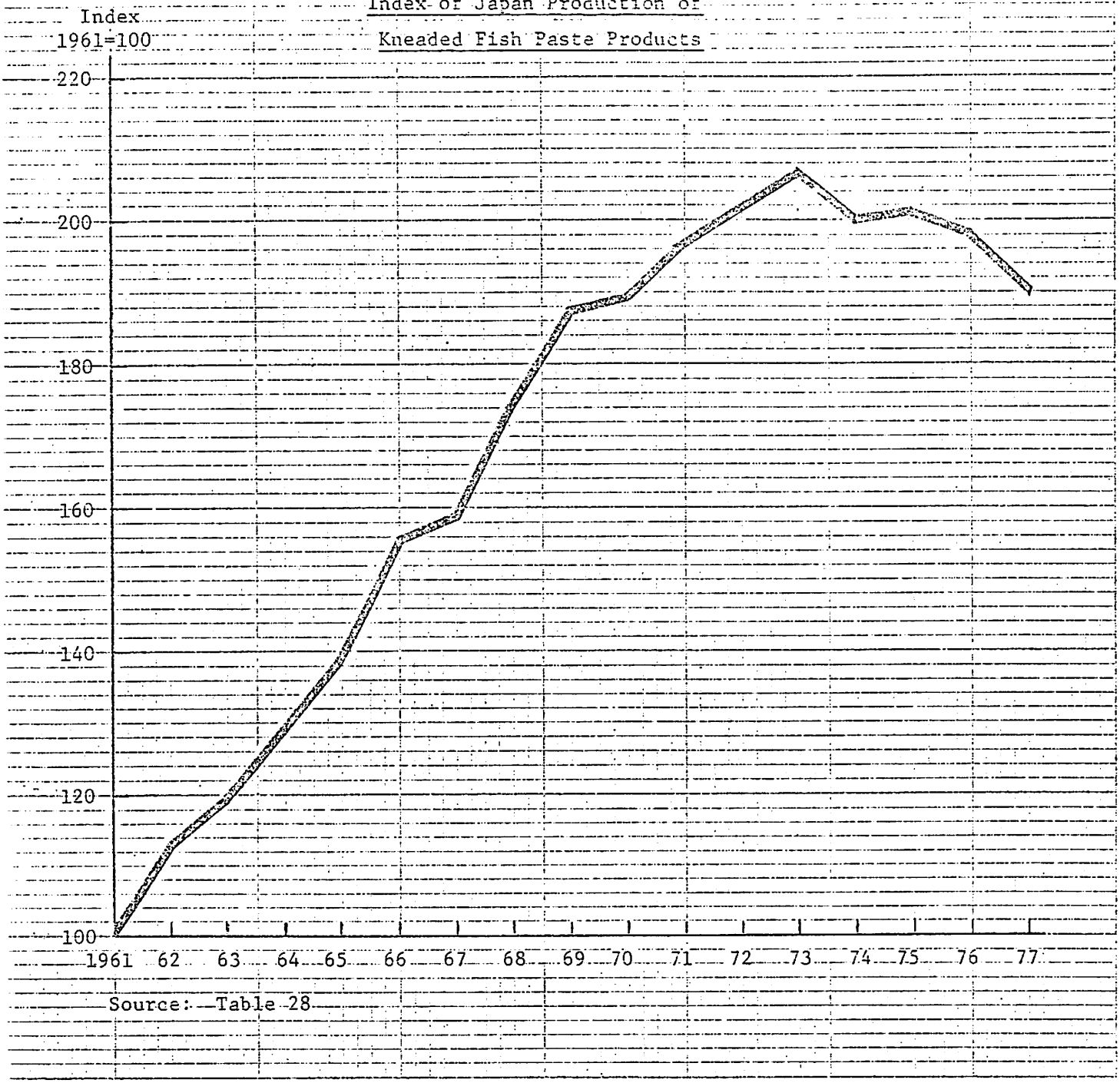
Although fish paste products are taking a lesser role in Japan's national diet, relative to other fishery products, production and consumption of the traditonal paste products are stable, and prices are increasing. Annual production of kneaded fish paste products, which include "Chikuwa" (a baked product), "Kamaboko" (a steamed product) and others, has varied little since 1970, ranging between 1.081 and 1.188 million tons (product weight). (Table 28) (Figure 13). Prices have been increasing as fast or faster than for other fishery products which is an indicator of continued demand strength for the paste products (Figure 14).[7/] The average wholesale price of "processed" fishery products (which include the paste products) climbed 115 percent from 1972 to 1978, more than matching increases in the average prices paid for "fresh" fish (111 percent)

6/ The Japanese earmark a substantial portion of their personal budgets for food. Data for 1976 show that 32.3 percent of personal consumption expenditures in Japan was for "Food, Beverages, and Tobacco", compared with 22.2 percent in the United States. (See Table 46).

7/ Comparisons of relative price changes between various fishery products in Japan should be made in light of supply changes. Supplies of paste products have, at best, been stable, while supplies of some other fishery products, have increased. For example, wholesale supplies of "Frozen" fishery products in Japan increased 19 percent between 1972 and 1978, while supplies of "Processed" fishery products increased about 8 percent.

Figure 13

Production of Surimi-Based Fish Products in Japan has Leveled Off

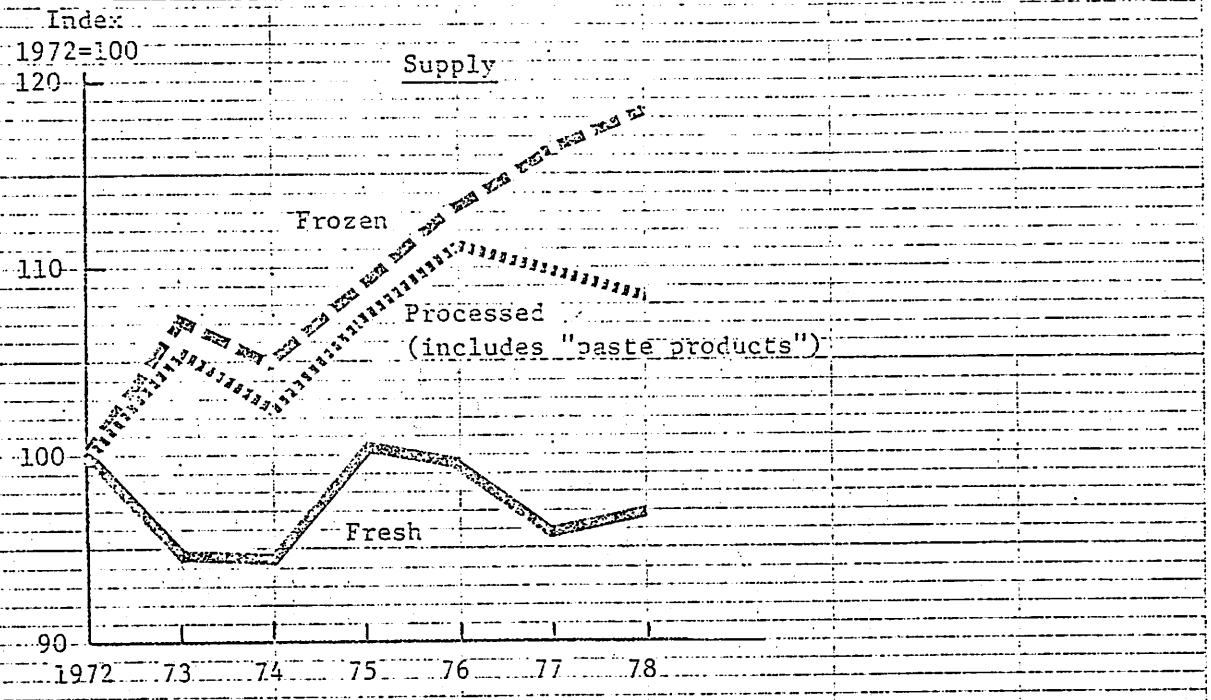


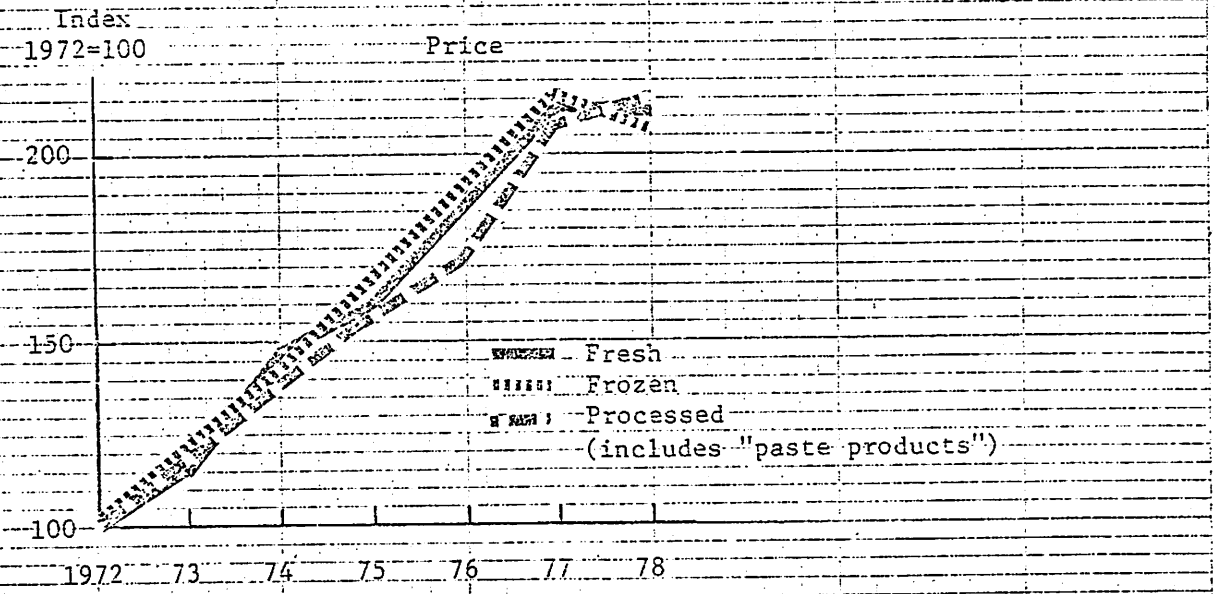
Source: Table 28

Figure 14

Supplies of Frozen Fishery Products in Japan are Increasing While Supplies of Processed and Fresh Have Stabilized -- Prices of All Three, However, Have Increased Sharply

Index of Wholesale Supplies and Prices of Fresh, Frozen and Processed Fishery Products





Source: Table 29

and "frozen fish products" (108 percent) (Table 29). Retail prices for two out of the three most popular fish paste products also have been rising faster than the prices of many other important fishery products, and faster than meat prices, as well (Figure 15). Paste products, however, are much less expensive than most other fishery items. The following data compare average retail prices per pound for various fishery and meat products in Tokyo for the period January through April 1979. The data also compare the percentage changes in price from the 1973 (full year) average to the January - April 1979 average, in terms of both the yen price and the equivalent dollar price (based on conversion rates in effect in the designated year):

TOKYO RETAIL PRICES

Product	Dollars/pound-Average for Jan.-Apr., 1979	% Change in Price, 1973 to Jan.-April, 1979	
		dollar price *	yen price *
Fish Paste Product:			
"Satsumage"	$1.47	+227%	+148%
"Chikuwa"	1.67	+198	+124
"Kamaboko"	2.15	+ 40	+ 5
Tuna	7.90	+157	+ 90
Salmon	5.06	+193	+117
Mackerel	.87	+ 93	+ 44
Saury	2.28	+140	+ 79
"Mirinboshi"	6.00	+241	+153
Cuttlefish	3.43	+351	+233
Beef	6.83	+108	+ 57
Pork	3.29	+ 77	+ 34
Chicken	2.20	+ 75	+ 25

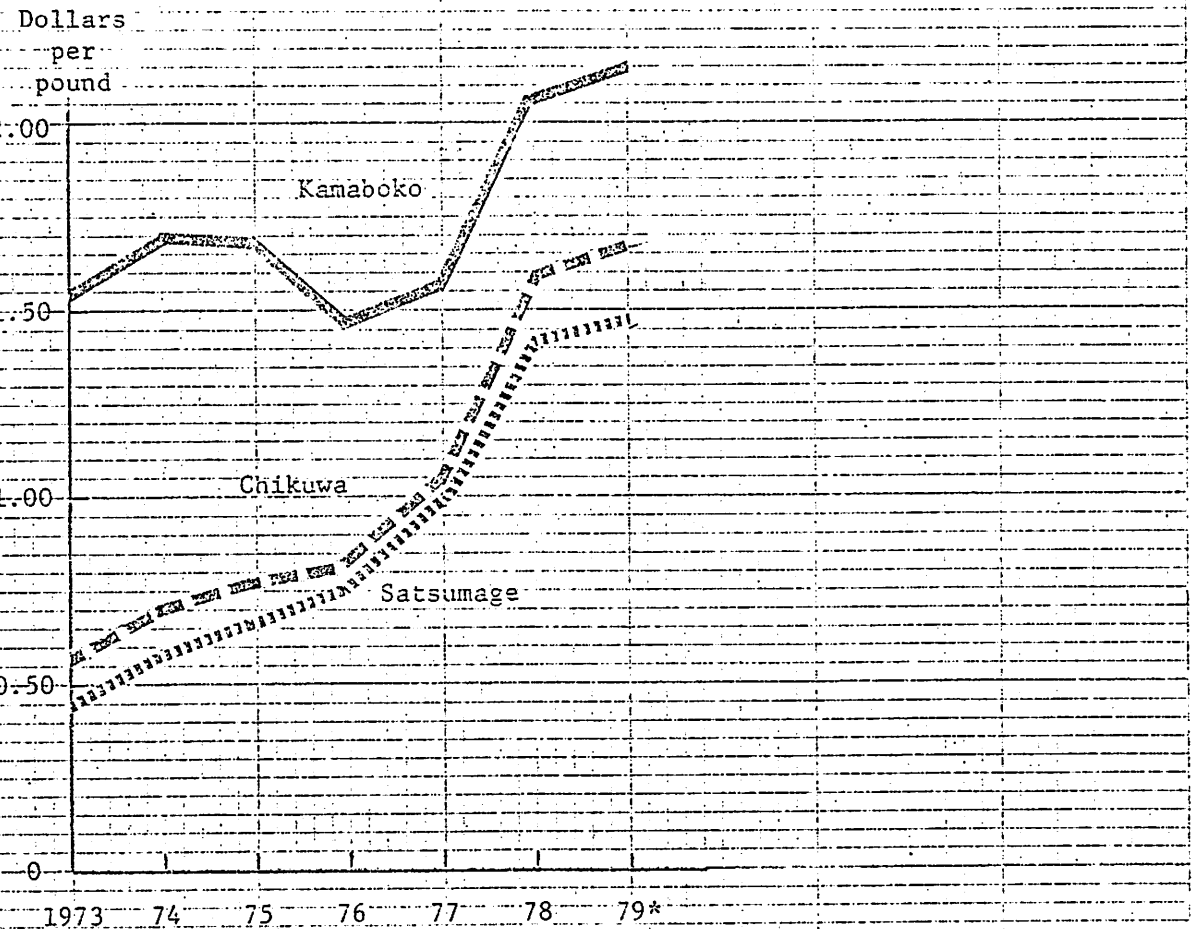
* Variations between yen price changes and dollar price changes reflect the decline in yen/dollar exchange rates.

SOURCE: Tables 30, 31, 32.

Figure 15

Retail Prices of Fish Paste Products -- Made from Surimi -- are Rising Sharply

Tokyo Retail Prices of Fish Paste Products



* January - April

Source: Table 30

Pollock and Surimi Prices and Supplies

The rise in prices for fish paste products (made from surimi) has been paralleled by substantial gains in exvessel prices for fresh Alaska pollock at Japanese ports (Figure 16). About 99 percent of surimi is manufactured from pollock. From 1975 to 1978, the price of fresh pollock landed at Japanese ports rose from 27 yen/kg to 71 yen/kg. In dollar equivalents, the price went from $.04 per pound to $.15 per pound (Table 33). Fresh pollock landed in Japan is processed into surimi at shore plants, which produce a lower grade (and lower priced) product than surimi that is processed at sea.8/

Exvessel prices for fresh pollock dropped slightly in the first half of 1979, in face of a heavy inventory buildup (that was later reduced). There was also apparent consumer resistance to the hike in the price of fish paste products.9/ Pollock caught and processed at sea, however, brought higher prices in 1979 than a year earlier. In an arrangement with the Soviets, the Japanese agreed to pay about $.10 per pound for 65,000 metric tons of Soviet-caught Alaska pollock offloaded on a Japanese factory ship. This was 40 percent above the negotiated 1978 price for the same quantity.

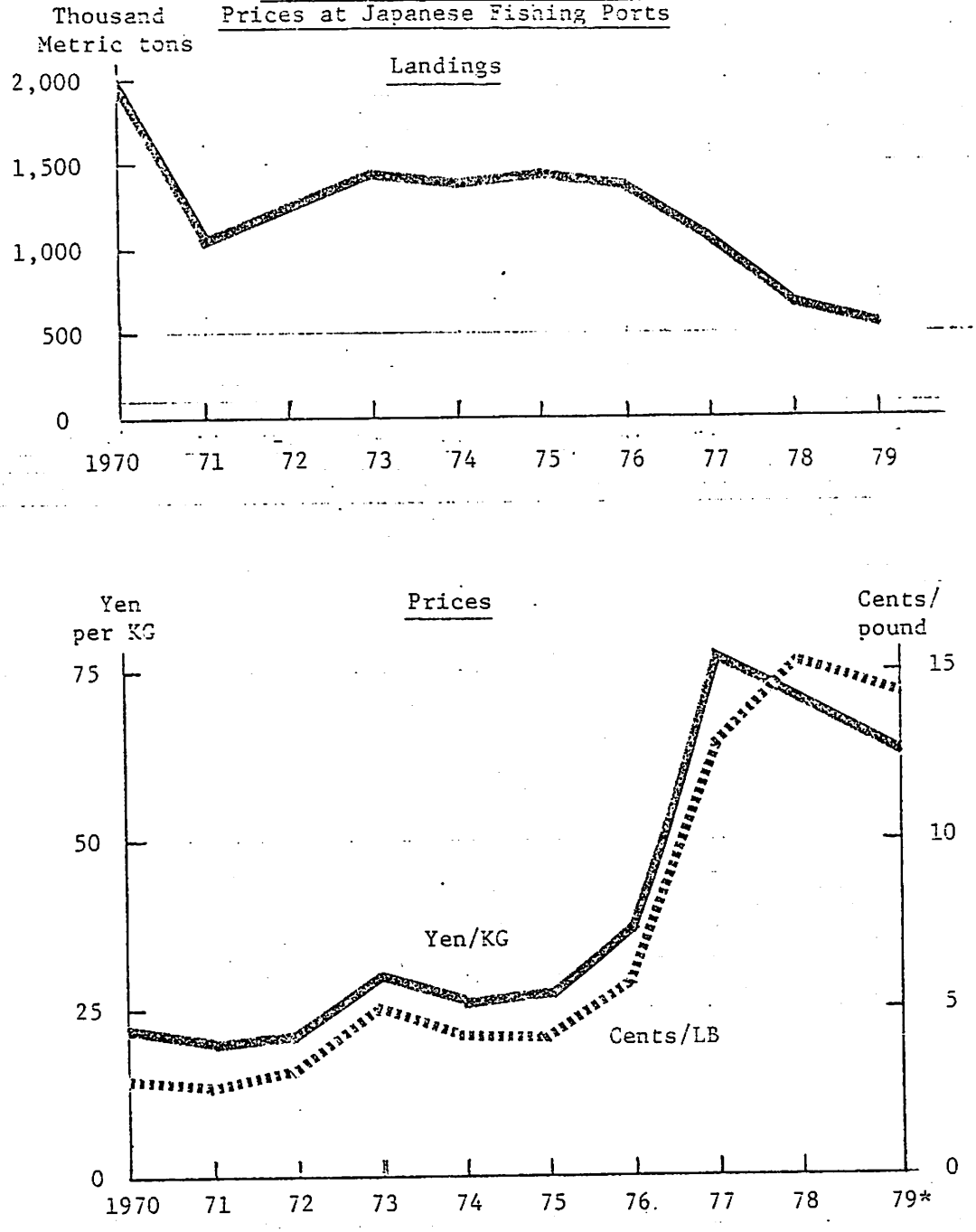
8/ Data for 1974 show that 57 percent of pollock landed at fishing ports is processed into paste products. About 12 percent goes into other food products, 19 percent is processed into oil and meal and 13 percent is consumed in the port regions (product form unknown). (see Table 35).

9/ Carryover holdings of frozen pollock surimi from 1978 into 1979 totaled 124,735 m.t., compared with 106,080 m.t. a year earlier. By September 1979, however, holdings dropped to 83,811 m.t. compared with 126,552 a year earlier.

Figure 14

Alaska Pollock Landings in Japan have Dropped Sharply since 1976 and Exvessel Prices have more than Doubled

Alaska Pollock Landings and Prices at Japanese Fishing Ports



*—12 Months ended June 30, 1979
Source: Table 33

Also, during the fall of 1979, landings of Alaska pollock caught by Japanese fishermen in the Soviet zone brought prices as high as $.17 per pound.[10/]

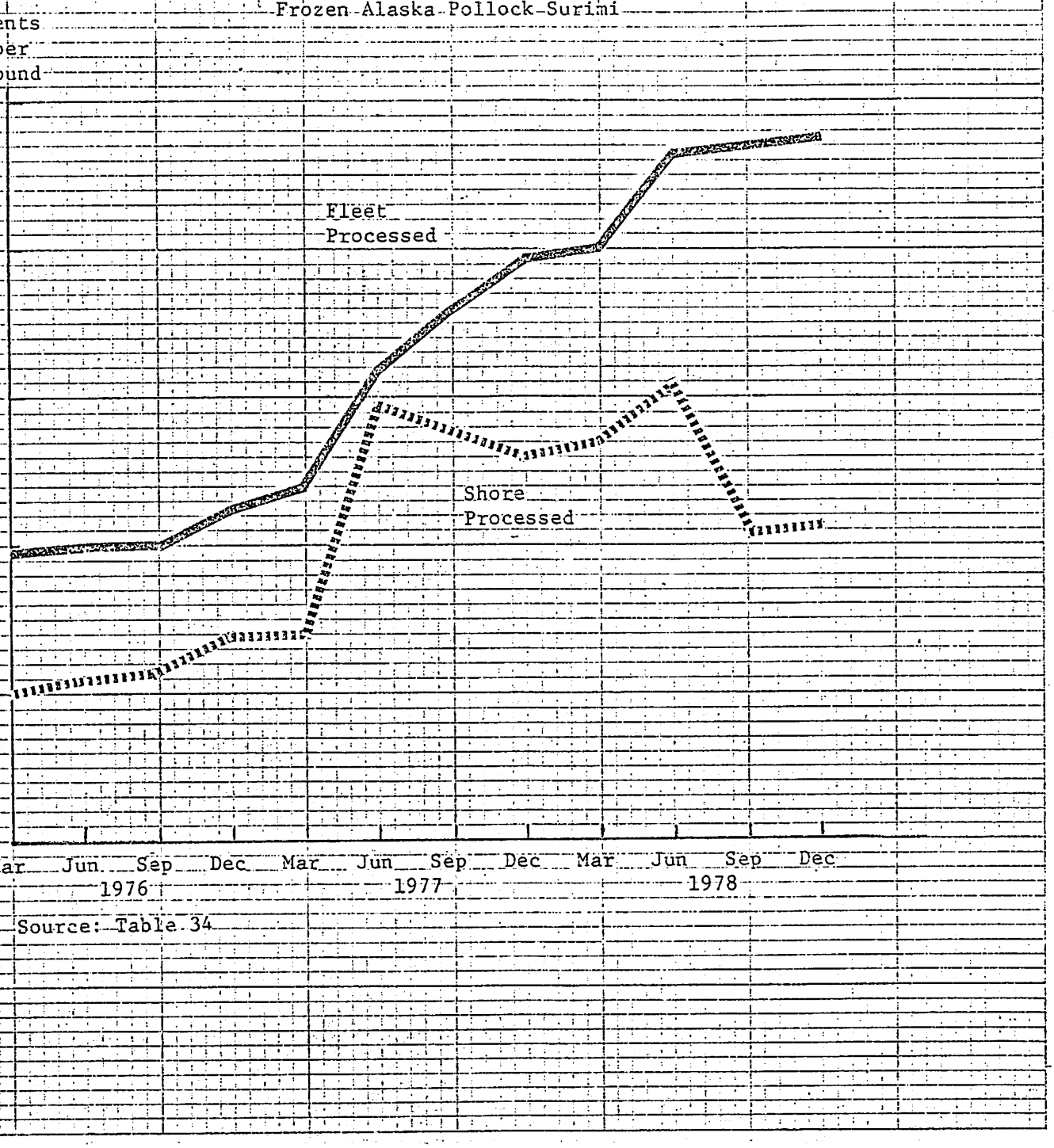
Wholesale prices for shore processed surimi climbed sharply in 1977, but then dropped slightly during 1978 (in yen values). However, the price of fleet processed surimi--the top quality grade--was up a substantial 15 percent (in yen) during 1978 (Figure 17). In dollar terms, fleet processed surimi brought $.92/lb wholesale in 1978, compared with $.63/lb in 1977. Shore processed surimi averaged $.51/lb in 1978, $.47/lb a year earlier (Table 34).

Rising prices for pollock, surimi, and surimi products in Japan reflect sharply reduced catches of Alaska pollock. From a peak of 3 million tons reached in both 1972 and 1973, Japan's annual pollock catch has dropped well below 2 million tons. The bulk of the Japanese catch of Alaska pollock is taken in "distant" water fisheries off Alaska and the USSR. Declining abundance of Alaska pollock in these fisheries in combination with quotas now enforced by the United States and the USSR in their respective 200-mile zones, contributed to the sharp decline in catches. Japan's coastal and offshore fisheries are providing more pollock than in the early 1960's, but these fisheries still only contribute about one-third to the total pollock catch (Table 36).

10/ Pollock catches in the Soviet Zone have a substantial proportion of fish with roe, which bring double to triple the price of pollock without roe. Only about 5 percent of pollock caught in the U.S. zone are with roe.

Figure 17

The Wholesale Price of Shore Processed Surimi has been Relatively Steady, but Fleet Processed Surimi Prices Continue to Climb



Source: Table 34

Smaller pollock catches have resulted in a cutback in surimi production. In 1978, surimi production by factory ships operating in distant waters was down more than one-third from earlier year peaks. Total production on land and sea was close to 20 percent below peak (Table 37).

Japanese producers are seeking alternatives to pollock for making surimi, but the prosepcts are limited. Croaker, for example is an excellent substitute--it is even preferred over pollock--but supplies are declining and are insufficient in any case. The Japanese catch of croaker in 1977 was only 40,439 tons, down from 86,000 tons in 1967. The croaker catch, moreover, is equal to only about 2 percent of the pollock catch. Other species are being tried, including Atlantic blue whiting, Atka mackerel, Pacific sardine, and other mackerel, but this effort is mostly experimental. It is therefore reasonable to conclude that now and in the forseeable future only pollock will sustain surimi production at its present or higher levels.

Dependence on Distant Water Fisheries

Lacking suitable alternatives for pollock, Japan's future production of surimi will remain largely dependent on the U.S. and USSR Alaska pollock fisheries. These fisheries account for at least two-thirds of Japan's total pollock catch. Both areas, however, have yielded declining catches for Japan, with the sharper drop occuring in catches from the Soviet zone, as the following data indicate:

	Japan's Alaska Pollock Catches In:	
	U.S. Zone [11]	Soviet Zone [12]
	(000 m.t.)	
1974	1,283	1,344
1975	1,150	942
1976	925	716
1977	911	NA
1978	847	345 (allocation)*
% change 1974-1978	-34%	-74%

* Allocations were reduced to 300,000 m.t. in 1979 and 290,000 m.t. in 1980.

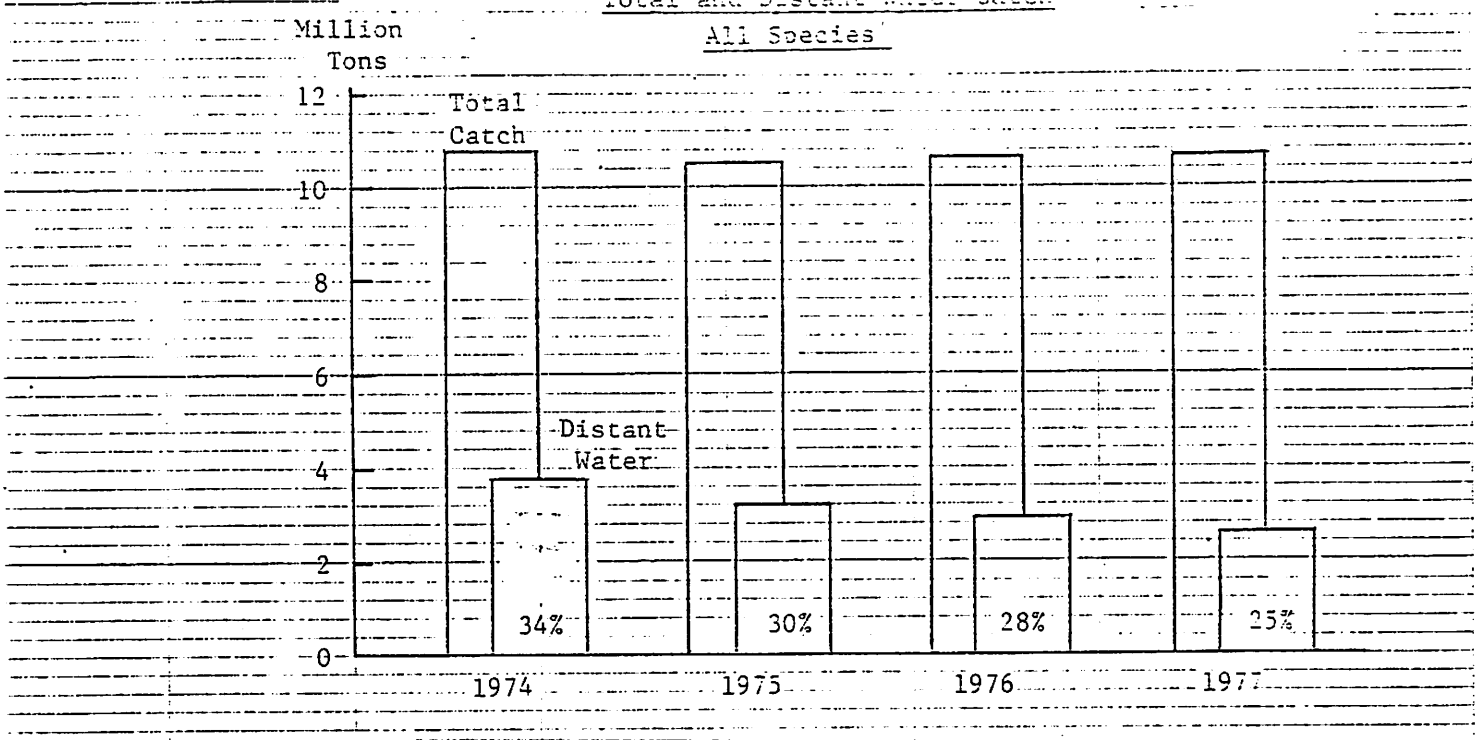
Alaska pollock make up a substantial part of Japan's important distant water catch of which over 40 percent is taken in the U.S. zone. The decline in Japan's Alaska pollock catches in the U.S. and Soviet zones has thus contributed to a sharp overall decline in Japan's distant water catches (Figure 18). From 1974 to 1977, total catches by Japan's distant water fleets dropped 29 percent, with Alaska pollock down 40 percent. Gains have been made in pollock and other catches in Japan's coastal and offshore fisheries, although the most recent data available show a sharp drop in pollock (Table 38) (Figure 19). In any case, these gains have not quite kept pace with the drop in distant water catches, and Japan's total fisheries catch has therefore failed to grow.

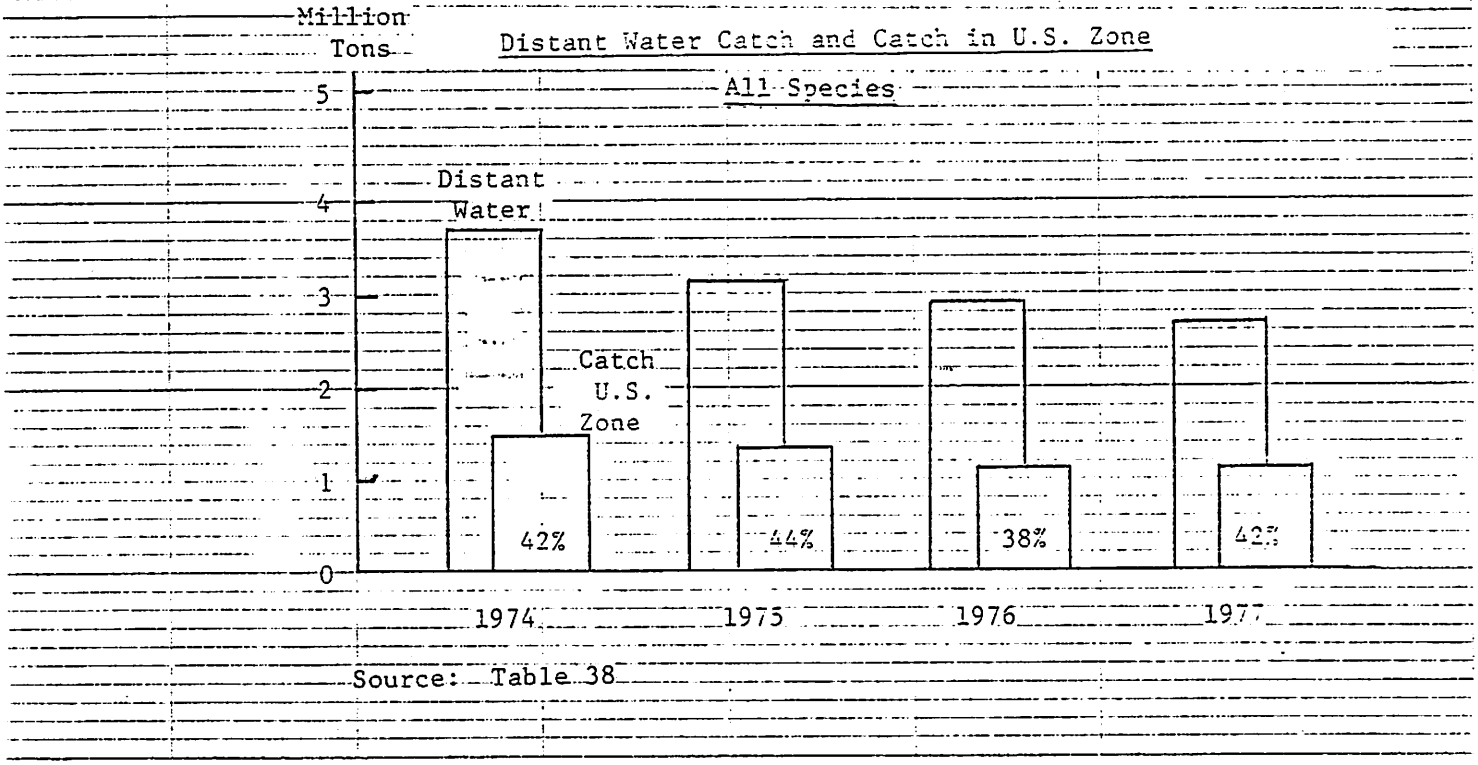
11/ NMFS data

12/ Estimated by subtracting Japan's reported Coastal/Offshore pollock catch, as published in "Fishery Statistics of Japan", from the FAO reported Japanese catch of Alaska pollock in the Northeast Pacific. The 1978 figure represents the Japanese allocation.

Figure 18

Japan's Distant Water Catches are Declining and Contributing Less to the Total -- Catches in the U.S. Zone, Although Dropping, Continue to Make Up More Than 40 percent of the Distant Water Catch



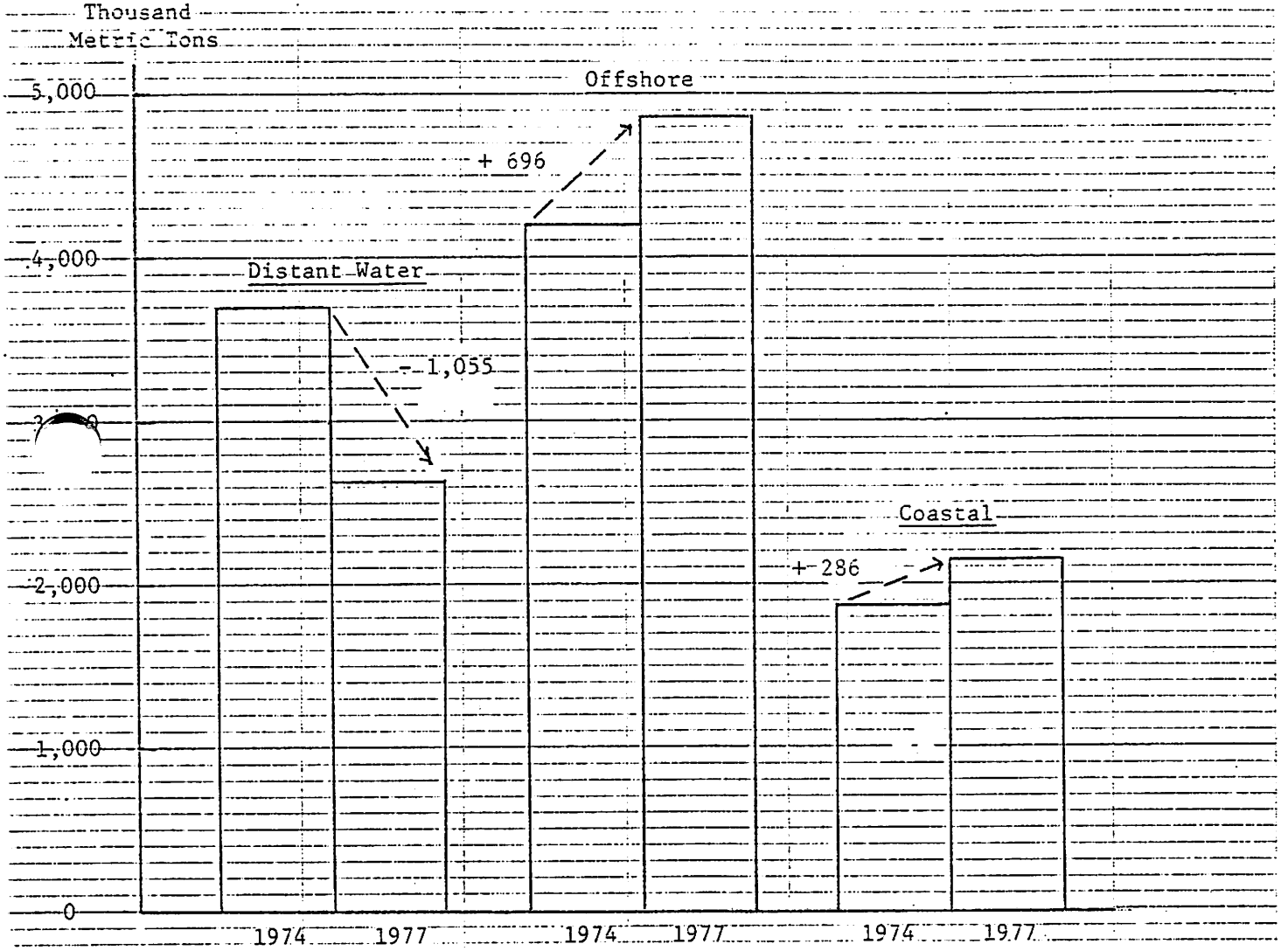


Source: Table 38

Figure 19

Japan's Distant Water Catches have Declined,
But Gains in Coastal and Offshore Catches
have Not Quite Made Up the Difference

Japan Fisheries Catch By Area
All Species



Source: Table 38

The gist of these facts about Japan's distant water fish catches is that declines began prior to formal declarations of extended jurisdiction by the United States, the USSR, and other nations in whose waters Japan has carried out extensive fishing operations. With the various 200 mile laws in place, there can be little expectation of Japan increasing its distant water catches, for pollock, or for most other species. Nor, do the data indicate, will production by coastal and offshore fisheries make up what will be a growing differential between domestic production and total demand for fishery products.13/

The Growing Role of Imports

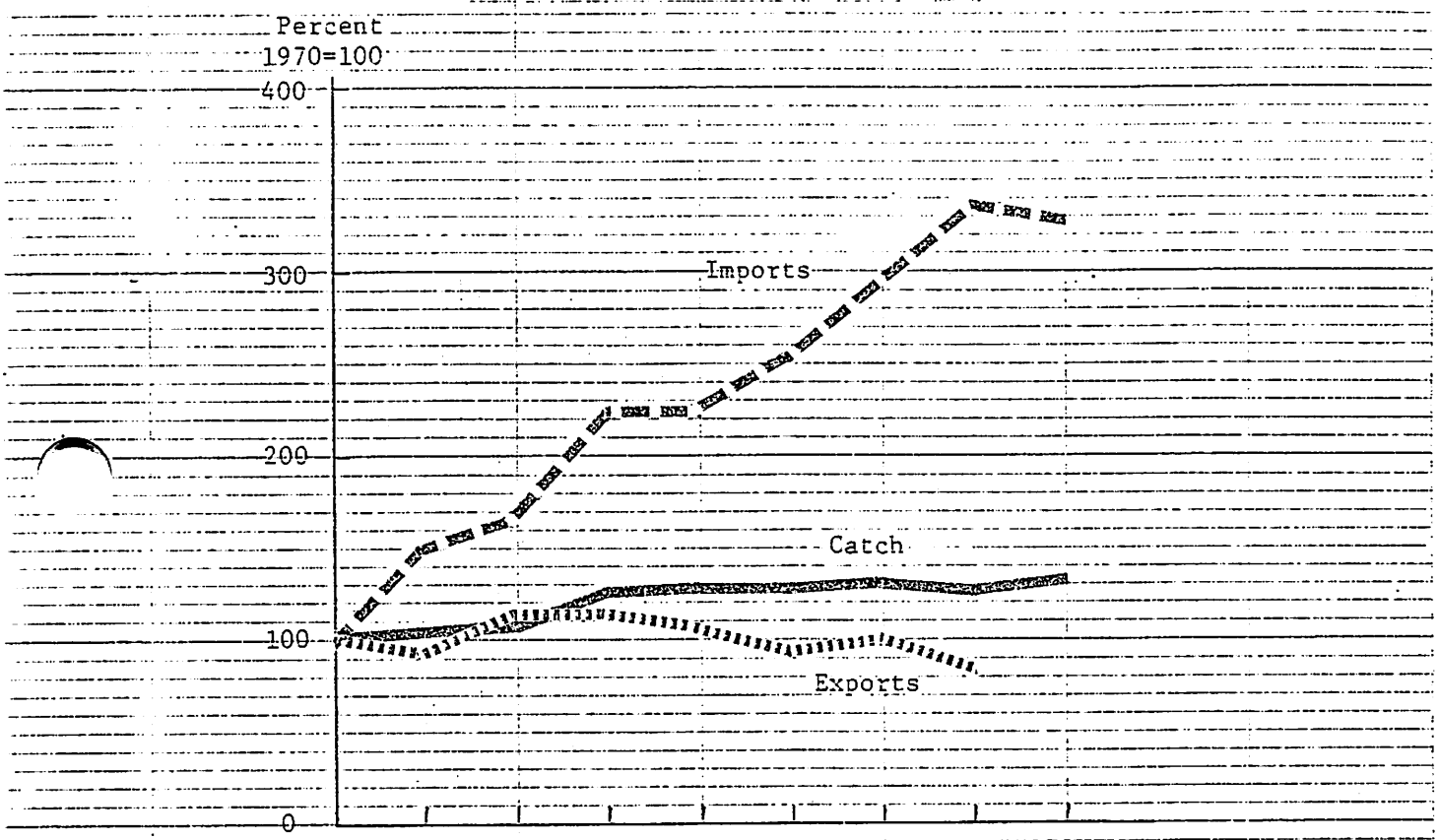
An obvious answer to the lack of growth in its fish and shellfish catches, and one which Japan has already adopted is to increase imports of fishery products (Figure 20). Since 1970, Japan has gone from a net exporter of fishery products to being a net importer. In the 12 month period ending August 30, 1979, Japan imported $4.91 in fishery products for each $1.00 exported. Japan's total deficit in its balance of trade in fishery products during the period was $3,271 million (Table 40). Imports are becoming an increasingly important contributor to Japan's domestic supplies. In 1974, the quantity imported made up 8 percent of Japan's domestic supplies of fishery products. By 1977, the import share had climbed to 18 percent (Table 41). Imports from 1974 through 1977 increased at a rate of more than 30 percent per year in terms of both value and

13/ The Government of Japan has estimated that by 1985, Japan's domestic production of fish for food use will fall 6 percent short of domestic demand, while fish for non food use will be 17 percent short of demand. (See Table 39).

Figure 20

Lacking Growth in Domestic Catches, Japan has Relied Increasingly on Imports to Satisfy Domestic Demand for Fishery Products

Index of Japan's Sources of Supply of Edible Fish and Shellfish



Source: Table 20

quantity, and from 1977 through most of 1979, the annual rate of increase in the dollar value of imports has been about 24 percent. Japan's Ministry of Agriculture, Forestry and Fisheries has predicted that, by 1985, imports will have tripled over 1977 levels.

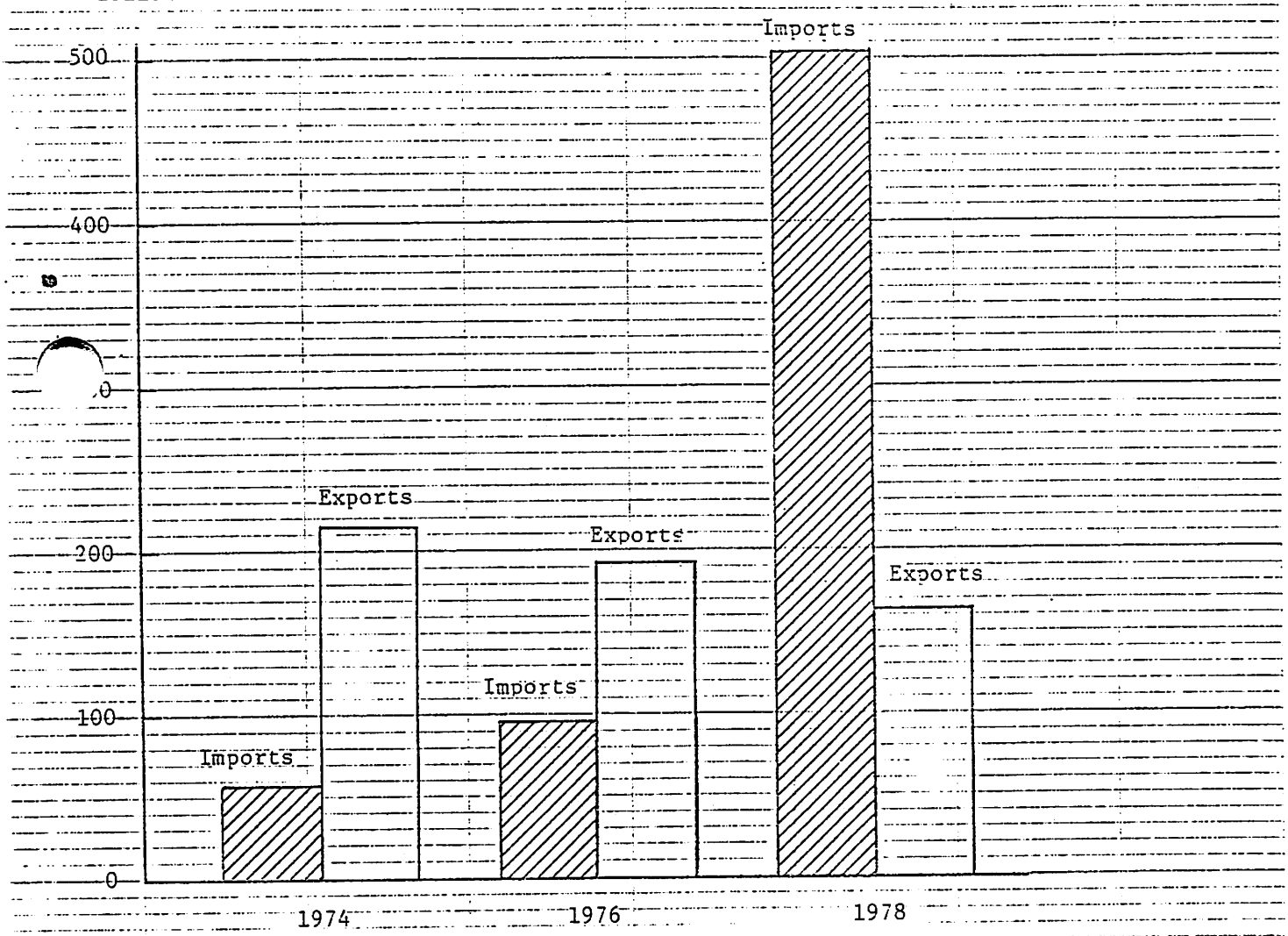
The United States has figured importantly in Japan's growing dependence on imports of fishery products. From 1974 to 1978, the value of Japan's fishery product imports from the United States increased tenfold, from $56 million to $503 million. In the same period, exports to the United States dropped from $214 million to $162 million. Thus, in 1978, Japan imported $341 million more in fishery products from the U.S., than was exported (Figure 21). The United States is now the single most important country of origin for Japanese imports of fishery products (Figure 22). A major impetus for the change, other than Japan's need to satisfy domestic demand, was the sharp drop in the value of the dollar vis-a-vis the yen (Figure 23). The exchange rate dropped from 292 yen per dollar in 1974 to 210 yen per dollar in 1978. This, of course, lowered the price of U.S. goods to Japanese in terms of yen, and raised the price of Japanese goods to Americans, in dollar terms[14/] (Table 42).

14/ The decline in the yen/dollar exchange rate began in 1971. The rate dropped steadily through the first quarter of 1979 when it began an upturn. As of the end of 1979, the rate had moved up to 240 yen/dollar. The drop in the yen/dollar rate has been in response to differential inflation rates between the U.S. and Japan (Table 44) and the huge merchandise trade surplus Japan has in trade with the U.S. (Table 45).

Figure 21

Japan's Imports of Fishery Products from the United States are Triple the Value of Its Exports

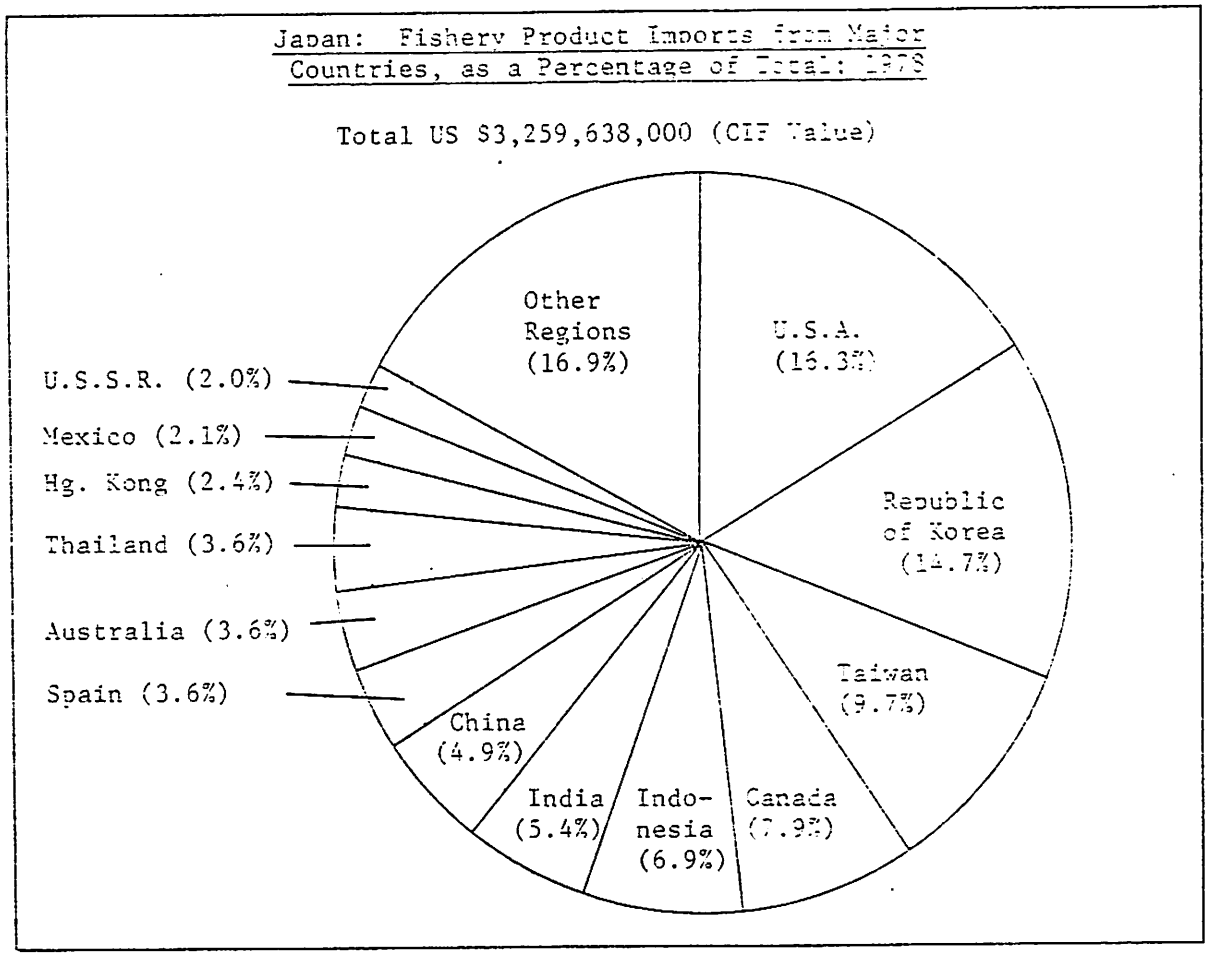
Japan Balance of Trade in Fishery Products with the United States



Source: Table 40

Figure 22

The United States is the Single Most Important Country of Orgin for Japan's Imports of Fishery Products

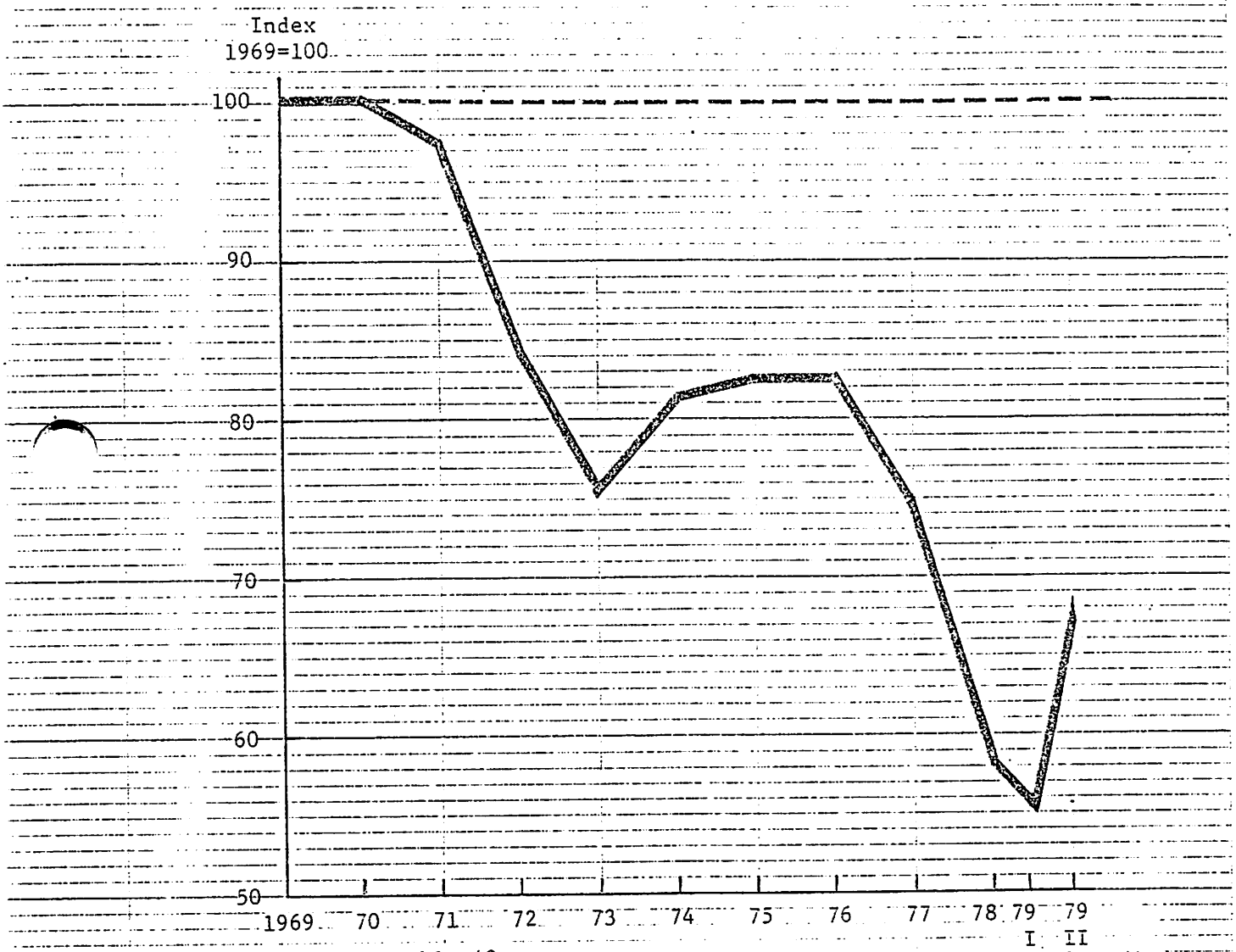


Source: Japan Marine Products Importers Association. Statistics, Tokyo.

Figure 23

The Dollar has been Depreciating Relative to the Yen since 1970, and Only Recently has Begun to Recover

Index of Yen/Dollar Exchange Rate



Source: Table 42

Pollock has been almost totally excluded from Japan's foreign trade in fishery products. As already noted, severe restrictions on pollock imports have held this trade down to a small quantity purchased from the Soviets for offloading on a Japanese factory ship at sea. The big gains in imports have been in shrimp, salmon, and salmon roes, which accounted for nearly half the increase in imports from 1976 to 1979 (Table 43). In particular, salmon trade with the United States has been a large contributor to Japan's increased imports, as indicated in the following data:

U.S. Exports of Fresh and Frozen Salmon to Japan

	thous. lbs.	thous. $
1976	4,275	6,791
1977	31,854	57,422
1978	87,679	197,008

SOURCE: NMFS, "Fishery Statistics of the United States"

Japan's growing demand for imported fishery products is not an isolated phenomenom. Japan's overall self sufficiency in foodstuffs has dropped to less than 75 percent in recent years, according to data supplied by the Japanese Government's Economic Planning Agency. Shortfalls are especially severe in domestic production of protein foods, such as milk and dairy products, meat, soybeans, and fishery products. Unlike fishery products, however, the Japanese Government predicts substantial gains in domestic production of other important protein foods over the coming years. For example, by 1985, Japan expects to become self sufficient in pork, poultry and eggs, and nearly self sufficient in milk and dairy

products. Domestic production of soybeans also will increase--to the point where Japan will be producing about 14 percent of its needs in 1985, compared with less than 4 percent a decade earlier (Table 39).

The point is, Japan by necessity is import minded when it comes to foods--especially the protein foods. The Japanese moreover have the resources to pay for imports. Japan's industrial and marketing successes have resulted in huge trade surpluses. In 1978, Japan's merchandise exports exceeded imports by nearly $25 billion. Japan's trade surplus with the United States alone was over $10 billion (Table 46). According to its New Economic and Social Seven-Year Plan, Japan will strive to reduce their trade surplus and, what is more directly pertinent to the pollock situation, Japan also will endeavor "to contribute in a positive manner to stem protectionist measures and to develop the free trade system".15/ Opening its doors to imports of Alaska pollock is therefore consistent with Japan's needs, and with its general policy with regard to trade. There is, in fact, precedent for such a move. Japan has already liberalized its import policy with regard to formerly protected fishery items, including smoked herring, cuttlefish, shrimp, and herring roe.

The Importance of Joint Ventures

Joint ventures abroad offer Japan another feasible alternative for maintaining adequate domestic supplies of fishery products. In the late 1960's and early 1970's, Japanese companies invested heavily in onshore processing facilities in Alaska. About the same time, or soon after,

15/ Government of Japan, Economic Planning Agency, "Economic Outlook Japan, '78, '79."

Japanese fishing and trading companies began to participate in joint ventures throughout the world. With the encouragement of the Japanese government, the process accelerated to the point where, as of March 31, 1978, there were 192 Japanese joint-venture companies established in the Americas, in Asia and in Oceania. The total capital of these joint venture companies amounts to $115 million in direct and portfolio investment of which the Japanese share is $68.75 million, or 59 percent of the total (Table 48).

The spread of Japanese foreign investments in fisheries related ventures underscores the growing needs of Japanese firms (and the concerns of the government of Japan) for an assured and adequate supply of raw and processed fishery products. Demand for fishery products in Japan remains strong, while the ability of Japan's fleets to supply the domestic market declines. Formerly, a third of Japan's total catch was taken in foreign fisheries, but this has dropped to about one-fourth. Declining resources, and restrictions placed on foreign fishing by the many governments which have proclaimed 200 mile-zones of authority over fishing have materially reduced Japan's distant water catches. Production in Japan's own fisheries has increased, but not enough to contribute to any substantial gains in the total catch. In the last few years Japan's total catch has been increasing at an annual rate of only about 1.4 percent, compared with growth over two prior decades that averaged about 4.2 percent per year (Table 49). As noted previously, imports were increased to meet the needs of the domestic market. It is reasonable to assume that at

least a portion of the increase in imports was attributable to sales in Japan by Japanese joint venture companies.

The history of Japan's involvement in joint ventures with foreign fishing and processing companies strongly indicates that joint ventures dealing in Alaska pollock will be sought with U.S. firms, if further restrictions on Japan's Alaska pollock catch in the Eastern Bering Sea are anticipated. Japanese companies already have established a solid presence in Alaska where over $18.5 million has been directly invested--in equity stock--in more than 30 fishing companies that operate shorebased processing plants.16/ These plants provide the Japanese with, among other products, substantial quantities of processed tanner crab. Japan's catches of tanner crab off Alaska have been increasingly restricted.17/ In British Columbia, through joint ventures, Japanese companies have established a thriving roe herring industry that has automatic access to the Japanese market. Further investment in the British Columbia salmon industry, may now be expected as Japan attempts to compensate for reduced catches of salmon in foreign fisheries following agreements that have restricted Japanese fishing off Alaska, and in USSR waters.

16/ Investment was concentrated in the processing sector because Japanese regulations prohibited investments in fisheries governed by international fishing treaties. Japanese fishing in Alaska was governed by bilateral treaties with Japan when these investments were made.

17/ Catch quotas were first applied to the foreign Tanner Crab fisheries off Alaska in 1969, through bilateral agreements with Japan and the USSR. These bilaterals were modified every two years, resulting in progressively lower foreign quotas. (The USSR was phased out in 1971).

In brief, foreign joint ventures have proven to be an effective strategy employed by Japanese companies to maintain needed supplies of fishery products for the Japanese market. It is reasonable to surmise that this same strategy would be directed toward Alaska pollock, as need dictated. If this were the case, considerable alterations likely would be made in Japan's presently restrictive pollock imports policy.

Summary and Conclusion

The Alaska pollock resources found within the FCZ comprise one of the world's major fisheries. This large fishery, however, has attracted only negligible interest within U.S. industry. Over one million tons of Alaska pollock is caught yearly off Alaska, mostly by the Japanese who developed the fishery in the mid 1960's. Other foreign nations participate in the fishery, but to a much lesser extent. Principally, these other nations include the USSR and the Republic of Korea. In addition, relatively small catches are taken by Poland, Taiwan, and Mexico.

Pollock is the leading species in Japan's catch and accounts for about one-fourth of the total. The U.S. zone supplies nearly half Japan's pollock catch. The remainder is taken in Soviet waters that are becoming increasingly restricted, and in Japan's own coastal and offshore waters.

Japan has aimed at being self sufficient in Alaska pollock, and this has made necessary a heavy investment in distant water fleets of

factory vessels and trawlers. Japan has protected its investment, and its entire pollock related industry, by way of highly restrictive trade quotas that have virtually barred the importation of pollock products into Japan.

Alaska pollock has not caught on with U.S. industry. Probably the most important reason for this has been the lack of accessible markets that could be profitably developed. There is a market in the United States for Alaska pollock in the form of frozen blocks of fillets. Supplies of these blocks presently are imported, mostly from the Republic of Korea. Given the price they would have to offer U.S. fishermen to induce them to fish for Alaska pollock, U.S. processors are unable to compete against the imported blocks. However, even if this were not the case, the U.S. domestic market at best can absorb only a minor portion of the available Alaska pollock resource. It is estimated that the maximum potential utilization of Alaska pollock in the United States is about 275,000 tons, or less than one-fourth of the optimum yield of this resource.

Obviously, the U.S. Alaska pollock fishery can be fully utilized by U.S. fishermen only if a large export trade were to be developed. It is also obvious that the greatest export market potential lies in Japan, where some two million tons of Alaska pollock are utilized annually. Only about one-third of this pollock comes from Japan's coastal and offshore waters. Two-thirds represents catches by Japan's

distant water fleets in the U.S. and Soviet 200 mile fishery zones. In both areas, but in the Soviet zone in particular, Japan's Alaska pollock catches have been declining, as catch quotas have decreased.

U.S. fishermen have preferential rights in the pollock fisheries off Alaska, as granted by FCMA. So long as Japan persists in barring pollock imports from the U.S., there is small likelihood that U.S. industry will exercise its option to harvest this vast resource. By the same token, if U.S. industry continues to bypass the Alaska pollock fishery, the resource will indefinitely be allocated to foreign fleets in accordance with the provisions of FCMA. Japan's future access to the U.S. Alaska pollock fisheries appears therefore to hinge upon U.S. industry's intentions which in turn are heavily and negatively influenced by Japan's restrictive import policy with respect to pollock.

Alaska pollock is utilized in Japan as the principal (almost exclusive) raw fish used to produce surimi, a fish paste. Surimi, in turn, is manufactured into various fish paste products. With close to half of Japan's daily per capita intake of animal protein supplied by fishery products, it appears that fish paste products--or pollock--account for about 15 percent of the animal protein needs of Japan's population. This picture is not apt to change, provided Japan has access to pollock supplies. Sharply rising prices for pollock and pollock products in Japan indicate that demand continues strong for fish paste products. A feasible substitute for pollock for making the desired quantity of surimi has yet to be developed.

In brief, Alaska pollock fills an essential role in Japan's national diet. It is reasonable to assume that if further restrictions on Japan's distant water pollock catches are made, or anticipated, Japan would be prone to turn towards imports. Japan has, in fact, begun to import many fishery products that its own fleets are unable fully to supply. In order to do this, in some cases, Japan has abandoned protective import policies. To open the door to pollock imports from the United States therefore would be consistent with prior policy changes, as well as with Japan's pronounced policy "to stem protectionist measures and to develop the free trade system" generally. Most important of all, Japan's own best interest would be served if protective quotas on pollock imports were dropped in face of further cutbacks in the distant water pollock catches. By encouraging imports of pollock, the Japanese government would thereby help to assure for its public a stable and adequate supply of an essential source of animal protein.

A question remains whether U.S. industry has the ability and inclination to supply Japan's pollock needs. U.S. industry will be confronted with exacting, and unwavering, quality standards for pollock products. There is also the matter of price. U.S. industry officials say they can meet the Japanese quality standard. They also are mindful of the strength of the Japanese market and are confident that without undue interference, market prices will be attractive. There are other obstacles, principally those related to the establishment of suitable processing facilities, but these are not insurmountable.

Before a U.S. Alaska pollock industry can become functional, a complex network of events must occur, under difficult conditions. In light of this, industry is perhaps somewhat over confident with respect to its ability to establish an Alaska pollock sector. Nevertheless, it is difficult to believe that given the proper incentives, U.S. industry is not up to the task. What is not difficult to believe, however, is that the process of building is not apt to begin unless and until the Japanese remove the barriers against imports from the United States.