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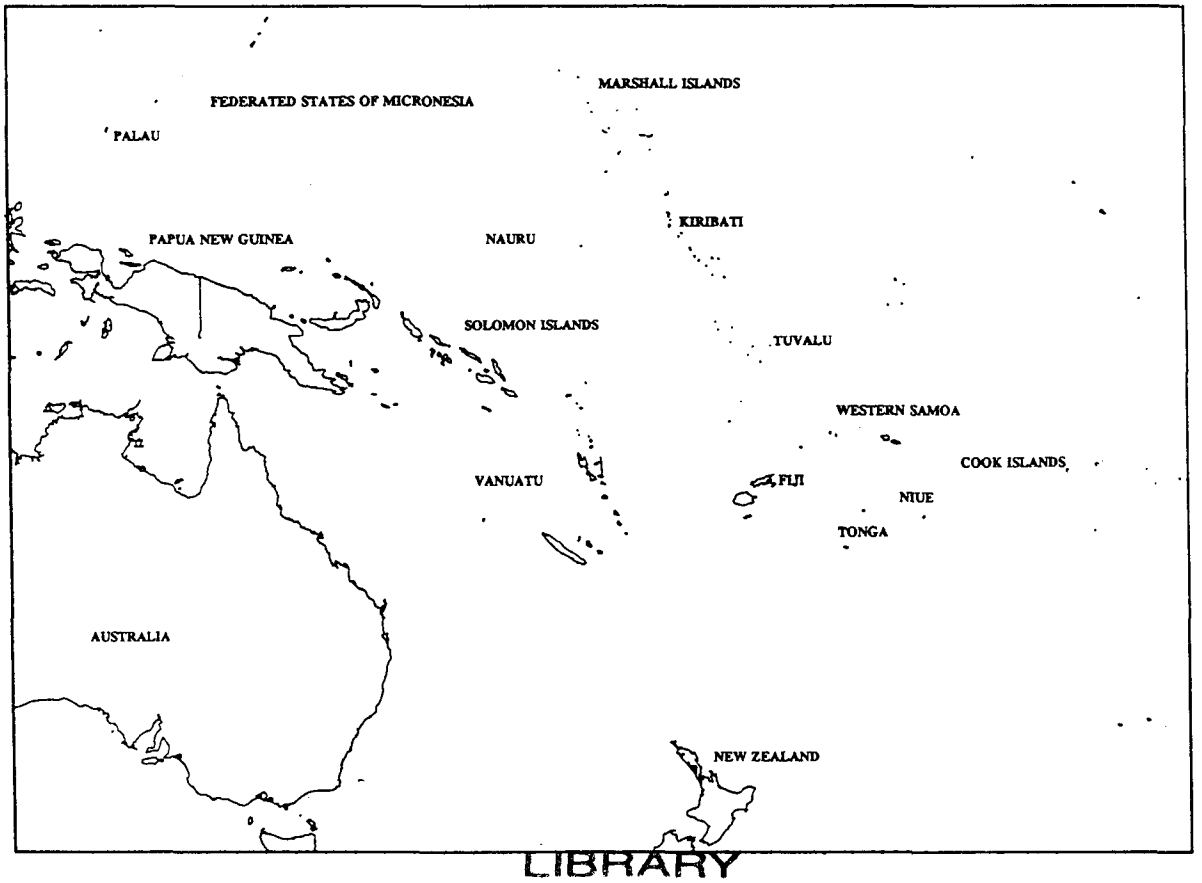

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OVERVIEW OF TUNA MARKETS

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Introduction

The purpose of this paper is to provide an outline of the current state of the main markets for tuna products originating in the western Pacific and, where possible, identify factors likely to affect future tuna supplies and prices. The economic status of the main distant water fleets operating in the region is also briefly reviewed.

Despite the large size and importance of the tuna industry globally, there has been surprisingly little quantitative work on the relationships which underpin tuna supplies and demand and which, as a result, determine market prices. Consequently, the analysis in this paper is largely qualitative in nature although an attempt is made to identify market trends.

The paper is in two sections, one on the markets for canning tuna and the other on the Japanese sashimi market.

The Markets for Canning Tuna

The main markets for canned tuna are the United States, western Europe and Japan. The key factors affecting tuna supplies and demand on these markets are examined below.

Supplies

Global supplies of skipjack and yellowfin tuna, the main species used for canning, have increased substantially from around 1.5 million mt in 1985 to over 2 million mt in 1990. Most of this increase has come from the western Pacific where catches have risen from around 320,000 mt in 1985 to an estimated 850,000 mt in 1992. The 1992 catch was stable at around the same level as that of 1991, following a steady growth in catches each year since 1985.

The growth in catches in the western Pacific since 1985 is attributable to an increase in the number of purse seiners operating (see Table 1) and to improvements in fishing technology and in the fishing skills of vessel operators. In the case of the Taiwanese fleet, an increase in the average size of purse seiners from 400 GRT in 1985 to 1,000 GRT in 1992 is also likely to have played a significant role in the growth of Taiwanese catches.

Another important development since the mid 1980s which has led to increased tuna catches has been the use of carrier vessels to tranship purse seine catches at sea. Transhipping at sea allows vessel operators to substantially reduce their turn-around time for unloading and, by so doing, increase the amount of time spent fishing. Logbook data for Korean vessels indicates that their turn-around time for transhipment at sea is only 1-2 days compared to an average 13 days for US vessels transhipping in port and 25 days for US vessels unloading to canneries in Pago Pago (LMR Fisheries Research 1992).

The prices received by fishermen for 3-7.5lb purse seine caught skipjack from US canneries fell by 26 per cent between January 1989 and June 1992, from US$836 per mt to US$616 per mt (see chart 1). The prices paid by Thai canneries followed the same trend but were more volatile than the US American Tuna Sales Association (ATSA) prices. The ATSA price for skipjack recovered to around US$800 per mt in March 1993 probably due to a reduction in supplies resulting from poor fishing conditions in the western Pacific in late 1992. Prices have, however, fallen in the last two months to around US$730 per mt (see Chart 1).

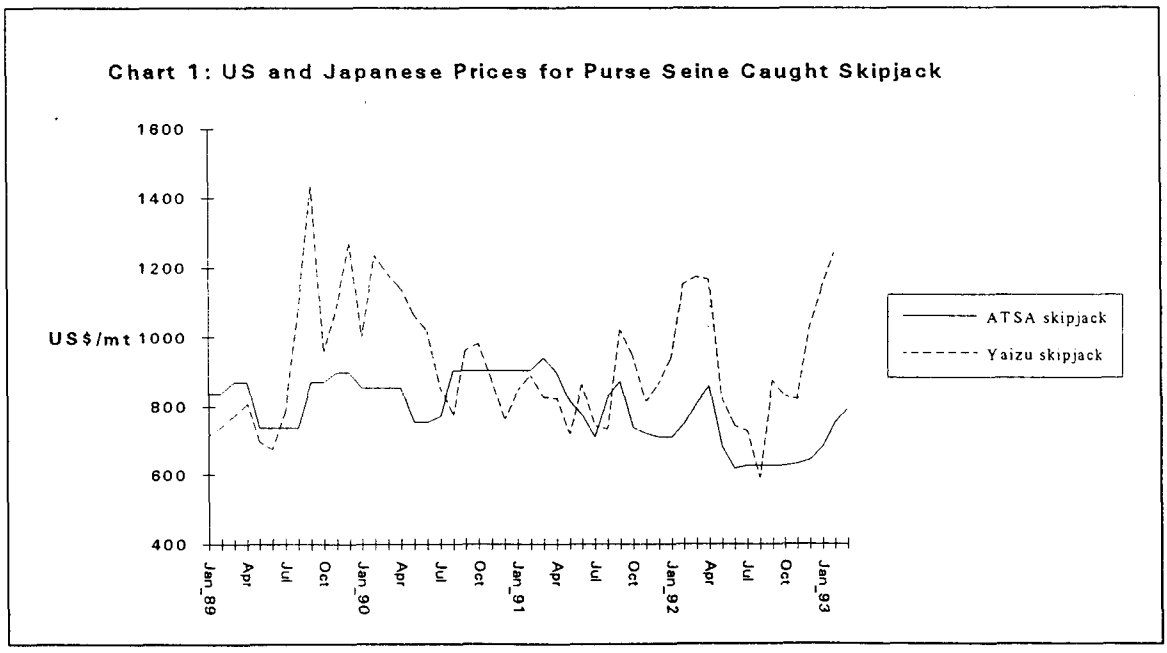
Table 1: Numbers of purse seiners by nationality operating in the western Pacific, 1985-92

	1985	1988	1990	1992
United States	39	32	43	44
Japan[1]	39	39	39	39
Korea[2]	11	23	37	37
Taiwan	7	19	35	46
Philippines	5	9	13	12
Other	5	11	*17*	*3*
Domestic[3]	1	4	4	12
Total	107	137	188	193

1. Includes seven group seiners
2. Includes Korean operated flag of convenience vessels
3. Solomon Islands and FSM

The Yaizu prices for purse seine caught skipjack have been generally higher than those available elsewhere in the world. In early 1993, for example, the Yaizu price was almost 70 per cent higher than that offered by canneries in American Samoa. Since 1989, the Yaizu price has been, on average, 20 per cent higher than the ATSA price but has followed the same general trend.

Despite the apparent price incentive for purse seiners from other countries to supply the Japanese market, there are few examples of this actually taking place. The difficulty for non-Japanese vessel operators, and the main reason for the price premium over US prices, is that the Japanese quality standards are higher than those of other markets and have proven difficult for non-Japanese operators to attain. The Japanese purse seiners are relatively small, of around 550 GRT, compared to the vessels of other distant water fleets which tend to be over 1000 GRT. As a result the Japanese trips are relatively short and as a result their catch spends less time in brine so that the quality of their fish tends to be better than that of other fleets.



The increase in the quantities of tuna supplied from the western Pacific in recent years has resulted in the value to fishermen of the purse seine catch growing from an estimated US$515 million in 1989 to around US$749 million in 1991 before falling by around 18 per cent in 1992 to an estimated US$616 million (see Table 2).

Table 2: Estimated Value of Catches by Purse Seine Fleets in the Western Pacific 1989-92

	1989	1990	1991	1992	per cent change 89-92
Japan	145	170	161	174	+20
US	130	155	191	130	0
Korea	107	164	216	136	+27
Taiwan	93	121	156	146	+57
Philippines[1]	23	24	15	12	-48
Other/domestic	17	7	10	17	0
Total	515	641	749	*615*	+19

(1) The Filippino catch for 1992 was not available at the time of writing and was assumed to be the same as in 1991.

US vessels are estimated to have suffered a 19 per cent decline in gross revenues (in nominal terms) since 1989, whereas the Japanese fleet appears to have increased its earnings per vessel by 22 per cent over the same period (see Table 3). The Korean fleet managed to slightly increase its earnings per vessel due to a large increase in per vessel catches counterbalancing the reduction in prices while the Taiwanese earnings per vessel have been significantly reduced as the increase in catch per vessel was outweighed by the reduction in average tuna prices.

Table 3: Estimated Value of Catch Per Vessel for the Main Foreign Fleets in the Western Pacific 1989-92 (US$ million)

	1989	1990	1991	1992	% change 1989-92
Japan	3.70	4.30	4.10	4.50	+22
US	3.60	3.60	4.40	2.90	-19
Korea	3.60	4.40	5.80	3.70	+3
Taiwan	3.70	3.50	3.60	3.20	-14

The introduction in June 1993 by FFA member countries of a ban on transhipment at sea by foreign licensed vessels is likely to significantly reduce their available fishing time and hence catches. It has been suggested by SPC that Korean purse seine catches may be reduced by around 20-30 per cent, or 40,000-50,000 mt, by this action. The catch of the Taiwanese fleet may be reduced by a similar margin if the ban is effectively enforced. The sinking of two US vessels and one Korean vessel in 1993 is likely to further reduce the total purse seine catch in 1993-94.

Other factors likely to affect the regional distribution of catches, but not necessarily the amount, include the decision of the Parties to the Nauru Agreement (PNA) to not licence five vessels currently operating in the region under flags of convenience and the possible enaction of US legislation which, in effect, will prohibit US vessels and those of other countries which wish to sell their fish to the US market from purse seining for tuna in the eastern tropical Pacific (ETP) from March 1994. If this occurs, some of the US vessels still operating in the ETP may relocate to the western Pacific and operate under the multilateral Treaty on Fisheries, under which there is

provision for up to 55 vessels to operate. It is also possible that a number of Latin American vessels may also wish to move their operations to the western Pacific to enable them to continue to sell to the US market. The potential impact of the US bill on supplies of tuna from the western Pacific is unlikely to be felt until 1994-95.

Overall, there is likely to be a significant reduction in catches from the western Pacific in 1993-94 which, if catches in other regions remain around current levels, will lower the amount of tuna supplied to world markets.

Demand

US Market

In the past decade, the consumption of canned tuna in the US has grown by 43 per cent from around 35 million standard cases in 1982 to around 50 million cases in 1992. Over one third of the market is now supplied by imports, mostly from Thailand, compared to the 10 per cent market share of Thai imports in 1982.

The growth in US consumption is mainly due to a 33 per cent increase in per capita consumption of tuna over this period, stimulated by significant reductions in retail prices and a growing perception amongst US consumers of seafood as a 'healthy' food item. Chart 2 shows the average wholesale prices for canned light meat tuna in the US from January 1989 to March 1993 and indicates that average wholesale prices fell by 18 per cent over this period. Although wholesale prices do not always reflect retail price movements, due to variation of profit margins by importers, they provide a reasonable indication of the general trend in retail prices. Although prices have continued to fall, this is probably the result of supplies of canned product increasing at a faster rate than the growth of demand, rather than being due to reduced consumer demand.

The quantity of imports to the US between January and mid-February 1993 fell by more than 40 per cent compared to the same period last year, possibly as a result of the current low US price of US$16.50 per carton for light meat chunk tuna and the quality problems currently faced by Thai exporters in dealings with the US Food and Drug Administration. This reduction in supplies, at a time when importers usually rush to fill the import quota (set at 20 per cent of the domestic pack and subject to only 6 per cent duty, compared to the 12.5 per cent duty payable on imports in excess of the quota) holds out the prospect of some recovery in US canned tuna prices.

Chart 2: Prices of canned skipjack chunk in brine, ex-Thailand, 1989-93

European Market

In 1992, canned tuna imports increased to record levels in Britain and France, the two biggest import markets in Europe (Foodnews 1993). Supplies to the British market increased by 6 per cent to almost 8 million cartons. A similar rise was recorded in France. Two Pacific island countries, Solomon Islands and Fiji, are significant suppliers to Britain, with a combined 12 per cent share of this market. Between 1990 and 1992, the quantity of exports from Solomon Islands increased by 38 per cent to over half a million cartons, while that from Fiji declined by a similar margin. The French market is supplied by domestic production from vessels operating in the Atlantic and Indian Oceans and imports from African canneries.

The European tuna market has expanded rapidly. Total consumption of canned tuna is currently in the region of 25 million cases per year, roughly double the amount consumed in 1986. As in the US market, increased European consumption has been stimulated by lower prices of the canned product (see chart 2).

The recent upswing in prices may be related to the recent ban by Italy and Spain on the purchase of yellowfin from the eastern tropical Pacific. Canneries in these countries are now demanding additional product from Atlantic and Indian Ocean sources, with a consequent increase in prices. The import quota set by the European Commission on canned tuna from non-African, Carribean, Pacific (ACP) states, introduced in 1992, is also likely to be putting upward pressure on tuna prices in Europe. The quota for 1993 is set at 74,000 mt and is based on the EC's estimate of the quantity of tuna imports, excluding bonito (Euthynnus sp.), from non-ACP states in 1990 and 1991. This will adversely affect Asian canneries for two reasons; exports to Europe by Thailand, particularly, have grown significantly over the average of 1990 and 1991 used to set the quota and secondly, a substantial amount of tuna was being exported by Thailand to European markets under the label of bonito to avoid the higher tariffs on other canned tunas. Increased scrutiny of imports has led to a substantial reduction in the quantity of 'bonito' supplied to European markets in 1992-93.

The net result of the import quota is likely to be a substantial reduction in supplies of canned tuna to the European market and an increase in the demand for product originating from ACP states to make good the shortfall and cater for further market growth. Clearly, this is good news for ACP canneries in the south Pacific. However, the demand for tuna from Thai canneries has already weakened with a consequent reduction in offer prices.

Japanese Market

The Japanese market for canned tuna is supplied almost exclusively by domestic purse seine and pole and line vessels.

Japanese exports of canned tuna have declined markedly over the last decade, largely as a result of declining price competitiveness of the Japanese product due to the strengthening of the yen against the US dollar. Japanese exports to the US collapsed from 25,000 mt in 1980 to zero in 1992.

Summary

Supplies of tuna from the western Pacific stabilised in 1992 after a decade of growth. The US and European markets absorbed the increased supplies by promoting increased consumption through substantial price discounting. Put simply, a 70 per cent increase in supplies from the western Pacific since 1989 led to an approximate 25 per cent reduction in prices. This is a simplification of the issue which ignores important changes in the structure of the canning industry, changes in consumer preferences and in the directions of trade. However, a fall in price of the magnitude

experienced would not be unexpected given the extent of the increase in supplies and the increasingly competitive nature of the canning industry.

The expected reduction in supplies from the western Pacific in 1993-94 will put upward pressure on prices as will increased demand in the major markets. However, the adverse impact on the Thai canning industry of the introduction of an import quota in the EC is likely to at least partly counter this effect by depressing Thai demand for western Pacific tuna. The likely outcome for ex-vessel tuna prices is unclear.

The Japanese Sashimi Market

Supplies

Annual production of tuna by the Japanese fleet has declined over the last few years, with supplies to the Japanese market being increasingly supplemented by tuna imports. Since 1985 the quantity of yellowfin and bigeye tuna imported has risen by more than 80 per cent from 128,000 mt to 232,000 mt in 1992. The majority of the increase has resulted from the growth of catches of the Taiwanese longline fleet, as indicated in Table 3.

Table 4: Total Japanese imports of fresh and frozen yellowfin and bigeye tunas by major suppliers, 1985 and 1992

	1985	1992
Yellowfin		
Korea	18.1	20.5
Taiwan	17.4	68.7
All countries	75.4	133.7
Bigeye		
Korea	28.0	28.9
Taiwan	13.6	33.7
All countries	52.2	98.6
TOTAL	127.6	232.3

source: Globefish (1993)

Since 1989, the quantity of fresh, airfreighted tuna imported to Japan has increased by 46 per cent to 57,000 mt, most of it from ASEAN countries. There has, though, been a rapid growth of fresh exports from Palau and Federated States of Micronesia mainly through the development of joint venture enterprises with Taiwanese and Chinese longline fishing companies. The number of longliners based in Palau and Federated States of Micronesia is estimated at around 150.

Table5: Japanese supplies of fresh sashimi tuna 1989-92 ('000 mt)

	1989	1990	1991	1992[1]
Domestic	76	66	64	67
Imports	39	43	48	57
Total	115	109	112	124
Main Suppliers				
Indonesia	7.6	7.9	14.9	17.4
Taiwan	14.7	14.7	16.4	16.7
Malaysia	2.3	3.7	4.7	4.5
Palau	0.2	2.5	2.7	4.3
Guam	1.8	3.9	2	3.3
Micronesia	0	0	0.2	2.2
USA	2.1	1.8	1.8	2
Australia	0.6	0.6	0.9	1.6
Philippines	4.6	4.4	2.3	1.6
Singapore	3	1.4	0.9	0.7
Fiji	n/a	n/a	0.5	0.9
Others	1.8	2.1	1.6	1.5

(1) estimated
source: Ono (1993)

Chart 3: Average Japanese import prices of frozen yellowfin and bigeye tunas, 1989 - 1993

Average prices for imported frozen yellowfin and bigeye tunas have increased by 74 per cent and 47 per cent respectively since 1989. A part of this price rise may be attributable to a 9 per cent reduction in the total quantity of frozen tuna supplied from domestic production and imports in 1992 compared to 1990. The prices of imported fresh yellowfin and bigeye tunas, although showing a large seasonal increase around the Chinese new year, have remained at around the same average levels since 1991 despite the increase in supplies indicated in Table 5. This seasonal pattern of demand is also clearly evident in the price of imported frozen bigeye tuna, as shown in Chart 4.

The total value of production of longline caught tuna and billfish in the SPC area is estimated to have increased by around 10 per cent between 1989 and 1992 to around US$499 million (see Table 6). These estimates can, at best, be considered approximate due to the poor reporting of catches by foreign fleets.

Table 6 : Estimated value of longline catches in the SPC area[1], 1989-92[2] (US$ million)

	1989	1990	1991	1992
Japan	268	274	252	311
Korea	125	102	98	123
Taiwan	57	57	51	55
Domestic[3]	5	9	15	10
total	455	442	416	499

(1) Excluding catches made in Australia and New Zealand waters.
(2) Based on SPC catch estimates for 1989-91 and Japanese import prices. Catches in 1992, if unavailable, were assumed to be the same as in 1991.
(3) The catches and, hence, value of production, of domestically based vessels is known to be substantially under-estimated due to the lack of data on the operations of many of these vessels. For example, no data is available for the fleet of vessels from the Republic of China which is based in Palau.

Over the last few years, there has been growing concern amongst Japanese industry organisations over the increasing quantities of frozen tuna supplied to the Japanese market by Taiwanese vessels and there have been several attempts to get Taiwan to agree to a voluntary annual limit on the quantity supplied. This was achieved at a recent meeting of the Taiwan Deep Sea Tuna Vessel Owners and Exporters Association and the Japan Tuna Fisheries Cooperative Association (Nikkatsuren) in which it was agreed that Taiwan would restrict its exports to Japan to 66,000 mt in 1993. The purpose of this measure is apparently 'to achieve market stabilisation' (Katsuo-Maguro Tsushin 1993). Although the import quota is set only slightly lower than the 1992 import level, if Japanese domestic production continues to decline, this measure is likely to put upward pressure on prices in 1993-94.

Demand on the Japanese sashimi market

The apparent consumption of sashimi tunas in Japan in 1992 was around 480,000 mt. In addition to these longline caught fish, most of the domestic pole and line skipjack catch of around 104,000 mt, including approximately 43,000 mt of B-1 grade skipjack, were consumed as sashimi. The B-1 skipjack are the largest, best quality fish selected from the pole and line catches.

Between 1989 and 1992, per capita household consumption of longline caught tuna in Japan increased by 18 per cent to reach 950g per person, while consumption of skipjack increased by around 7 per cent to 346g per person (Ono 1993). Consumption of seafood in the home is much higher in the older age groups with adults of 60-64 years of age eating double the quantity of 24-29

year old adults. The average consumption of tuna in the home of the younger age groups fell significantly during the 1980s (Kingston et. al. 1991) and it is not clear whether this trend has yet been reversed. Little information is available on the restaurant market for tuna. However, as tuna is a relatively highly priced product it is likely that the slowdown in the Japanese economy will have adversely affected sales in this market. The poor short term outlook for economic growth in the Japanese economy suggests that growth in restaurant demand for tuna is also likely to be modest.

Concluding comments

In 1992, the total value of canning and sashimi tuna production in the western Pacific is estimated to have exceeded US$ 1.1 billion, a decrease of around 4 per cent compared to the previous year. The value of production in 1993 is likely to increase due to already recorded increases in the average prices of both canning and sashimi tuna. Any reductions in tuna supplies, particularly as a result of the implementation from June 1993 of a ban on transhipment at sea, will put further upward pressure on prices.

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