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International Trade Patterns and Trade Policies in the Philippine Fisheries

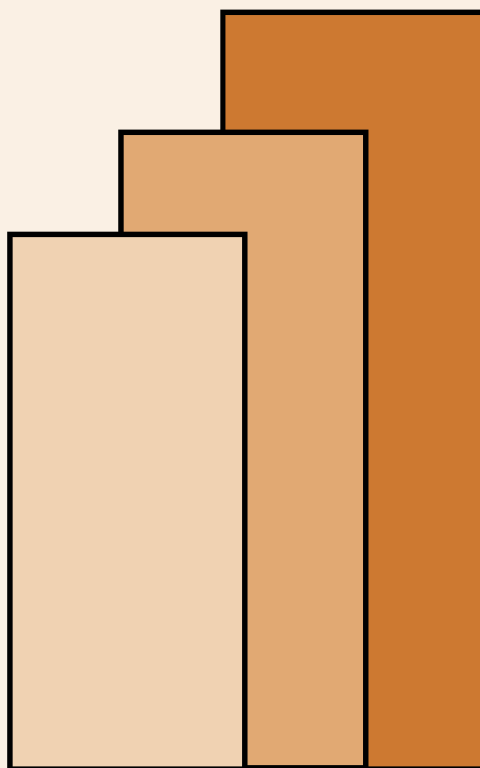
Nerissa D. Salayo

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International Trade Patterns and Trade Policies in the Philippine Fisheries

Nerissa D. Salayo, PhD.

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Abstract

The Philippines is as a net exporter of fish and products while negative trade balance prevails in other land-based production systems, such as agriculture and forestry. The balance of trade in fisheries remains positive but at a declining value. Using time series and cross-section data from 1970 to 1998, this paper derived the indexes of trade balance, quantity, total value and average unit prices of traded fish commodities to determine trade patterns. The analysis used some coefficients, such as market shares, propensity to export, import reliance and revealed comparative advantage to evaluate trade performance over time. Results consistently showed the Philippines' advantage and potential from continued efforts in exporting value-added products, such as various preparations of fish, crustaceans and mollusks. There are some lessons to recall, such as on how the improvement in the trade balance was achieved in 1994. In contrast, urgent analysis is needed to rebound from the declining performance of the fresh and frozen forms of fish and crustacean in the international market. The domestic trade regulations, policies and recent fishery-related issues in the World Trade Organization (WTO) point to the need for the Philippines to orchestrate its position on some alleged conflicting policies. The paper ends with the list of research gaps and suggested topics in fisheries trade.

International Trade Patterns and Trade Policies in the Philippine Fisheries¹

Nerissa D. Salayo, PhD.

1 Introduction

With the on-going contested issues on globalization, international trade patterns in many food commodities are among the fundamental pieces of information that are necessary in formulating the most relevant decisions and policy courses of actions. The World Trade Organization (WTO) meeting in Seattle left some unresolved issues, especially in agriculture. The issues are basically divided between developing and developed countries. Trade performance and policies between these groups of countries vary and become the source of points for bargaining on the proposed tariff schedules, implementation dates, non-tariff barriers and other trade matters.

The widening gap in perception and interest in trade in agriculture and other food production systems between developed and developing countries was mainly attributed to the polarity of positions occupied by these countries in the trade scenario. The most recent state of trade shows that developed countries are becoming primary net exporters of land-based agricultural produce. In contrast, the fisheries sector in most developing countries in Asia, including the Philippines, showed positive performance in spite of the 1997 economic crisis (Table 1). The trade balance in the Philippine fisheries, however, was not at par in comparison with its neighboring developing countries. The Philippines lags behind Thailand, Indonesia and even the newly re-establishing economy like Vietnam. From 1991 to 1997, the trade balance in fisheries in most countries declined, except in Indonesia and Vietnam.

Meanwhile, in the domestic front, the balance of trade in the fisheries sector was better than in the agricultural and forest products sector which has been showing negative trade balance (Table A-1 in the Appendix). Thus, it appears that trade in fish and fishery products, when sustained, could help improve the overall trade balance for the Philippine food production sector.

The total demand for fish and products in the Philippines is basically comprised of demand for direct human consumption (67%), for non-food uses (9%), and for export (24%). The demand for all three allocations is increasing due to the continuing population growth, increasing domestic livestock production, and growing world demand for seafood products. Fish is the most common and relatively cheaper source of protein. Not only does demand for

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quantities matter, rather, the demand for qualities of fish and fishery products is getting more detailed concerns in the negotiations for tariff schedules. Quality of fish and products are among the critical issues for some segments of the population with higher living standards, both in developing and developed countries. Qualities arising from value-adding and processing technologies become a source of product differentiation and price discrimination (Salayo 1999). These differentiation influence trading patterns and activities. For example, sashimi grade tuna that were often destined to the Japanese market received premium price. Canning grade tuna were bound to the local processors at discounted price.

Table 1. Balance of trade in fisheries, selected countries, 1991-1997.

	1991	1995	1996	1997	Average	Average annual % Change
Developing countries (in million USD)						
- Philippines	372	367	297	300	334	-2.77
- Indonesia	1,139	1,566	1,565	1,515	1,446	4.71
- Thailand	1,848	3,624	3,299	870	2,410	-7.56
- Malaysia	94	11	-18	-18 F	17	-17.01
- Vietnam	269	509	497 F	497 F	443	12.11
Developed countries (in billion USD)						
- USA	121	-3,758	-3,932	-5,284	-3,213	-638.12
- Japan	-11,237	-17,140	-16,314	-14,657	-14,837	-4.34
- Canada	1,493	1,280	1,132	1,142	1,262	-3.36

F – forecast by FAO.

Source: *FAO Fisheries Statistics (Commodities)*, various volumes.

Recognizing the importance of fisheries trade to the Philippine economy, this paper aims to determine the international trade patterns and relevant trade policies in the Philippine fisheries. The specific objectives are:

- (1) characterize the patterns and trends of international trade in fisheries including processed fish products and their role in world markets;
- (2) analyze trade policies including implications of food safety standards, and phytosanitary regulations, and their impact on the domestic fishery industry; and
- (3) assess potentials of the fishery sector in the international market.

The method of analysis puts emphasis on the seven fishery commodity classifications by the Food and Agriculture Organization (FAO), namely: (a) fresh, chilled, or frozen fish; (b) dried, salted, or smoked fish; (c) fresh, dried, salted, and other forms of crustaceans and mollusks; (d) fish products and preparations; (e) products and preparations of crustaceans and mollusks; (f) oils and fats of aquatic animal origin; and (f) meals, solubles, and similar foodstuffs of aquatic animal origin. Trade statistics of fishery products are organized based on this seven fishery commodity groups and an evaluation of statistics through a comparison with other trading countries becomes more convenient. However, analysis by species, product form and country of product destination, are more relevant in some cases, especially when concerns are on identifying the most profitable investments in fisheries trade.

Trade performance and patterns are related to the conditions and the country's endowment of fishery and manpower resources. Thus, Section 2 of this paper presents the background of the Philippine fishery that will enable further analysis of its the trade pattern and policies. Section 3 proceeds with the identification and evaluation of the major fish and fishery commodities

imported and exported by the country in order to expose actual trade patterns and relevant policies. This section also presents some trade coefficients, market share, propensity to export and import reliance, that measure the intensity of transactions between the Philippines and its import and export partners. The revealed comparative advantage (RCA) of selected fish and fishery products traded by the country over time are also discussed in this third section.

Section 4 reviews the consumption, demand and supply of fish and products in the country in relation to other trade partners and competitors in the region. Section presents the fishery trade regulations, policies and trade commitments since the 1980s to date. It also provides some evidences and commentaries on the impact of some policies, such as the contested issue on subsidies. Section 6 presents recent fishery-related issues in the WTO. Finally, the summary of the paper, the implications and policy-related research gaps for the domestic and international fishery markets are discussed in Section 7.

This paper mainly used time series data from 1970 to 1997, the latest available from FAO, and from 1970 to 1998 from the Bureau of Fisheries and Aquatic Resources (BFAR) and the Bureau of Agricultural Statistics (BAS) to trace the development in trade patterns and their implications. Some of the few studies that at least touched on the international trade patterns in the Philippine fisheries include Floyd (1984), ADB (1993), GATT (1993), and Gonzales, *et al.* (1998).

2 The Philippine Fisheries Sector: Background

The Philippines has vast water resources comprising extensive coastline exceeding 17,000 kilometers (km) in length and with about 28 million hectares of coastal waters and 220 million hectares of territorial waters in its Exclusive Economic Zone (EEZ). These endowments are the sources of livelihood for 991 thousand of its population or about 5% of its national labor force (based on a 1980 census of fisheries cited in BFAR 1998).

The country's fishery sector is comprised of three sub-sectors. The BFAR categorized that in 1997, sixty-eight percent of the fishery labor force is in the municipal sector, 26% in the commercial sector and 6% in aquaculture operations. Together with the fish processing industry, the fishery sector generated 68 million pesos gross value added (at current prices) and contributed 2.8% to the country's gross domestic product (3.8% at constant prices). Thus, domestic and international trade in fish and fish products will always be a significant, although not a dominant, economic activity in the country.

A comparison of trade balances between agriculture, fisheries and forestry revealed the importance and potentials of the fishery sector to the national economy (Table 2 below and Table A-1 in the Appendix). The fishery sector consistently exhibit positive trade balance. It is worthwhile to note that trade balance was highest at 372 million USD in 1991, when the export of crustaceans and mollusk was relatively at peak. The positive, yet declining, gains from export trade (at 2.4% decline per annum) from 1991 to 1997 was attributed to the disease problem that plagued the Philippine shrimp industry (as highlighted in Yap 1998). The balance of trade in fresh, chilled or frozen fish declined at 15% per annum while trade in fresh, dried salted and other forms of crustacean and mollusk declined at 4.6% per annum (Table 2).

The overall positive trade balance was also attributed to the increasing gains from trade in another fishery commodity group, i.e. fish products and fish preparations. Thus an indication of investment potentials in the fish processing industry. The growth in the fish processing industry is linked with the increasing demand for value-added products in the international market which arise from the changing consumption patterns and living standards. Japan, the USA and the EU, which account for over 75% of the value of world fish imports, all reported increases in their imports over time. Per capita fish consumption is generally expected to increase, especially in developed countries where rising health consciousness appears to be causing a shift in eating habits from red meat to fish and other marine products.

Meanwhile, the importation of fish meals that are major inputs to the aquaculture industry increased dramatically from 24 million USD in 1991 to 64 million USD in 1997. It accounted for the largest (46%) share of the value of Philippine imports. Importation of fish meals was necessary due to the growing demand of the aquaculture industry. However, importation trends likewise fluctuated arising from the variable needs of the disease-infested shrimp culture industry.

Table 2. Balance of trade (in million USD) and percent changes in the balance of trade in the Philippine agriculture, by sub-sector, 1991, 1995, 1996, 1997 and 1998.

Sub-sector/ commodity group	1991	1995	1996	1997	1998	Average annual % change
A. Agricultural products	-206.8	-475.5	-1,049.3	-741.1	-1,059.5	-51.5
B. Fish & fishery products	371.6	367.4	297.1	300.0	300F	-2.4
a) fish, fresh, chilled, or frozen fish	-35.3	18.2	-4.4	2.0	nd	-15.1
b) fish, dried, salted, or smoked fish	1.6	1.8	2.3	3.7	nd	18.8
c) crustaceans and mollusk, fresh, dried, salted and other forms	319.3	288.0	216.7	217.6	nd	-4.6
d) fish products and preparations	107.4	113.5	132.8	135.9	nd	3.8
e) products and preparations of crustaceans and mollusk	2.2	7.0	6.3	5.7	nd	22.7
f) oils and fats of aquatic origin	0.9	-0.2	-0.4	0.8	nd	-1.6
g) meals, solubles and similar foodstuffs of aquatic animal origin	-24.5	-60.9	-56.2	-64.2	nd	-23.1
C. Forest products	-109	-891.9	-969.3	-914.6	-596.6F	-55.9

F – Forecast by FAO since 1998 data for fisheries trade is not published yet.

nd – no data yet.

Source: *FAO Trade Yearbook 1997 and 1998*; *FAO Fishery Statistics 1997*.

3 International Trade Patterns in the Philippine Fisheries

3.1 Patterns and trends in international trade in fisheries and role in world markets

The most recent available statistics in the international scene indicated that the Philippines accounted for 0.24% of the total world exports of fish and fishery products in 1997 while imports account for 0.85% of total world imports (Table 3). From 1970, the value of exports showed a generally increasing trend until 1994. Imports showed very erratic changes. The trade balance generally improved from 1970 to 1991 and was at its record-high value in 1994 at 425 million USD. However, a declining trade balance has been recorded since then.

Overall, the Philippines has moved from being a net importer during the 1970s, and since then, the country maintained the status as a net exporter until 1998.

3.2 Trend Indicators and Measures of Trade Performance

3.2.1 World Rank and Average Annual Changes

Among world exporters of fish and fishery products, the Philippines ranked 66th in 1970 and jumped to 31st in 1997, with Norway as the leading exporter. The highest rank ever attained by the Philippines as an exporter was in 1990 with rank 27, accounting for 1.1% of the total world exports of fish and fishery products (Table 3). As an importer, the Philippines' position moved from being the 26th in 1970 to 33rd in 1997. The increase in the value of imports starting 1995 was justified by the need for raw materials in the domestic fish canning industry that was evaluated as operating under capacity. However, it remains to be seen whether import liberalization is a favorable trade policy for the country to achieve sectoral equity, economic efficiency and food security in the face of declining trade balances in fisheries.

From 1970 to 1980, the value of exports grew fastest from 1970 to 1980 at a rate of 495% per annum. However, average annual growth rates shrunk until the value of exports actually declined by 4.4% p.a. after 1995. The value of imports, however, grew fastest from 1980 to 1990 at 12% p.a. However, growth rate in imports was reduced to 0.1% p.a. from 1995 to 1997. As expected the BOT in fishery also grew at a fastest rate (69.6% p.a.) during the 1970's and declined until BOT finally shrunk at 6.1% p.a. from 1995 to 1997.

Table 3. Quantity of exports and imports and balance of trade (in thousand USD) in fish and fishery products, Philippines, 1970-1997.

Year	Exports	Rank ¹	% of Total world exports	Imports	Rank ¹	% of Total world imports	Balance of Trade
1970	2,553	66	0.622	18,325	26	0.078	-15,772
1975	17,843	45	0.644	40,950	23	0.257	-23,107
1980	141,605	28	0.925	36,570	>30 ^b	0.229	105,035
1985	151,748	30	0.887	6,325 ^a	>35 ^b	0.034	145,423
1990	395,960	27	1.108	84,809	35	0.214	311,151
1991	467,730	28	1.203	96,109	32	0.220	371,621
1992	393,993	29	0.980	110,986	31	0.245	283,007
1993	478,086	28	1.155	94,601	34	0.212	383,485
1994	533,087	28	1.129	108,193	35	0.212	424,894
1995	502,201	30	0.976	134,789	32	0.241	367,412
1996	436,542	30	0.832	139,468	29	0.245	297,074
1997	435,262	31	0.847	135,303	33	0.241	299,959
Average annual % change							
1970-80	495.1		9.0				69.6
1980-90	16.3		12.0				17.8
1991-97	-1.2		7.4				-0.4
1995-97	-4.4		0.1				-6.1

¹ Rank (1 is the highest) among world exporters/importers, whichever is applicable.

^a Note the sudden drop in value of imports during this period, particularly from 52.3million in 1982 to 2.7million in 1984.

^b The Philippines was not among the top 30 and 35 importers identified in the FAO list in 1980 and 1985.

Source of export and import data: FAO. *Fisheries Statistics – Commodities*, various volumes.

3.2.2 Export Propensity and Import Reliance

The BFAR reported that the value of exports amounted to 530 thousand USD in 1998 while imports are only valued at 83 thousand USD (Table 4).² That is, the value of imports is 84.3 percent less than the value of exports. By volume, imports are 10.6% less than exports. Thus, the products that comprise exports are highly valued than imports. From 1993 to 1998, unit price of exports averaged 3,240 USD/mt while imports averaged 447 USD/mt only. Frozen shrimps, tuna and seaweeds comprised majority of the exports (Table A-2 in the Appendix). Japan has always been a major export destination, followed by the USA. Meanwhile, imports are mainly (1) fish meals for the aquaculture industry, and (2) low-value fish for human consumption, *i.e.* frozen sardines and mackerels used as inputs in processing or canning industries (Table A-3 in the Appendix). Nevertheless, even the unit value of imports also increased almost steady from 393 USD/mt in 1993 to 502 UDS/mt in 1998 (Table 4).

Table 4. Domestic production, export and import profile of the Philippine fisheries sector, 1993-1998.

	1993	1994	1995	1996	1997	1998	Average
<u>Domestic Production</u>							
-quantity (thousand mt)	2,632	2,721	2,785	2,769	2,766	2,786	2,743
- value (million pesos)	70.22	80.19	83.08	83.13	80.71	84.64	80.33
- unit value (thousand P/mt)	25.80	29.47	29.83	30.02	29.17	30.46	29.58
<u>Exports</u>							
- quantity (thousand mt)	164	172	170	165	174	186	172
- value (million USD)	518	578	606	549	550	530	555
- unit value (USD/mt)	3,161	3,357	3,570	3,335	3,162	2,853	3,240
Export propensity (%) ¹							
- in quantity (mt)	5.76	5.81	5.56	5.43	5.68	6.28	5.75
- in value	19.42	18.17	18.20	17.51	19.28	23.39	19.33
<u>Imports</u>							
- quantity (thousand mt)	209	214	270	263	295	166	236
- value (million USD)	82	94	112	121	138	83	105
- unit value (USD/mt)	393	441	415	461	468	502	447
Import reliance (%) ¹							
- in quantity	5.48	5.78	6.38	7.89	8.02	5.80	6.56
- in value	2.41	2.22	2.30	2.67	3.18	3.47	2.71

¹ Obtained from Dela Peña (1999).

Dela Peña (1999) used export propensity and import reliance coefficients to evaluate the trade performance in fisheries. Export propensity was defined as the ratio of exports to domestic consumption. Import reliance was defined as the ratio of imports to apparent consumption. Export performance was encouraging since the export propensity coefficients, both in terms of quantity and value, were all greater than unity. Although there was a big leap in these coefficients from 1997 to 1998, there was nevertheless a declining trend from 1993 to 1996. This requires further investigation into the trend in domestic consumption of the growing Philippine population which need not be compromised for export performance. While export propensity seemed encouraging, the country's import reliance coefficient in terms of value

² Looking at the data obtained from some government agencies, such as the BAS and BFAR, this paper noted the differences in the data on quantity of exports and imports with those published by FAO (compare Table 3 that used FAO data with Table 4 that used BFAR data). When inter-country comparisons are needed, this paper uses FAO data. In the analysis of the Philippines' trade performance, the BFAR data is used in this paper.

also increased from 2.41 in 1993 to 3.47 in 1998. By quantity, import reliance was high in 1997. The implications of high export propensity in terms of value, while there is high import reliance in terms of quantity, to overall trade performance and food security nevertheless seem appropriate to the needs of the economy. That is, the country needs export earnings from high-value products while low-priced imports are occasionally required to augment local food supply for the growing population.

By country of product origin, Figure 1 below shows that there were significant realignment in the proportion of the value of Philippine imports, especially in the face of tariff and non-tariff policies. Peru, the major source of meals and feedstuff for the aquaculture industry, used to account for the largest share (32-36%) of value of Philippine imports, but not until 1998 (Table A-4 in the Appendix). The performance of the aquaculture sector decimated due to the closure of some operations affected by the disease infestation and environment conservation issues. Importation of fish meals declined from 120 thousand mt in 1997 to only 43 thousand mt in 1998, a 64% decline.

Meanwhile, importation of chilled frozen fish only declined from 158 thousand mt in 1997 to 114 thousand mt in 1998, a decline by 28% only. Since Taiwan is the major source of chilled mackerels, Taiwan topped the list of import sources and accounted for 15% of the total value of the country's imports. Peru took 13% of the total value of Philippine imports, a smaller segment of the 1998 value of imports depicted in Figure 1 below.

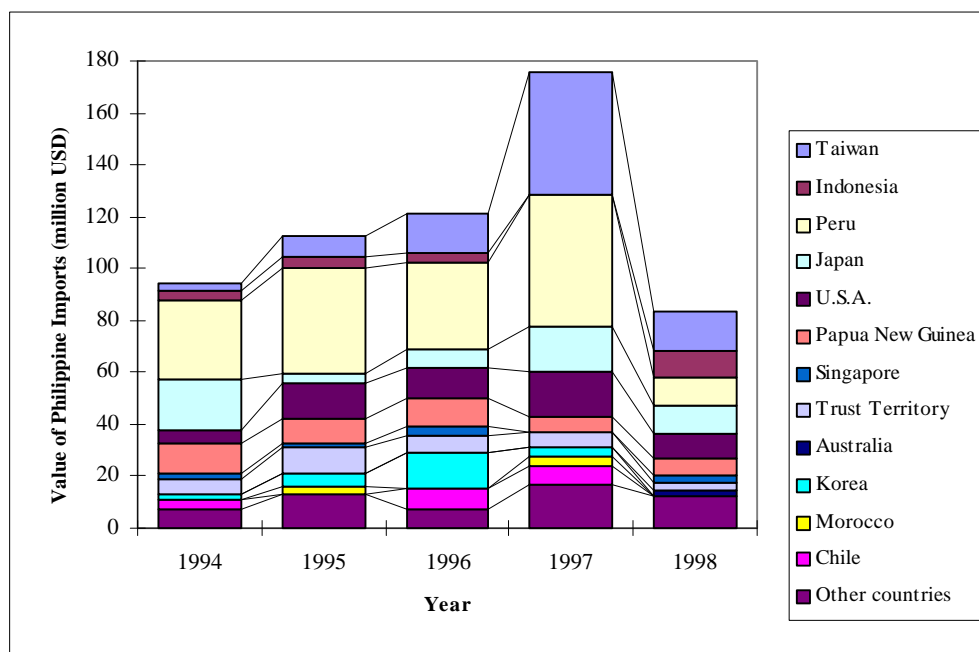


Figure 1. Value of Philippine imports, by source/country of origin, 1994-1998

Table A-4 in the Appendix also revealed slight changes in the sources of imports. The traditional sources of frozen tuna, sardines and mackerels for canning include Taiwan, Japan,

the USA, Trust Territory, Papua New Guinea, Indonesia, Singapore and Chile. The new and occasional sources of fish imports are Australia and Morocco. The latter being a source of frozen sardines. Animal feedstuff often comes from Peru and the USA.

Figure 2 highlights that Japan prevailed as the dominant market for Philippine exports, accounting for 30 to 50% of the total value of Philippine exports. Japanese imports are mainly the high-value shrimp that were either fresh, chilled or frozen (Table A-4 in the Appendix). The USA follows at a distance, accounting for only 16 to 20%. The other major traditional market outlets are Hong Kong, Germany and the U.K. There is very little variation in other product destinations. This indicates the lack of dynamism in creating new market niches and the conservative and risk-averse attitude of the export market to maintain traditional markets, even when price are becoming less competitive in these markets.

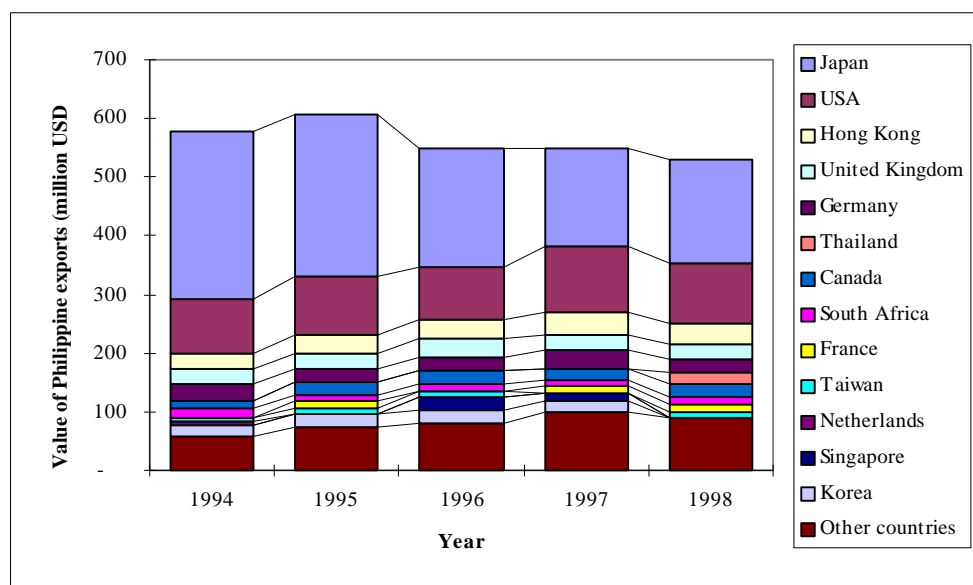


Figure 2. Value of Philippine exports, by country of destination, 1994-1998

3.2.3 Balance of Trade Index

In Table 5 below, annual trade balances by commodity group (computed from Table A-5 in the Appendix) were translated into indexes. These indexes facilitate relative ease of comparison of the trade performance of fish and products across years and across commodity groups. When the trade balance in the chosen base year is positive, the index is based to a positive number equal to 1. Otherwise, the index is based to a negative number equal to -1. The base year in this analysis is 1990.

As shown earlier, the overall trade performance was highest in 1991 with BOT index = 1.19. The country moved from being a net importer during the 1970s and was able to sustain its status as net exporter until 1997. However, the index showed a fluctuating and declining rate. The 1997 BOT index was down at 0.96.

Table 5. Balance of trade and BOT index of fish and products by commodity groups, Philippines, 1970-1997.

(a)	(b)	(c)	(d)	(e)	(f)	(g)
-----	-----	-----	-----	-----	-----	-----

Year	Fish, fresh, chilled or frozen	Fish, dried, salted or smoked	Crustaceans and mollusks, fresh, frozen, dried, salted	Fish products and preparations	Crustaceans & mollusks, canned and other containers	Oils & fats, aquatic animal origin	Meals, solubles and similar feedstuff, aquatic animal origin	All commodity groups
Balance of trade (thousand USD)								
1970	897	38	1,432	(15,786)	(814)	(34)	(1,505)	(15,772)
1975	6,842	501	8,303	(30,443)	(2,030)	1,210	(7,488)	(23,107)
1980	74,636	4,203	28,348	4,920	(492)	3,456	(10,036)	105,035
1985	22,391	1,216	74,574	47,760	1,205	3,176	(4,899)	145,423
1990	(14,387)	1,140	256,629	96,569	721	196	(29,717)	311,151
1991	(35,307)	1,598	319,309	107,414	2,248	853	(24,494)	371,621
1992	(34,798)	2,193	257,566	96,898	1,575	708	(41,135)	283,007
1993	6,838	1,855	280,479	126,514	5,819	414	(38,384)	383,485
1994	12,952	1,858	308,060	142,502	7,083	46	(47,607)	424,894
1995	18,242	1,792	287,968	113,526	6,992	(183)	(60,925)	367,412
1996	(4,435)	2,329	216,716	132,755	6,281	(361)	(56,211)	297,074
1997	2,028	3,700	217,646	135,856	5,693	(750)	(64,214)	299,959
Balance of Trade Index (1990=1.00 when BOT is positive; 1990= -1 when BOT is negative)								
1970	0.06	0.03	0.01	-0.16	-1.13	-0.17	-0.05	-0.05
1975	0.48	0.44	0.03	-0.32	-2.82	6.17	-0.25	-0.07
1980	5.19	3.69	0.11	0.05	-0.68	17.63	-0.34	0.34
1985	1.56	1.07	0.29	0.49	1.67	16.20	-0.16	0.47
1990	-1.00	1.00	1.00	1.00	1.00	1.00	-1.00	1.00
1991	-2.45	1.40	1.24	1.11	3.12	4.35	-0.82	1.19
1992	-2.42	1.92	1.00	1.00	2.18	3.61	-1.38	0.91
1993	0.48	1.63	1.09	1.31	8.07	2.11	-1.29	1.23
1994	0.90	1.63	1.20	1.48	9.82	0.23	-1.60	1.36
1995	1.27	1.57	1.12	1.18	9.70	-0.93	-2.05	1.18
1996	-0.31	2.04	0.84	1.37	8.71	-1.84	-1.89	0.95
1997	0.14	3.25	0.85	1.41	7.90	-3.83	-2.16	0.96

* Figures in () suggest negative balance of trade.

By commodity groups, the BOT indexes showed that various commodities performed differently from 1970 to 1997. Trade performance in terms of relative largest positive trade balance was highest in 1980 for three commodity groups, namely; (a) fish, fresh, chilled or frozen with BOT index=5.19; (b) fish, dried, salted or smoked with 3.69; and (f) oils & fats, aquatic animal origin with 17.63. Trade balance for processed food commodity groups such as (d) fish products and preparations in containers; and commodity group (e) crustaceans and mollusks in cans and other containers, were both highest in 1994 with BOT index=1.48 and 9.82, respectively. Trade in commodity group (c) crustaceans and mollusks, fresh, frozen, dried and salted, did not depart much from the 1990 base year since the highest index recorded was only at 1.24 in 1991. The BOT in meals and other animal feedstuff has always been negative. In particular, the trade deficit increases over time as shown by the -0.05 index in 1970 declining steady to -2.15 in 1997.

Some occurrences in the fishery industry explains the above trends in trade performance. BOT in processed crustaceans and mollusks in cans and other containers (group e) were highest in 1994, a period when other export earning commodities such as fresh and frozen fish (group a); dried, salted fish (group b) and crustaceans (group c) were not performing well

in the export market. Many processing plant diversified into processing of mollusks, or squids and octopuses, for export when the production of crustaceans, mainly shrimps, was not sufficient due to the onset of the shrimp disease problem. There were reduced supply of shrimps until 1997. The disease problem could have also increased the export of canned crustacean (from 1.5 million mt in 1993 to 2.4 million mt in 1996) as the quality of harvested shrimp from aquaculture were not appropriate for export in its fresh and frozen form.

Overall, there were modest improvements, though with some fluctuations, in the balance of trade for processed fish and fishery products categorized under groups (b), (d) and (e). If the country has to specialize in trading of some products, there could have been lessons to learn on how these improvements in the balance of trade were achieved during the mid-1990s. Meanwhile, further evaluations are urgently needed to explain the declining balance of trade in fresh and frozen forms of fish and crustaceans, categorized into commodity groups (a) and (c). The high-end international market is known to offer premium prices for fresh forms, especially for chilled and live products. The declining trade balance seem to indicate that the current state of technology in the Philippines is unable to produce such product forms in sufficient quantities that obtain premium price in the export market.

3.2.4 Indexes of Quantities, Total Value and Unit Value of Exports

The indexes of quantities, total value and unit value of exports from 1970 to 1997 shown in Table 6 clearly indicate that there were very slight changes in these variables during the period, except for the quantity and total value indexes for commodity group (f). The export quantity index went up to 54.0 in 1993 while total value index for meals and other feedstuff of aquatic animal origin rose to 30.4 in the same year. The Philippines is actually a net importer of this commodity group through the years, however, even when the country imported 87.6mt of animal feeds in 1993, there was a record export of 1,621mt valued at 669 thousand USD.

There are a few insights that may be obtained from the slight variation in unit value of fish and products exported by the Philippines over the years. Some of these indications arising from slight changes in unit value or price received include: (a) small changes in the average qualities of the products; (b) few modifications or added features arising from innovations intended to improve product attributes; (c) less dynamic marketing strategies such that the country remains as 'taker' of price quotes dictated either by the traditional or similar buyers or the export market in general; and consequently (d) no new market niches were discovered. Therefore, more intensive studies and pro-active marketing strategies and product innovations are needed to reverse this situation.

Focusing on each commodity group, the export of commodity group (a) showed that quantity of exports doubled (quality index (QI)=2.01) from the base year 1990. Its total value also almost doubled (value index (VI)=1.86). The unit value or price index (PI) of the products however, declined to 0.93. It should be noted that these prices are in nominal terms. If prices could have been evaluated at constant rates, then the declining real prices could have suggested that consumers are gaining.

Table 6. Indexes of total export quantities, total value of exports and unit value (1990=1.00) of fish and fishery products by commodity groups, Philippines, 1970-1997.

Year	(a) Fish, fresh, chilled or frozen			(b) Fish, dried, salted or smoked			(c) Crustaceans and mollusks, fresh, frozen, dried, salted			(d) Fish products and preparations, whether or not in airtight containers			(e) Crustaceans and mollusks, canned and other containers			(f) Oils and fats, aquatic animal origin			(g) Meals, solubles and similar feedstuff of aquatic animal origin		
	QI	VI	PI	QI	VI	PI	QI	VI	PI	QI	VI	PI	QI	VI	PI	QI	VI	PI	QI	VI	PI
1970	0.08	0.03	0.32	0.00	0.04	74.21	0.02	0.01	0.33	0.00	0.00	0.27	0.00	0.00	15.83	0.00	0.01	1.86	0.00	0.00	-
1975	0.49	0.19	0.39	0.74	0.41	0.55	0.07	0.03	0.47	0.02	0.01	0.47	0.00	0.00	9.90	5.49	1.95	0.35	0.00	0.00	-
1980	2.71	2.09	0.77	2.25	3.37	1.50	0.15	0.11	0.73	0.25	0.31	1.23	0.21	0.13	0.60	6.44	5.41	0.84	0.00	0.00	-
1985	0.88	0.65	0.74	1.01	1.02	1.00	0.42	0.29	0.70	0.56	0.49	0.87	0.89	0.34	0.38	5.69	4.92	0.86	0.00	0.00	-
1990	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1991	0.89	0.90	1.01	1.33	1.36	1.03	1.25	1.24	0.99	1.05	1.11	1.05	1.19	1.23	1.03	1.98	2.30	1.16	0.93	1.00	1.07
1992	0.81	0.81	1.01	1.32	1.82	1.38	1.04	1.01	0.97	1.06	1.00	0.94	0.98	1.22	1.25	2.07	2.64	1.28	7.97	4.73	0.59
1993	1.81	1.63	0.90	1.27	1.68	1.32	1.09	1.10	1.01	1.29	1.31	1.02	1.24	1.57	1.26	1.14	1.30	1.13	54.03	30.41	0.56
1994	2.05	1.86	0.91	1.30	1.75	1.35	1.10	1.21	1.10	1.33	1.48	1.11	1.64	2.14	1.30	0.55	0.67	1.22	14.03	7.55	0.54
1995	2.17	2.36	1.09	0.91	1.66	1.82	0.98	1.13	1.15	1.06	1.18	1.12	1.43	2.21	1.55	0.15	0.17	1.08	10.60	6.05	0.57
1996	1.82	2.03	1.11	1.31	2.02	1.54	1.13	0.86	0.75	1.54	1.37	0.89	1.96	1.89	0.97	0.07	0.07	1.09	0.40	0.23	0.57
1997	2.01	1.86	0.93	1.39	3.04	2.19	0.88	0.86	0.98	1.25	1.41	1.13	1.27	1.66	1.31	0.01	0.01	0.70	2.80	2.09	0.75

QI = Quantity index

VI = Value index

PI = Unit value or price index

For commodity group (b), all of the three indexes showed generally increasing trends with minimal fluctuations. This commodity group can be evaluated as an export earner since its $QI=1.39$; $VI=3.04$ and $PI=2.19$. Dried, salted and smoked fish were able to find new market niches in growing nearby Asian countries such that the prices received for the product increased more than twice over the years. However, there was an outlying trend in 1970, where $PI=74.21$, that requires verification.

Fresh, frozen, fried and salted crustaceans and mollusks in commodity group (c) has always been a top export earner in the Philippines since mid-1970s (Appendix Table A-5). From only 600mt in 1970, quantity of exports rose by 300% or to 2.4 thousand mt in 1975. Exports further increased to 43.9 thousand mt in 1991, the highest record, thus a $QI=1.25$ in Table 6 above. Since then, there were fluctuations and a final decline to 30.8 thousand mt in 1997 with $QI=0.88$. When quantity decline, we expect prices to increase. However, lower total value ($VI=0.86$) and price indexes ($PI=0.98$) were also observed in 1997. Intuitively, the low prices received in 1996 ($PI=0.75$) at a nominal level, closely similar to 1980 at $PI=0.73$, suggest that qualities were indeed low. Perhaps, arising from the shrimp diseases that affected product attributes and therefore prices. The increase in quantity of exports ($QI=1.13$) in 1996, inspite of the disease problem could be explained by the forced harvesting of some stock even while prices that may be received are low ($PI=0.75$), thus a lower total value of exports, with $VI=0.86$. As the shrimp health experts note that the industry is beginning to recover from the disease problem, and thus the quality of the product, unit value or price received index rose to 0.98. The financial crisis that hit the major shrimp importing countries in Asia should also be considered among the factors that influenced lower prices of shrimp in the most recent years.

Exports of fish products and preparations in sealed containers (commodity group d) show resilience in the export market. All three indexes indicate moderate fluctuations yet increasing patterns. Over the years, even the nominal prices of these products barely increased from the 1990 level. Meanwhile, proportionately higher indexes of value of exports were recorded, finishing at $VI=1.41$ in 1997. This trend also suggested the lack of more dynamic changes in product innovations and creation of new market niches.

The trend demonstrated by the indexes relevant to commodity group (e), or crustaceans and mollusks in cans and other containers, are similar to the previous group (d), i.e. fish products and preparations in sealed containers. The indexes are, however, slightly higher. Similar with fresh crustaceans (commodity group c), prices received (with $PI=0.97$) in 1996 was lower than in 1990. The discounted price could also be explained by the reduced quality of harvest from the disease-infested aquaculture sector.

Although the Philippines is not a consistent and major net exporter of oils and fats of aquatic animal origin, the indexes show relative increases in quantities, total value and prices received during the early 1990s. However, beginning 1994 quantities and total value of exports declined in spite of prices that are almost consistent with 1990 base year. Price index further declined to 0.70.

As noted earlier, all indexes showed moderate changes over time except for commodity group (g) that comprised animal feed stuff. The country has always been a net importer of feeds for the aquaculture industry and exports are in minimal quantities, except in 1993 when $QI=54.03$. It should be verified whether the feedstuff are indeed produced in the country or are re-exports obtained from other sources. The total value of exports was also highest in

1993 with VI=30.41. Meanwhile, the index of unit prices of exported animal feeds declined over time, yet able to recover in 1997.

3.2.5 Revealed Comparative Advantage

The revealed comparative advantage (RCA) for fresh fish in Table 7 below (obtained from the last column of Table A-5 in the Appendix) declined at erratic rates from 0.98 1970 to 0.02 in 1997; fish other than frozen improved from 0.58 to 0.93; crustaceans and mollusk, which used to be the country's major export before tuna, remained almost steady at 0.96 to 0.97; fish products and preparations from -0.99 to 0.98; canned crustaceans and mollusk improved from -0.96 to 0.71; oils and fats was initially in a bad light at -0.81 in 1970 and improved to 0.91 in 1975 but plummeted to -0.99 in 1997; and fish meals and feedstuff has always been discouraging at -1.00.

Table 7. Revealed comparative advantage (RCA) of fish and fishery products by FAO fishery commodity classification, 1970- 1998.

	Fresh, chilled, frozen fish	Dried, salted, or smoked fish	Fresh, dried, salted, other forms of crustaceans & mollusks	Fish products & preparations	Products & preparations of crustaceans & mollusks	Oils & fats of aquatic animal origin	Meals, solubles & similar foodstuff & aquatic animal origin
1970	0.98	0.58	0.96	-0.99	-0.96	-0.81	-1.00
1975	1.00	0.94	1.00	-0.94	-0.99	0.91	-1.00
1980	1.00	0.97	0.99	0.09	-0.32	0.96	-1.00
1985	0.92	0.90	1.00	1.00	0.78	0.98	-1.00
1990	-0.17	0.82	1.00	0.98	0.10	0.18	-1.00
1991	-0.35	0.86	0.99	0.99	0.28	0.40	-1.00
1992	-0.37	0.91	0.99	0.99	0.19	0.26	-0.99
1993	0.06	0.78	0.99	0.99	0.82	0.32	-0.97
1994	0.11	0.72	0.99	0.97	0.67	0.06	-0.99
1995	0.12	0.74	0.98	0.97	0.62	-0.46	-1.00
1996	-0.03	0.84	0.97	0.98	0.68	-0.79	-1.00
1997	0.02	0.93	0.97	0.98	0.71	-0.99	-1.00
Ave.	0.27	0.83	0.99	0.58	0.22	0.08	-1.00

Note: Details of the value of import and export of fish and products are shown in Table A-5 in the Appendix.

This paper also looked into the RCA of fish and product by form that are generally traded in the Philippines. Table 8 below clearly shows that the Philippines has strong comparative advantage in the production and export of processed fish and products, especially for the highly valued crustacean and mollusk. Some examples are prepared sea cucumber (item 16), jellyfish (17) and sea urchin (18). For processed fish and products, such as prepared and preserved anchovy (21), the computed RCA is low, even during its best year in 1996 with RCA only at 0.158.

Chilled or frozen products that are highly valued, such as shrimp (13) and lobsters (10), showed RCA almost close if not equal to 1.00. For other average priced species, the RCA remain positive but never equaled 1.00 if the product was frozen, as in the case of frozen yellowfin tuna (item 3). However, if yellowfin tunas are in fresh or chilled form (item 2), its RCA is 1. For crabs, the trend that fresh or chilled forms are associated with higher RCA does not always prevail. However, intuitively, it could be verified whether the availability of suitable technology for marketing fresh and chilled form in recent years has reversed the

trend. That is, frozen forms are linked with lower RCA at 0.983 in 1996 and 0.985 in 1997. Meanwhile, comparative advantage has improved for fresh or chilled crabs.

Obviously, the RCA for fish and products in frozen form have either very low or negative coefficients. However, assuming that these imported frozen products, such as tunas and bonitos (item 4 with RCA= -1) were indeed processed for domestic consumption and for re-export, the RCA for these processed tunas (item 21) was close to 1. These seem to justify the country's importation policy to provide input to the canning and processing industries.

Table 9. Revealed comparative advantage (RCA) of selected fish and products, by species, 1993-1997.

Fish and products	1993	1994	1995	1996	1997
1. Ornamental fish	1.000	1.000	1.000	1.000	1.000
2. Yellowfin tuna (fresh or chilled)	1.000	1.000	1.000	1.000	1.000
3. Yellowfin tuna (frozen)	0.696	0.409	0.695	0.942	0.396
4. Tuna and tuna-like species (frozen)	-1.000	-1.000	-1.000	-1.000	-1.000
5. Skipjack or bonitos (frozen)			0.258	-0.416	-0.292
6. Mackerels (frozen)	-0.802	-0.733	-0.829	-0.940	-0.963
7. Sardines (frozen)		-1.000	-1.000	-1.000	-1.000
8. Fish fillets (fresh or chilled)	0.946	0.951	0.966	1.000	
9. Fish (smoked)			0.386	0.874	0.994
10. Lobster (frozen)	0.955	0.957	0.963	0.982	1.000
11. Crabs (fresh or chilled)	-0.857	-1.000	0.979	0.992	0.988
12. Crabs (frozen)	0.975	0.986	0.999	0.983	0.985
13. Shrimp and prawn (frozen)	0.998	1.000	0.999	0.999	0.999
14. Clams (fresh, chilled, frozen)	1.000	1.000	1.000	1.000	1.000
15. Squids and cuttlefishes (frozen)	0.893	0.853	0.813	0.738	0.713
16. Sea cucumber (fresh, frozen, dried, salted)	1.000	1.000	1.000	1.000	1.000
17. Jellyfish (dried, salted or in brine, prepared)	1.000	1.000	1.000	1.000	1.000
18. Sea urchin (fresh, frozen, prepared or preserved)	1.000	1.000	1.000	1.000	1.000
19. Octopus (frozen)	1.000	1.000	1.000	1.000	1.000
20. Octopus (fresh or chilled)	-	-	1.000	1.000	0.999
21. Anchovies (prepared and preserved)	-0.268	-0.379	-0.002	0.158	0.114
22. Mackerels (prepared or preserved)	0.948	0.893	-	-	-
23. Other fish preparations (HS 1604.20)	0.764	0.761	0.856	-	-
21. Tunas and bonitos (prepared and preserved)	0.999	0.997	0.998	0.997	0.999
22. Meals & animal feedstuff, aquatic animal origin		-0.993	0.996	-1.000	0.999

(-) there was no value of import or export data reported to enable computation of RCA during the year.

3.3 Fish Trading Across Countries and Economic Groups

Majority of the Philippine imports originated from APEC member countries (Table 9-a). Though, this could be explained by the membership of Peru and Japan in this APEC group. Peru is a major source of imported fish meal for the aquaculture sector while Japan is a major export destination of frozen shrimp. Imports from APEC members overall declined from 81 million USD (about 86% of total Philippine imports) in 1994 to 68 million USD in 1998 (only 82% of value of imports). Import trade with ASEAN only ranged from 6.34% of total imports in 1994 to 15.9% in 1998. The implications of the recent economic pacts such as the ASEAN agreement on Common Effective Preferential Tariff (CEFT) may have some

influences on this increase in trading activities with neighboring countries, particularly with Indonesia and Singapore.

Export trade with ASEAN countries ranged from 2.5% to 4.2% of the total value of exports and declined at 4.41% (Table 9-b). Meanwhile, export trade with APEC declined both in terms of value and proportion to total value of exports. That is, from 441 million USD (76%) in 1994 to 368 million USD in 1998, also at a rate of 4.2%. Similarly, the Philippines' fishery export performance with EU member countries seems to stagnate. In fact, trade declined at 1.5%. UK and Germany remain to be the usual trade outlets, with occasional exports to Spain. It seems that no new significant market niche has been explored.

Table 9-a. Value (in thousand USD, fob) and proportion of Philippine imports of fish and fish products from various countries and economic groups, 1992-1998.

	1994	1995	1996	1997	1998	% Change [#]
Total imports (Value in thousand USD, fob)	94,521	112,144	120,996	295,016	83,319	-2.96
ASEAN ¹ (value)	5,990	5,669	7,151	0	13,262	30.35
(% share)	6.34	5.06	5.91	0	15.92	
Indonesia	3.84	3.75	3.23	0	12.70	-24.91
Singapore	2.50	1.31	2.68	0	3.21	-24.97
APEC ² (value)	81,044	86,004	106,833	237,845	68,512	-3.87
(% share)	85.74	76.69	88.29	80.62	82.23	
Japan	20.82	3.43	5.97	15.37	12.62	-24.98
USA	5.20	11.88	9.34	5.80	11.83	-24.94
China	3.31				2.76	-24.98
Republic of Korea	1.96	4.31	11.50	3.32		-25.00
Australia					3.06	
Chile	3.89		6.47	4.28		-25.00
Singapore	2.50	1.31	2.68		3.21	-24.97
Indonesia	3.84	3.75	3.23		12.70	-24.91
Taiwan		7.03	12.26	15.84	15.24	
Papua New Guinea	11.77	8.91	9.06	3.69	8.12	-24.98
Peru	32.46	36.06	27.78	32.33	12.69	-24.99
Other Countries (value)	13,477	26,140	14,163	57,171	14,807	2.47
(% share)	14.26	23.31	11.71	19.38	17.77	
South Africa						
Trust Territory	6.52	9.11	5.83	3.39	3.11	-24.99
Morocco		2.68		4.76		122.33
Other ³	7.73	11.51	5.88	11.23	14.67	-24.95

[#] Average annual percent change in value of imports (note: not % change in % share) in from 1994 to 1998.

¹ The Philippines has no recorded significant imports from other ASEAN member countries, such as Brunei Darussalam, Malaysia, Thailand, Vietnam, Laos, Cambodia and Myanmar.

² Also includes some countries listed under ASEAN. The Philippines has no recorded significant imports from other APEC member countries, such as Canada, New Zealand, Hong Kong, Brunei Darussalam, Malaysia, Singapore, Thailand, Mexico, Russia and Vietnam.

³ Value of imports from other countries not named in the BFAR list of top ten sources of fish imports.

Source: BFAR . *Philippine Fisheries Profile*, 1994, 1995, 1996, 1997 and 1998.

Table 9-b. Value (in thousand USD, fob) and proportion of Philippine exports of fish and fish products to various countries and economic groups, 1992-1998.

	1994	1995	1996	1997	1998	% Change [#]
Total exports (Value in thousand USD, fob)	577,623	606,028	549,312	549,831	529,999	-2.06
ASEAN¹ (value)			23,109	13,766	21,118	-4.31
(% share)			4.21	2.50	3.98	
Singapore			4.21	2.50		-50.00
Thailand					3.98	
APEC² (value)	441,332	460,253	400,875	368,288	367,580	-4.18
(% share)	76.40	75.95	72.98	66.98	69.35	
Japan	49.47	45.54	36.84	30.69	33.26	-25.00
USA	16.38	16.32	16.57	20.25	19.40	-24.99
Canada	2.25	3.57	3.92	3.17	3.89	-24.99
China	1.05					-25.00
Korea, R.O.	2.92	3.89	3.94	3.27		-25.00
Hong Kong	4.34	5.11	5.85	7.11	6.83	-24.99
Singapore			4.21	2.50		-40.43
Thailand					3.98	
Taiwan		1.53	1.65		1.99	-33.33
EU³ (value)	62,039	63,173	54,398	69,409	58,277	-1.52
(% share)	10.74	10.42	9.90	12.62	11.00	0.59
U.K.	4.23	4.35	5.89	4.77	4.47	-25.00
Germany	5.01	3.92	4.02	5.75	4.29	-25.00
France		2.16		2.11	2.23	
Netherlands	1.50					-25.00
Other Countries (value)	74,522	82,602	94,039	112,134	104,142	9.94
(% share)	12.94	13.63	17.12	82.92	19.65	
South Africa	2.71	1.68	2.51	2.02	2.68	-25.00
Other ⁴	10.19	11.95	14.61	18.37	16.97	-24.99

[#] Average annual percent change in value of imports (note: not % changes in % share) from 1994 to 1998.

¹ The Philippines has no recorded significant exports to other ASEAN member countries, such as Brunei Darussalam, Indonesia, Malaysia, Vietnam, Laos, Cambodia and Myanmar.

² Also includes some countries listed under ASEAN. The Philippines has no recorded significant exports to other APEC member countries, such as New Zealand, Australia, Chile, Brunei Darussalam, Indonesia, Malaysia, Vietnam, Papua New Guinea, Mexico, Peru and Russia.

³ The Philippines has no recorded significant exports to other EU member countries, such as Denmark, Italy, Spain, Belgium-Luxembourg, Ireland, Portugal and Greece.

⁴ Value of imports from other countries not named in the BFAR list of top ten sources of fish imports.

Source: BFAR . *Philippine Fisheries Profile*, 1994, 1995, 1996, 1997 and 1998.

4 Consumption, Demand and Supply of Fish and Fish Products

Overall, the Philippine fishery sector stands firm considering its positive balance of trade. Nevertheless, Table 4 earlier showed an increasing export propensity juxtaposed with high but erratic import reliance coefficient. It also seems ironic that the country experienced a declining average annual per capita consumption of fish, from 36kg in 1974-75 to 33kg in 1993 (Table 10). Fish is not an inferior food item such that consumption can be expected to decline with a generally increasing trend in real income. Fish is an important source of protein in the Philippines especially that animal meat is generally insufficient and generally more expensive than average types of fish. The latest data on average annual per capita consumption of meat and products in the Philippines is 12kg while poultry is at 5kg in 1993.

Table 10. Per capita consumption of fish and fish products, and balance of trade in selected fish trading countries, 1974-97.

	Fish consumption ¹			Balance of trade in fisheries			
	1974-76	1984-86	1994-96	1975	1985	1995	1997
A. Net exporters							
Philippines	36	34	33.0	-23	145	367	300
Korea, Rep.	40	47	51.6	352	707	740	358
China (main)			22.0	103	296	1,913	1,753
Taiwan			35.8	nd	nd	1,783	1,122
Thailand	21	20	31.4	97	537	3,624	1,862
Indonesia			17.6	81	214	1,566	1,514
Chile			24.0	40	438	1,658	1,743
Peru			23.5	212	219	866	126
Canada			22.1	311	1,003	1,280	1,142
Norway			48.5	489	852	2,632	2,837
Denmark			23.7	312	582	886	1,129
South Africa			9.3	106	20	87	66
B. Net importers							
Japan	69	69	70.7	-728	-3,924	-17,140	-14,650
Singapore			31.2	-35	-42	-75	-132.6
Hong Kong	49	46	56.8	69	173	-1,189	-1,467
Malaysia	33	46	54.6	36	-4	11	-10
USA			21.6	-1,083	-2,889	-3,758	-5,289
UK			19.1	300	-578	-715	-8,777
Germany			12.9	351	-567	-1,578	-1,386
World average			15.2	-595	-1,221	-3,991	-4,826

nd: no data available

* Consumption data is derived by FAO from the ratio of net domestic availability of fish for human consumption to estimated population. This paper notes the possibilities that average actual consumption deviates from these estimates.

Source: FAO Fisheries Statistics (commodities) (1997).

In comparison with other net fish importing countries, annual per capita consumption of fish is at 33 kg on average level. Average per capita consumption in the Philippines revealed a steadily declining pattern, initially at 36kg in 1974-76 to only 33kg in 1994-96. The declining per capita consumption in the Philippines in relation to other Asian countries can also be linked to the declining per capita fish supply availability, that is from 28.5kg in 1994 from an estimated 30.5kg in 1987. This declining domestic supply should be a major concern that may have some relationships and policy implications on the export of fish and fish products from the Philippines.

In contrast, Japanese consumption was consistently high at about 70kg. Korea, Hong Kong, and Malaysia showed high and continuously increasing pattern. Thailand's per capita consumption at 21kg was initially lower than the Philippines, but Thailand's consumption increased to 26kg in 1994-96, though this remained lower than the Philippines. It appears that net exporters of fishery products remain to attain at least moderate levels of per capita consumption. These includes the developing countries in Asia, such as Thailand and Indonesia, with record-high production of aquaculture products which are generally intended to augment domestic fish supply. However, many of the export products remained to obtain lucrative prices compared with average world price in the world market that make exporting more attractive than trading at the domestic market. This could have prevailed in the Philippines. This was shown in Table A-5 in the Appendix as average unit value (AV) of each of the seven commodity classifications from 1970 to 1997. It should, however, be evaluated further whether the positive balance of trade is indeed due to value-adding. Data on post-harvest and processing is nil but is required in this analysis.

5 Trade Policies in Fisheries

5.1 Philippines Fisheries Trade Policy: A Review

This section reviews the existing fisheries trade policies and directions of the Philippines. This review may help explain the trade patterns that figured in the earlier sections of this paper. Foremost among the trade policies to consider is the World Trade Organization (WTO) agreement which the country has to comply with being one of the 135 signatories. Fish and products are not included among the sensitive agricultural products (such as rice), and do not fall under the WTO Agreement on Agriculture. However, fishery is still covered by the general rules of the GATT, particularly Article XI, which bans the use of quantitative import restrictions. **Article XI of GATT 1994** states that *"No prohibitions or restrictions other than duties, taxes or other charges, whether made effective through quotas, import or export licenses or other measures, shall be instituted by any contracting party on the importation of any product of the territory of any other contracting party or on the exportation or sale for export of any other contracting party."*

Dela Peña (1999) documented the fish trade policies being implemented in the country. Accordingly, the Philippines is currently implementing trade liberalization through the **Tariff Reform Program (TRP)** as provided by Executive Order 288. This program aims to gradually reduce tariff on all products commencing in 1996, excluding sensitive agricultural products, by a target uniform rate of 5% by 2003.

Although the TRP aims for a uniform tariff rate of 5% by 2003, the **Early Voluntary Sectoral Liberalization (EVSL) Program**, in comparison, noted that processed products (such as HS 03.07, HS 16.03, HS16.04, HS16.05 in Table 11 below) shall retain its 7% tariff rates. The EVSL, which is an APEC initiative to liberalize trade in the region, is characterized by a more gradually phased tariff reduction. That is, reductions to 3% to 5% will only take place in 2004 and 2005.

Table 11 below lists the schedule of tariff reduction under the EVSL. Tariff ranged from 3% to 45% in 1998 and 1999. Low tariff rates, such as 3%, are imposed generally during the lean season from August to February on fresh or chilled fish (HS 03.02), frozen fish (HS 03.03); dead animal products used as inputs for production of animal feeds (HS 05.11); fats and oils of marine animals (HS 05.04); flour meals and pellets used in formulating animal feed (HS 023.01); and forms of other prawn feeds (HS 023.09). Products with 3% tariff are those that are inputs to the formulation of animal feeds and those that are used as raw materials in the fish canning industry. Meanwhile, majority of the tariff rates are between 10% and 20%, in particular, for products that are generally being produced and are also being exported by the country.

Table 11. Tariff schedule for fish and products following the EVSL proposal, 1998-2005.

HS Code	Product	1998	1999	2000	2001	2002	2003	2004	2005
03.02	Fish, fresh or chilled	10/3*	10/3	7/3	7/3	7/3	5/3	5/3	5/3
03.03	Fish, frozen	10/3	10/3	7/3	7/3	7/3	5/3	5/3	5/3
03.04	Fish fillets and other fish meal	10	10	7	7	7	5	5	5
03.06	Crustaceans, live, fresh, chilled, frozen, dried, salted or in brine	10	10	7	7	7	5	5	5
03.07	Mollusks, oysters, scallops, mussels, snails, cuttlefish	20	20	15	10	10	7	5	5
	- cuttlefish	10	3**	3	3	3	3	3	3
05.11	Animal products, dead animals, brine shrimp eggs as live feed for prawn fry culture	3	3	3	3	3	3	3	3
15.04	Fats and oils of fish and marine mammals	3	3***	3	3	3	3	3	3
16.03	Extracts of juices of meat, fish or crustaceans, mollusks or other aquatic invertebrates	20	20	15	10	10	7	5	5
16.04	Prepared or preserved fish, caviar and substitutes	20	20	15	10	10	7	5	5
16.05	Crustaceans, mollusk and other aquatic invertebrates, prepared or preserved	20	15	15	10	10	7	5	5
23.01	Flour, meals and pellets, unfit for human consumption	3***	3	3	3	3	3	3	3
23.09	Animal feed preparations								
	- prawn feeds	3	3	3	3	3	3	3	3
	- others ('catch all' tariff line for animal feeds (hog feeds, bangus feeds, tilapia feeds, etc.)	45	45	45	40	35	30	20	20

* Generally, 10% tariff is imposed, but tariff is reduced to 3% when importation occurs during the months of August to February, the lean fishing season in the Philippines. Also, the Bureau of Fisheries and Aquatic Resources (BFAR), recommends zero to sustain Philippine fishing resources and when imports are inputs to the fish canning industry.

** Input to canning industry, zero is acceptable beginning 1999.

*** Not locally produced, zero is acceptable as beginning rate.

Source: Macam, *et al.* 1998.

Some of the earlier laws affecting fisheries trade are discussed in Gonzales, *et al.* (1998). These include: (a) **Republic Act 8178 of 1996**, or the **Agriculture Tariffication Act**, that

repealed some sections of the Magna Carta of Small Farmers to remove all quantitative restrictions except rice; (b) **Central Bank Circular No. 1356 of 1992**, that liberalized the importation of fishery products such as milkfish, cod, anchovies, herring, mackerels, sardines, tuna and roundscad; (c) **United Nations Convention of the Law of the Sea (UNCLOS) of 1982**, that established the 200 mile Exclusive Economic Zone (EEZ) of the Philippines, being a signatory to this treaty; (d) the **Investment Priorities Plan for 1992** which allows purse seining for distant water fleet operations and aquaculture to avail of special incentives. Under this investment policy, fishing is designated as a 'national' activity, enjoying a maximum foreign equity participation allowable at 40%, unlike the case of aquaculture and seafood processing where 100% equity is permissible provided at least 70% of the output is exported; and (e) the **import liberalization program** enacted in 1988. According to Nambiar (1993), this trade liberalization policy resulted in substantial increase in imports beginning in 1991, particularly of frozen raw materials for canning which is needed by the undercapacity canneries, especially during the lean fishing season. This policy, however, was much criticized for its alleged negative impact, in terms of unfair competition with domestic producers.

5.2 Trade Commitments with other Countries/Economic Groups

5.2.1 With ASEAN

While domestic trade reforms in the 1980s generally intend to support the fishery industry, the ASEAN heads of government adopted the Singapore Declaration (22 October 1983) and the Framework Agreement Enhancing Cooperation, which included a decision to establish the ASEAN Free Trade Area (AFTA) within 15 years. Free trade is now expected to be established by the year 2003. Member countries are now gradually implementing the provisions of the Agreement on the Common Effective Preferential Tariff (CEPT) Scheme, which is the main instrument of AFTA.

The areas identified as subject to cooperative action among member-countries include: the management and conservation of fishery resources; transfer of technology to improve the socio-economics of fishers; raising aquaculture production and fish farmers' incomes; production and marketing; post-harvest technology; the promotion of fish marketing and trade; and the promotion of fish marketing and trade; and promotion of a common understanding on regional and international matters in fisheries (FAO 1999).

Also, the 15th meeting of ASEAN Ministers of Agriculture and Forestry in 1993 agreed on a medium-term program of action for ASEAN cooperation in food, agriculture, fisheries and forestry. The program is aimed at strengthening food security in the region and is compatible with the Ministerial Understanding on Fisheries Cooperation (FAO 1999).

5.2.2 With APEC

As a member of the APEC, the commitment of the Philippines is largely reflected in its unilateral Tariff Reduction Program (TRP). The country is promoting the terms in the TRP in its Individual Action Plan submitted in pursuit of the APEC goal (Dela Peña 1999). In particular, the Philippines is actively subscribing to APEC's goal of achieving free trade in the region by 2010 for developed countries and by 2020 for developing countries. The

country committed to the goals of APEC, an informal organization where there are no sanctions for withdrawing offers to this organization. In comparison, the country is a signatory to the WTO, a formal organization where compliance is highly expected. It is well known that the Philippines has yet a number of concerns on fisheries, among other sectors, for negotiation with WTO.

Table 12. Trade in fishery products by economic group, 1984, 1988, 1992 and 1996.

	1984	1988	1992	1996	Average Annual % Change
ASEAN					
Aquaculture production					
- inland production	679	852	1050	1193	5.8
- marine production	234	326	592	715	15.8
Fisheries production					
- inland production	984	923	939	1058	0.6
- marine production	6680	7878	9405	10390	4.3
Trade in fishery commodities					
- total imports (USD million)	471	1,142	1,904	2,072	26.1
- total exports (USD million)	1,320	3,446	5,777	7,703	37.2
- balance of trade (USD million)	850	2,304	3,873	5,631	43.3
NAFTA					
- total imports (USD million)	4,084	6,021	6,785	8,321	8.0
- total exports (USD million)	2,712	5,087	5,985	6,178	9.8
- balance of trade (USD million)	-1,372	-934	-800	-2,143	-4.3
SAARC					
- total imports (USD million)	26	38	61	76	14.8
- total exports (USD million)	529	765	1,012	1,490	14.0
- balance of trade (USD million)	503	727	960	1,414	13.9
SPF					
- total imports (USD million)	306	415	482	584	7.0
- total exports (USD million)	671	1,095	1,372	1,711	11.9
- balance of trade (USD million)	365	680	890	1,127	16.0
LAES					
- total imports (USD million)	269	358	472	1,039	22.0
- total exports (USD million)	2,118	3,139	4,243	6,615	16.3
- balance of trade (USD million)	1,849	2,781	3,771	5,576	15.5
EU					
- total imports (USD million)	5,363	12,261	17,270	19,352	20.1
- total exports (USD million)	3,117	6,400	8,580	11,015	19.5
- balance of trade (USD million)	-2,246	-5,861	-8,690	-8,337	-20.9

NAFTA – North American Free Trade Agreement includes Canada, Mexico and the United States.

SAARC – South Asian Association for Regional Cooperation includes Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka.

SPF – South Pacific Forum which includes Australia, Cook Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

LAES – Latin American Economic Systems includes 27 Latin American and Caribbean countries: Argentina, Barbados, Belize, Bolivia, Brazil, Chile, Columbia, Costa Rica, Cuba, the Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Trinidad and Tobago, Uruguay and Venezuela.

EU – European Community includes Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.

Source: FAO. 1998. *State of World Fisheries Trade*.

As mentioned earlier, the Philippines also participated in developing the APEC Early Voluntary Sectoral Liberalization (EVSL) Program. The initiatives of the Program should have commenced in 1998. EVSL proposed tariff rate reductions that are in conformity with the TRP. And although it does not totally eliminate tariff by 2005, it expects to achieve lower

tariff rates of 3% to 5% as shown in Table 11 earlier. The EVSL also proposed the elimination of non-tariff measures by December 2007. These measures include quantitative import/export restrictions, export subsidies, discretionary import/export licensing and import/export levies. Nevertheless, APEC has brought the EVSL proposals to the WTO for further negotiations as some countries have difficulties accepting the terms of the EVSL program.

5.3 The WTO and the Philippine Fisheries Code

Being a signatory to WTO, the Philippines has to comply with the motivations of the WTO policies that foster flexibility in trading of products. However, the country has issued Republic Act 8550 (Fisheries Code of the Philippines) in 1998 which generally governs the current fishery policy in the country. There were some ‘contradictions’ noted between portions of R.A. 8550 and the WTO objectives.

Section 61(c) of R.A. 8550 stipulates that: *“Fishery products may be imported only when the importation has been certified as necessary by the Department, in consultation with FARMC, and all the requirements of this Code, as well as all existing rules and regulations, have been complied with: Provided, that fish imports for canning/processing purposes only may be allowed without the necessary certification, but within the provisions of Section 61(d) of this Code;”*. Meanwhile, Section 61 (d) also of R.A. 8550 is also relevant to fishery trade as it states, *“No person, shall import and/or export fishery products of whatever size, stage or form for any purpose without securing a permit from the Department.”* These portions tend to suggest some violations of the principles of free trade.

5.3.1 Forms of Economic Incentives in Fisheries

Since the WTO has long considered subsidies as potential non-tariff barriers to trade, the Philippines was particularly criticized as exercising this form of non-tariff barrier³. That is, the Fisheries Code provided incentives to commercial fishery operators to improve their fishing vessels and to acquire new equipment that will allow them to fish in non-traditional and distant waters. Dela Peña (1999) identified these incentives specifically as:

1. Long-term loans supported by guarantee facilities to finance the building and acquisition, or improvement of fishing vessels and equipment;
2. A limited period of tax and duty exemptions on the importation of fishing vessels not more than 5 years old, equipment and paraphernalia; and
3. Duty and tax rebates on fuel consumption.

However, Dela Peña (1999) clarified that the provisions of the Philippine Fisheries Code on incentives are not prohibited and actionable subsidies under the Agreement on Subsidies and Countervailing Measures. The amount of support given to the fisheries sector, and similar

³ Gonzales, *et al.* (1998) discussed the ‘distortionary’ policies that have been applied to the fishery industry, before the ascension and membership of the Philippines into the WTO. These includes commodity specific trade policies, export policies, Bureau of Investments (BOI) subsidies and incentives, and transport and infrastructure policies. Financial policies such as exchange rate, monetary and fiscal policies were evaluated as creating distortions that had “taxing effects” on the agriculture sector. For instance, the study argued that the import-led substitution strategy (ISS) encouraged the growth of high and restrictive tariff and non-tariff barriers that appreciated the peso. Exchange rate over-valuation worsened the ‘disprotection’ received by the agriculture sector and further penalized its exports.

with the agriculture sector, was generally estimated to be negligible relative to the gross value added generated by the sector.

PRIMEX (1996) also reported that the value of Philippine fish and fishery products exported in the international market has been very favorable, as food fish exports have exceeded imports by a factor of 1.75 in volume and 23 in value. The country exports high value products such as prawn in various forms and fresh chilled tuna. In contrast, imports mainly consist of lower-value frozen fish such as canning-grade sardines and mackerel.

5.3.2 Measures of Economic Incentives

Considering that there have been some forms of incentives provided to the fisheries, this section evaluates the economic incentives received by the fishery sector and the impact they created on trade performance. Gonzales, *et al.* (1998) used both the nominal (NPR) and effective (EPR) protection rates as measures to evaluate economic incentives in fisheries. NPR determines the impact and degree of distortion caused by the departure of domestic price from the border price.⁴ Thus, it measures the distortionary impact of intervention instruments in output prices. Meanwhile, EPR is the rate at which the current financial domestic value added deviates from the true value added level which would have prevailed in the absence of market interventions.⁵

Nominal protection rates were classified into direct (DNPR) and indirect (INPR). The DNPR measures the rate of deviation of the domestic price from its border price (tradable). Thus, it quantifies the relative impact of distortionary policies specific to a sector. The INPR measures the degree of distortions emanating from policies which sustain the departure of nominal exchange rate from its free trade exchange rate equilibrium levels.

Table 13 below shows that fishery products with high competitiveness in the world market, such as sashimi grade tuna, carrageenan, seaweeds, prawn and milkfish have negative NPRs and EPRs. In contrast, products with lesser competitive advantage, such as canning grade tuna, tilapia and crab have positive NPRs and EPRs. Negative NPR suggests penalties toward the fishery product while positive NPR indicates positive protection. The negative estimates reflected the effect of various interventions in the production, marketing and trade during the period 1980s to 1992. The industry also generally failed to adopt with the trends that could have helped attain gains from the lucrative world market for seafood. The Philippines remain to suffer from resource depletion problems, high cost of freight, high tariff on inputs and inadequate infrastructure (Gonzales, *et al.* 1998).

Implicit tariff compares the domestic price to world price of inputs. A negative implicit tariff suggests subsidy or protection while a positive implicit tariff indicates tax or 'disprotection'

⁴ Operationally, $NPR = [(P_d/P_{na})/(P_d^*/P_{na}^*)] - 1$, where P_d is the price of the domestic output; P_{na} is the price of non-agricultural output; P_d^* is the border price evaluated at the equilibrium; and P_{na}^* is the price of the non-agricultural output at the equilibrium. The ratio between the commodity's domestic output and non-agricultural prices accounts for the impact of the non-agricultural prices to fisheries prices. Thus, the ratio provides a better degree of incentive operating within a sector relative.

⁵ $EPR = [(DVA - FVA)/FCA] \times 100$, where DVA is the domestic value added, FVA is the free trade value added. However, in Gonzales, *et al.* (1998), $EPR = (\text{Financial value added}/\text{Economic value added})$.

for the input. In Table 13, the implicit tariff rates were all positive and generally high, except for milkfish.

The study also found that adjustments for overvaluation tend to decrease EPRs. That is, EPRs were lower when computed using the generally higher shadow exchange rates instead of the official exchange rates between the peso and the US dollar. It was also noted that the levels of the EPR are to some extent a function of the proportion of tradable (foreign) and domestic cost components. The higher the proportion of domestic value added to tradable (economic) value added, the higher the effective protection rates.

Table 13. Measures of economic incentives for selected fish and fishery products, 1996.

	Border price (USD/kg)	Value added		Nominal protection rate (%)	Implicit tariff rate (%)	Effective protection rate (%)
		Economic (Pesos/ hectare)	Financial (Pesos/ hectare)			
Sashimi grade tuna	9.27	208,199	48,054	-73.30	34.53	-76.92
Carrageenan	9.50	216	100	-43.68	19.19	-53.67
Seaweeds	0.92	71,675	51,122	-28.52	26.63	-28.68
Prawn	12.34	904,450	674,969	-19.68	9.88	-25.37
Milkfish (wholesale)	2.39	75,048	63,333	-12.51	1.53	-15.61
Canning grade tuna	1.15	19,200	34,794	68.75	34.53	81.21
Tilapia	0.98	74,799	125,744	62.69	14.47	68.11
Crab (Pampanga)	8.39	29,907	32,354	8.34	11.76	8.18

Source: *STRIVE Rapid Appraisal Survey* (1996) as cited by Gonzales, *et al.* (1998)

6 Recent Issues in the WTO

6.1 Financial Assistance/Subsidy

The WTO contends that financial assistance and many forms of subsidy create unfair competition that inhibits the objective of free trade. For example, the Agricultural Competitiveness Enhancement Fund (ACEF) is a special fund made up of tax collections from the country's low tariff importation of farm goods. ACEF is supposed to fund projects that will improve the efficiencies of local agricultural producers. This type of support is likely to receive protest at the WTO.

For the fisheries sector in particular, the Fisheries Code provided mandate in support of the commercial fishery sector to improve vessels and equipment that enable access beyond municipal waters. Transfer of additional fishing efforts from traditional municipal fishing grounds to off-shore areas promotes conservation, protection and sustainable management of the fishery resources. However, this provision of the Code is criticized as inconsistent with Article XI of the GATT. However, the Code does not negate the terms of free trade considering the Agreement on Subsidies and Countervailing Measures.

On surplus products from developed countries, Dela Peña 1999 asserted that there is no truth to the allegation that imported fish cause dampening of prices received by domestic producers. Domestic prices did not drastically drop while there was substantial increase (87%) in imports from January to June 1998 to the same period in 1999. These imports mainly comprised of frozen sardines intended for the canning industry.

6.2 Environment and Conservation

Staffin (1996) noted the emerging issues about the often conflicting goals of international trade and economic growth against those of environmental protection. Much issues focused whether one country 'can unilaterally impose a ban or other quantitative restriction on imported goods that were produced or harvested in violation of that country's environmental or conservation laws governing a particular production or process method.

A recent illustration of this is the trade-environment dispute arising from the US ban on the importation of tuna caught in the eastern tropical Pacific Ocean by a particular fishing method, purse-seine netting, which kills or maims dolphins.

Trade and environmental issues are being dealt through non-tariff barriers and quantitative restrictions in trade. Residual import licensing requirements still remain under GATT Article XVIII:B (restrictions for BOP reasons), and import regulations for reasons of health, safety and national security (PIDS-APEC Study Center 1997).

On rules of origin, the Philippines has adopted the system of preferential rules in the ASEAN OEPT being a signatory to the formation of the AFTA. In addition, it is actively involved in the harmonization efforts undertaken by the Technical Committee on Rules of Origin under the World Customs Organization.

The government is also committed to ensure the full compliance with internationally harmonized ROO to be adopted in relevant international fora with its active participation in the WTO/WCO harmonization work program and the alignment of the country's ROO with internationally harmonized ROO resulting from the WTO/WCO process. During and after the adoption, the Philippines is also committed to actively participate in the periodic review of harmonized ROO (PIDS-APEC Study Center 1997).

6.3 Food Safety and Health

The implications of trade policies on food safety and health vary, generally by destination of the traded products. Compliance to food safety regulations, such as those under the ISO, is not compulsory at the local and international level. Nevertheless, there are no specific requirements in respect of the condition or organoleptic quality of fish offered for sale to Philippine consumers (PRIMEX 1996). The standards of quality vary according to consumer's subjective perception.

However, traders that perform international transactions pay reasonable attention and generally conform with the food safety standards and other such measures recognized in the international market. The exporters who sought these certification generally follow in order to gain acceptance in the international market in view of the prestige of the ISO certification. But there are some questions. Does ISO really help in the final analysis? What are the measures to verify the benefits from obtaining such certification?

Table 14 presents categorization of 108 fishery-related firms that gained accreditation from the EU. Seventy of the total 108 firms are freezer type vessels. They are based in Manila and

in Mindanao. Processing plants, the other type of firm, are found all over the country, though most of them are in Mindanao and in Manila as well.

Table 14. Fishery-related firms in the Philippines accredited by the European Union.

Type of firms ¹	Metro Manila	Luzon	Visayas	Mindanao	Total	
Processing plant	12		1	5	20	38
Freezer vessel	48		0	0	22	70
Total	60		1	5	42	108
%	55.6		0.9	4.6	38.9	100

¹ Factory vessels are included among the EU firm categories, but none is listed for the Philippines.

Source: DTI unpublished compilation (Modification of Annex to Commission Decision 96/256/EC), fax message from Brussels dated 26 July 1999.

Epidemiological data, particularly on cholera, suggest that health risk from imported fish and fishery products, other than raw or partially cooked mollusk/shellfish, is negligible in the Philippines. Reported cases of cholera have been sourced generally from individual travelers not from traded commodities. Nevertheless, WHO has formulated a guidance on the formulation of National Policy on the control of cholera. The WHO believes that the best way to guarantee food safety is to require the importers and exporters to agree on the measures for implementing good manufacturing practices (GMP), hazard assessment critical control points or HACCP systems during fish processing permits a systematic approach for minimizing food safety hazards (INFOFISH 1998).

7 Summary and Conclusion

The analysis of international trade patterns and trade policies in the Philippine fisheries showed the economic importance of the fishery sector especially that it remains to provide a positive trade balance after being a net importer during the nineteen-seventies. In contrast, trade in land-based agriculture and forestry sectors have long been in deficit. Nevertheless, further studies on the measures to create a sustainable positive trade balance is necessary in the face of its positive yet declining pattern. Trade balance for the Philippines was also below par compared with other Asian developing countries. A workable compromise is needed on how the interlocking relationship and the multiple goals of obtaining economic gains from positive trade balance, sustainable development and food security could be achieved.

Fish and products do not fall under the WTO Agreement on Agriculture. However, fishery is still covered by the general rules of the GATT, particularly Article XI, which bans quantitative import restrictions. As a member of the APEC, the commitment of the Philippines manifest in its unilateral Tariff Reduction Program (TRP). Even while there is a pressure to comply with WTO terms of trade, the TRP and other free trade commitments, the country has yet to orchestrate its position and defend the objectives of the Fisheries Code of the Philippines. The Code puts particular importance on the sustainable consumption and conservation of fishery resources. This becomes the primal goal that justifies the alleged support or subsidy to fishers who were otherwise encouraged to explore new fishing grounds and allow rejuvenation of traditional fishing areas.

The products that comprise exports are highly valued than imports. Frozen shrimps, tuna and seaweed comprised majority of the exports. Japan, the USA, Hong Kong, United Kingdom,

Germany, Thailand, Canada, South Africa, France and Taiwan has always been a major export destinations. Meanwhile, imports are mainly fish meals for the aquaculture industry; and low-value fish for human consumption, *i.e.* frozen sardines and mackerels used as inputs in processing industry operating under capacity.

While export propensity coefficients appeared encouraging, both in terms of quantity and value, the country's import reliance coefficients also increased. This trend nevertheless seems appropriate to the needs of the economy. That is, the country needs export earnings from high-value products while low-priced imports are occasionally required to augment local food supply. Yet, it remains to be seen whether import liberalization is indeed a favorable trade policy for the country to achieve sectoral equity, economic efficiency and food security in the face of declining trade balances in fisheries.

By commodity groups, the balance of trade indexes showed that various commodities performed differently from 1970 to 1997. Trade balance for processed food commodity groups such as (d) fish products and preparations in containers; and commodity group (e) crustaceans and mollusks in cans and other containers, were both highest in 1994. Trade in commodity group (c) crustaceans and mollusks, fresh, frozen, dried and salted, did not depart much from the 1990 base year and the index was only 1.24 in 1991. The trade balance in fish meals and other feedstuff has always been negative.

There are a few insights that may be obtained from the slight variation in unit value of fish and products exported by the Philippines over the years. Some of these indications arising from slight changes in unit value or price received include: (a) small changes in the average qualities of the products; (b) few modifications or added features arising from innovations intended to improve product attributes; (c) less dynamic marketing strategies such that the country remains as 'taker' of price quotes dictated either by the traditional or similar buyers or the export market in general; and consequently (d) no new market niches were discovered. Therefore, more intensive studies and pro-active marketing strategies and product innovations are needed to reverse this situation.

While Philippine products and prices show moderate levels of competitiveness (*i.e.* for fresh and frozen shellfish, and prepared and preserved fish), patterns of export destinations show a general lack of improvement in creating new market niche and even for innovating new product forms. Further research in the fish processing sector is required. The Philippines should not forego the benefits that can be expected from its comparative advantage in fresh and frozen shellfish, and prepared and preserved fish. Cooperation is needed among government agencies and the private sector, specially the food processing corporations with reputable research and development capabilities in food processing.

There is greater variability in the major sources of imports. Importation appears to be more responsive to instantaneous market changes. Increasing import reliance, especially for the low-end market for canning grade tuna, need not be perennially explained by the need for inputs by the under-capacity processing establishments and the food security program for the growing population. The processing industry should take advantage of the instantaneous flexibility to importation. That is, considerations to import high-value inputs should be attempted to benefit from re-exported value-added products. For example, the country's high RCAs for processed fish, and crustaceans and mollusks even when there was reduced supply

from the disease-infested shrimp culture sector suggest potential gains for the post-harvest industry.

With the continuing positive balance of trade in the Philippine fisheries sector, there is a question whether the domestic consumption is being compromised for export money. The increasing trends in fish consumption or a sustained high level of consumption were observed in more industrialized countries in Asia that are net importers of fish, such as Japan, Singapore and Hong Kong, Malaysia and the developed countries such as the USA, UK and Germany.

It appears that the growing WTO campaign against subsidies is justified by nominal (NPR) and effective (EPR) protection rates obtained for selected traded fish and fishery products in the Philippines. It was ironic to find that fishery products with high competitiveness in the world market, such as sashimi grade tuna, carrageenan, seaweeds, prawn and milkfish have negative NPRs and EPRs. In contrast, products with lesser competitive advantage, such as canning grade tuna, tilapia and crab have positive NPRs and EPRs. (Although, it could be justified by the need for domestic food sufficiency.) Interventions in the production, marketing and trade occurred during the period 1980s to 1992. The industry also generally failed to adopt with the trends that could have helped attain gains from the lucrative world market for seafood. The Philippines remain to suffer from resource depletion problems, high cost of freight, high tariff on inputs and inadequate infrastructure.

The implications of trade policies on food safety and health generally vary by product destination. Compliance to food safety regulations is not compulsory at the local and international level. However, international traders generally conform with food safety standards to gain acceptance in the international market in view of the prestige of the ISO certification.

8 Fisheries Trade- and Policy-Related Research Gaps

1. Determining the strengths and weaknesses of the various forms and quantity of labor available in the fishery sector, from the production stage to post-harvest and processing, is an immediate concern. Similarly, a nationwide assessment of facilities, infrastructure, and availability and access to technology should be conducted. The results from this survey will facilitate the assessment of the international competitiveness of labor and the industry, itself, in terms of skills, cost and adaptability to global competition.

2. Excess capacity in processing plants is already documented (Israel 1998; Pabuayon, *et al.* 1999). The excess capacity arise from declining domestic yield and the construction of fish landing ports managed by the PFDA that encouraged investments in processing plants. Can the Philippines diversify and aim beyond importing cheap frozen fish, especially of frozen sardines, intended to utilize this excess capacity and to provide the need in the lower-end markets? Will the investors be motivated and be more enterprising to import other high-value import raw materials and re-export them as highly value-added products?

3. Further evaluations are urgently needed to explain the declining balance of trade in fresh and frozen forms of fish and crustaceans. The high-end international market is known to offer premium prices for fresh forms, especially for chilled and live products. The declining trade balance seem to indicate that the current state of technology in the Philippines is unable to

produce such product forms in sufficient quantities, and perhaps qualities, that obtain premium price in the export market.

4. On the issue of alleged subsidy to the fishery sector provided through the Fisheries Code, there is a need to quantify the cost structure of the fishery sector. This will determine the actual amount and the forms of support received by the fishery sector. Furthermore, the analysis should be done by sub-sector, such as the aquaculture, municipal and commercial sector, since the needs, capitalization, maturity and efficiency of each sub-sector varies.

5. In spite of being a net exporter of fish and products, there is no doubt that consumption of fish in the Philippines (at 36kg/capita in 1993) is below the per capita requirement. Importation is justified as complimenting, rather than displacing, domestic production. However, it seems that importation is simply meant to cater to the minimum requirement of the domestic market. Studies should look into the costs and benefits of importing other high value species and product forms that are wanted in the upper market brackets and are perhaps re-exportable. With an increasingly heterogeneous market, the country should not miss the opportunities offered by the different brackets of the society.

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Appendix

Table A-1. Balance of trade (in million USD) and percent changes in the balance of trade in the Philippine agriculture, by sub-sector, 1991, 1995, 1996, 1997 and 1998.

	1991	1995	1996	1997	1998	Average annual % change
A. Agricultural products	-206.8	-475.5	-1,049.3	-741.1	-1,059.5	-51.5
Food and animals	-34.6	-1,133.4	-1,428.8	-1,201.6	-1,559.7	-551.0
- live animals	-13.8	-87.6	-84.3	-95.1	-75.6	-56.0
- meat and meat preparations	-16.1	-79.2	109.2	-129.0	-100.7	-65.7
- dairy products and eggs	-223.1	-433.6	-403.9	-404.6	-284.2	-3.4
- cereals and preparations	-276.2	-659.0	-990.1	-798.9	-1,116.7	-38.0
- fruits and vegetables	452.4	459.4	479.7	476.0	441.1	-0.3
- sugar and honey	131.4	-102.0	-129.4	53.7	-29.1	-15.3
- coffee, tea, cocoa and spices	0.4	-23.8	-22.6	-48.8	43.2	1,337.5
- feeding stuff	-94.4	-172.2	-101.9	-182.2	-250.3	20.6
- miscellaneous food	4.4	-35.4	-67.7	-72.8	-71.9	-219.3
Beverages and tobacco	-22.5	-127.6	-63.2	-143.0	-106.5	-46.7
- beverages	-7.3	-32.5	-27.2	-41.5	-22.4	-25.8
- tobacco	-15.1	-95.1	-36.1	101.5	-84.1	57.1
Crude materials	-23.4	-47.7	-94.7	-41.9	-66.5	-23.0
- hides and skins	-1.0	-0.6	-0.5	-1.4	-1.4	-5.0
- oilseeds	-5.1	-45.8	-84.1	-65.8	-79.8	-183.1
- natural rubber	12.7	26.8	32.9	24.2	13.6	0.9
- textile fibre	-64.8	-97.8	-125.1	-86.4	-50.4	-2.8
- crude materials, n.e.s.	34.0	69.6	82.5	87.6	51.6	6.5
Animal and vegetable oil	287.2	811.2	537.4	645.4	673.2	16.8
- animal fats	-3.2	-9.6	-9.9	-11.7	-16.9	53.5
- fixed vegetable oils	282.5	807.1	534.4	640.8	674.1	17.3
- processed oils	7.9	13.7	12.9	16.3	16.0	12.8
B. Fish & fishery products	371.6	367.4	297.1	300.0	300F	-2.4
- fish, fresh, chilled, or frozen fish	-35.3	18.2	-4.4	2.0		-15.1
- fish, dried, salted, or smoked fish	1.6	1.8	2.3	3.7		18.8
- crustaceans and mollusk, fresh, dried, salted and other forms	319.3	288.0	216.7	217.6		-4.6
- fish products and preparations	107.4	113.5	132.8	135.9		3.8
- products and preparations of crustaceans and mollusk	2.2	7.0	6.3	5.7		22.7
- oils and fats of aquatic origin	0.9	-0.2	-0.4	0.8		-1.6
- meals, solubles and similar foodstuffs of aquatic animal origin	-24.5	-60.9	-56.2	-64.2		-23.1
C. Forest products	-109	-891.9	-969.3	-914.6	-596.6F	-55.9

F – Forecast by FAO since 1998 data for fisheries trade is not published yet.

Source: FAO Trade Yearbook 1997 and 1998; FAO Fishery Statistics 1997.

Table A-2. Major country of destinations of top three fishery exports, Philippines, 1993-1998.

	1993	1994	1995	1996	1997	1998	Average	% Share
Shrimps and Prawns	22,734	22,418	18,257	13,514	10,532	10,649	16,357	100.0
	<u>(% share)</u>							
Japan	83.5	78.8	73.7	73.9	70.9	72.2	12,539	76.7
U.S.A.	10.3	10.3	10.0	7.8	9.0	14.8	1,619	10.3
Korea	1.3	4.8	8.0	11.8	10.1	1.2	936	5.7
Hong Kong	0.6	1.6	1.4	1.7	3.0	0.0	219	1.3
Guam	0.9	1.1	1.1	1.2	1.8	0.0	164	1.0
Others	3.4	3.4	5.8	3.6	5.2	11.7	814	5.0
Tuna (quantity in mt)	71,974	78,365	68,886	75,494	79,114	99,461	78,882	100.0
	<u>(% share)</u>							
Japan	22.1	28.7	31.3	21.6	21.0	16.7	18,258	23.1
U.S.A.	19.9	18.8	21.2	24.2	23.2	1.4	13,628	17.3
Germany	13.2	13.8	10.7	9.5	13.3	-	7,567	9.6
United Kingdom	9.6	10.6	8.9	8.2	5.9	-	5,374	6.8
South Africa	8.0	8.3	5.9	7.0	4.9	5.3	5,127	6.5
Others	27.1	19.8	22.1	29.5	31.6	76.5	28,928	36.7
Seaweeds	23,574	24,826	38,246	37,148	40,848	35,060	33,284	100.0
	<u>(% share)</u>							
United Kingdom	5.2	6.4	9.0	12.0	9.7	5.9	2,790	8.4
U.S.A.	3.7	11.0	11.1	8.2	12.4	8.4	3,147	9.5
France	18.6	20.3	22.0	18.1	14.7	22.1	6,390	19.2
Denmark	27.7	15.8	13.2	8.9	9.5	5.4	4,092	12.3
Others	44.8	46.5	44.7	52.8	53.7	58.2	16,865	50.7

Table A-3. Major sources or country of origin of top three fishery imports, Philippines, 1993-1998.

Sources	1993	1994	1995	1996	1997	1998	Average	% Share
Fish Meal (quantity in mt)	87,595	112,896	127,466	90,478	120,056	42,989	96,913	100.0
	<u>(% share)</u>							
Peru	82.1	83.4	82.4	69.2	79.3	39.6	74,497	76.9
Chile	6.1	6.5	1.6	14.0	10.1	0.0	6,586	6.8
U.S.A.	3.3	2.5	10.5	11.6	8.3	33.9	9,008	9.3
Others	8.6	6.7	5.5	5.3	2.3	26.5	6,823	7.0
Tuna (quantity in mt)	37,439	35,859	54,843	52,398	53,767	69,343	50,608	100.0
	<u>(% share)</u>							
Papua New Guinea	50.8	44.4	31.2	32.4	20.3	20.4	15,691	31.0
Trust Territory of P.I.	15.8	24.1	29.7	23.1	18.6	0.0	8,823	17.4
Taiwan	5.1	0.6	601	13.3	12.3	0.0	3,180	6.3
Indonesia	9.6	21.0	12.3	9.8	8.0	0.0	4,558	9.0
Singapore	4.8	7.0	5.4	9.7	0.8	0.0	2,122	4.2
U.S.A.	0.1	1.2	0.6	1.6	0.4	0.0	315	0.6
Others	13.9	1.7	14.7	9.9	39.4	79.6	15,920	31.5
Mackerel (quantity in mt)	50,456	56,770	59,951	101,246	94,418	41,148	67,332	100.0
	<u>(% share)</u>							
Japan	87.6	74.2	16.3	12.2	30.4	0.0	22,847	33.9
Taiwan	0.0	6.5	23.8	32.4	39.5	62.5	18,953	28.1
Korea	3.0	7.6	16.9	46.0	7.1	0.0	11,538	17.1
U.S.S.R.	1.9	7.9	3.0	0.6	0.0	0.0	1,303	1.9
United Kingdom	3.8	0.5	7.8	0.9	0.3	0.0	1,356	2.0
Mexico	0.0	0.0	0.0	0.0	0.0	9.7	664	1.0
Others	3.1	3.3	32.3	7.9	22.8	27.8	10,671	15.8

Source: BFAR. *Philippine Fisheries Profile (various years)*.

Table A-4. List of countries importing and exporting fish and fishery products to and from the Philippines, 1994-1998.

Source of fish imports	FOB Value (thousand USD)	% Share of total value of Philippine imports	% Change from previous transaction	Destination of fish exports	FOB Value (thousand USD)	% Share of total value of Philippine exports	% Change from previous transaction
1998							
1. Taiwan	12,694	15.2	-72.8	1. Japan	176,299	33.3	4.5
2. Indonesia	10,584	12.7	170.6	2. USA	102,805	19.4	-7.7
3. Peru	10,574	12.7	-88.9	3. Hong Kong	36,213	6.8	-7.3
4. Japan	10,516	12.6	-76.8	4. United Kingdom	23,677	4.5	-9.7
5. U.S.A.	9,856	11.8	-42.4	5. Germany	22,763	4.3	-28.0
6. Papua New Guinea	6,762	8.1	-37.9	6. Thailand	21,118	4.0	-
7. Singapore	2,678	3.2	-17.4	7. Canada	20,602	3.9	18.3
8. Trust Territory	2,588	3.1	-74.09	8. South Africa	14,207	2.7	27.7
9. Australia	2,550	3.1	-	9. France	11,837	2.2	2.3
10. China	2,298	2.8	-	10. Taiwan	10,543	2.0	16.4
Other countries	12,219	14.7		Other countries	89,935	17.0	
Total value	83,319	100.0		Total value	529,999	100.0	
Total quantity ('000 mt)	165,989			Total quantity ('000 mt)	185,758		
1997							
1. Peru	50,865	36.8	51.31	1. Japan	168,718	31.2	-16.6
2. Japan	17,867	12.9	147.3	2. USA	111,366	20.1	22.4
3. China (Taiwan)	16,993	12.3	14.6	3. Hong Kong	39,069	7.2	21.6
4. USA	9,391	6.8	-16.9	4. Germany	31,623	5.7	43.4
5. Chile	7,085	5.1	-9.4	5. United Kingdom	26,212	4.7	-19.0
6. Papua New Guinea	6,115	4.4	-44.2	6. Korea	17,955	3.1	-17.1
7. Trust Territory	5,580	4.0	-20.9	7. Canada	17,414	3.1	-19.2
8. Morocco	3,819	2.8	27.0	8. Singapore	13,766	2.4	-40.4
9. Korea	3,392	2.4	-75.6	9. France	11,574	2.1	-11.6
				10. South Africa	11,123	2.0	-19.4
Other countries	17,013	12.3		Other countries	101,011	18.4	
Total value	295,016	100.00		Total value	549,831	100.0	
Total quantity ('000 mt)	295			Total quantity ('000 mt)	173,887		
1996							
1. Peru	33,612	27.8	-16.9	1. Japan	202,360	36.8	-26.7
2. China, Taiwan	14,831	12.3	88.0	2. USA	91,022	16.6	-3.9
3. Korea	13,918	11.5	187.6	3. Hong Kong	32,128	5.8	3.8
4. USA	11,307	9.3	-15.1	4. Germany	22,058	4.0	-7.0
5. Papua New Guinea	10,965	9.1	9.8	5. United Kingdom	32,340	5.9	22.8
6. Chile	7,825	6.5	112.9	6. Korea	21,650	3.9	-8.2
7. Japan	7,224	6.0	87.5	7. Canada	21,552	3.9	-0.3
8. Trust Territory	7,052	5.8	-31.0	8. Singapore	23,109	4.2	-
9. Indonesia	3,911	3.2	-6.9	9. China (Taiwan)	9,054	1.6	-2.3
10. Singapore	3,240	2.7	120.7	10. South Africa	13,804	2.5	35.4
Other countries	7,111	5.9		Other countries	80,235	14.6	
Total value	120,996			Total value	549,312	100.0	
Total quantity ('000 mt)	262,586			Total quantity ('000 mt)	164,673		

Continued

Table A-4. Continued.

Source of fish imports	FOB Value (thousand USD)	% Share of total value of Philippine imports	% Change from previous transaction	Destination of fish exports	FOB Value (thousand USD)	% Share of total value of Philippine exports	% Change from previous transaction
1995							
1. Peru	40,444	36.1	31.8	1. Japan	275,972	45.5	-3.4
2. USA	13,322	11.9	171.1	2. USA	98,888	16.3	4.9
3. Trust Territory	10,221	9.1	65.7	3. Hong Kong	30,944	5.1	23.6
4. Japan	3,852	3.4	-80.4	4. United Kingdom	26,345	4.4	7.8
5. Indonesia	4,201	3.8	15.7	5. Germany	23,728	3.9	-18.0
6. Papua New Guinea	9,990	8.9	-10.2	6. Korea	23,570	3.9	39.9
7. Singapore	1,468	1.3	-37.8	7. Canada	21,616	3.6	66.4
8. Morocco	3,007	2.7	-	8. France	13,100	2.2	-
9. Korea	4,839	4.3	160.6	9. South Africa	10,192	1.7	-41.7
10. Taiwan	7,888	7.0	152.4	10. Taiwan	9,263	1.5	52.4
Other countries	12,912	11.5		Other countries	72,410	11.9	
Total value	112,144	100.0		Total value	606,028	100.0	
Total quantity ('000 mt)	270,213			Total quantity ('000 mt)	169,746		
1994							
1. Peru	30,683	32.5		1. Japan	285,739	49.5	
2. Japan	19,677	20.8		2. USA	94,367	16.3	
3. Papua New Guinea	11,122	11.8		3. Germany	28,948	5.0	
4. Trust Territory	6,167	6.5		4. Hong Kong	25,040	4.3	
5. USA	4,914	5.2		5. United Kingdom	24,438	4.2	
6. Chile	3,676	3.9		6. Korea	16,849	2.9	
7. Indonesia	3,631	3.8		7. South Africa	15,657	2.7	
8. China, Rep. (Taiwan)	3,125	3.3		8. Canada	12,990	2.2	
9. Singapore	2,359	2.5		9. Netherlands	8,653	1.5	
10. Korea	1,857	2.0		10. China, Rep. (Taiwan)	6,077	1.0	
Other countries	7,310	7.7		Other countries	58,865	10.2	
Total value	94,521	100.0		Total value	577,623	100.0	
Total quantity ('000 mt)	241,194			Total quantity ('000 mt)	172,080		

Table A-5. Balance of trade (BOT) and relative comparative advantage (RCA) of fish and fishery products by commodity groups, Philippines, 1970-1977.

Year	Item	Import	% of World Total ¹	% Change from previous year	Export	% of World Total ¹	% Change from previous year	Balance of Trade	Revealed Comparative Advantage
A. FISH, fresh, chilled or frozen									
1997	Q (in mt)	161,725	1.52	-2.87	38,353	0.33	9.93		
	V (thou US\$)	64,427	0.27	-16.54	66,455	0.31	-8.66	2,028	0.02
	UV (US\$/mt)	398	-81.98	-14.08	1,733	-5.79	-16.91		
1996	Q (in mt)	166,496	1.60	25.31	34,889	0.31	-15.92		
	V (thou US\$)	77,193	0.32	16.39	72,758	0.34	-13.96	(4,435)	-0.03
	UV (US\$/mt)	464	-79.79	-7.11	2,085	10.42	2.33		
1995	Q (in mt)	132,867	1.32	12.01	41,495	0.39	6.05		
	V (thou US\$)	66,320	0.29	23.31	84,562	0.41	26.71	18,242	0.12
	UV (US\$/mt)	499	-78.12	10.09	2,038	4.79	19.48		
1994	Q (in mt)	118,623	1.22	2.75	39,126	0.37	12.87		
	V (thou US\$)	53,785	0.26	4.41	66,737	0.35	14.37	12,952	0.11
	UV (US\$/mt)	453	-79.05	1.61	1,706	-6.31	1.33		
1993	Q (in mt)	115,449	1.29	-19.11	34,665	0.36	125.05		
	V (thou US\$)	51,515	0.27	-19.35	58,353	0.34	100.70	6,838	0.06
	UV (US\$/mt)	446	-78.76	-0.29	1,683	-6.02	-10.82		
1992	Q (in mt)	142,729	1.65	-2.80	15,403	0.18	-9.56		
	V (thou US\$)	63,873	0.33	-5.22	29,075	0.17	-9.38	(34,798)	-0.37
	UV (US\$/mt)	448	-80.34	-2.50	1,888	-4.94	0.20		
1991	Q (in mt)	146,836	1.69	12.09	17,032	0.20	-10.93		
	V (thou US\$)	67,393	0.36	34.31	32,086	0.20	-10.35	(35,307)	-0.35
	UV (US\$/mt)	459	-78.90	19.82	1,884	-2.05	0.66		
1990	Q (in mt)	130,995	1.54	2,458.50	19,123	0.22	13.30		
	V (thou US\$)	50,176	0.29	5,383.72	35,789	0.24	53.56	(14,387)	-0.17
	UV (US\$/mt)	383	-80.95	114.33	1,872	7.03	35.53		
1985	Q (in mt)	5,120	0.09	46,445.45	16,878	0.27	-67.48		
	V (thou US\$)	915	0.01	2,307.89	23,306	0.36	-68.79	22,391	0.92
	UV (US\$/mt)	179	-86.37	-94.82	1,381	30.96	-4.03		
1980	Q (in mt)	11	0.26	21.00	51,900	1.20	452.13		
	V (thou US\$)	38	0.001	442.86	74,674	1.36	990.29	74,636	1.00
	UV (US\$/mt)	3,454	146.17	-85.79	1,439	12.97	97.47		
1975	Q (in mt)	0	0.00	0.00	9,400	0.32	526.67		
	V (thou US\$)	7	0.00	-12.50	6,849	0.31	656.80	6,842	1.00
	UV (US\$/mt)	23,333	2,595.81	-12.50	729	-4.43	20.77		
1970	Q (in mt)	0	0.00		1,500	0.07			
	V (thou US\$)	8	0.00		905	0.10		897	0.98
	UV (US\$/mt)	26,667	5,286.66		603	40.80			
... data not available; unobtainable					0	more than zero but less than the half the unit used			
- none, magnitude known to be nil or zero					nei	not elsewhere available			

Table A-5. Continued.

Year	Item	Import	% of World Total ¹	% Change from previous year	Export	% of World Total ¹	% Change from previous year	Balance of Trade	Revealed Comparative Advantage
B. FISH, dried, salted or smoked									
1997	Q (in mt)	30	0.00	25.00	753	0.09	5.76		
	V (thou US\$)	147	0.01	-34.67	3,847	0.13	50.63	3,700	0.93
	UV (US\$/mt)	4,900	10.97	-47.73	5,109	46.46	42.43		
1996	Q (in mt)	24	0.00	0.00	712	0.09	44.13		
	V (thou US\$)	225	0.01	-26.71	2,554	0.08	21.68	2,329	0.84
	UV (US\$/mt)	9,375	96.61	-26.71	3,587	-8.97	-15.58		
1995	Q (in mt)	24	0.00	-63.64	494	0.07	-29.93		
	V (thou US\$)	307	0.01	-15.43	2,099	0.07	-5.49	1,792	0.74
	UV (US\$/mt)	12,792	159.89	132.58	4,249	6.01	34.87		
1994	Q (in mt)	66	0.01	144.44	705	0.11	2.77		
	V (thou US\$)	363	0.01	35.96	2,221	0.09	4.67	1,858	0.72
	UV (US\$/mt)	5,500	21.61	-44.38	3,150	-20.58	1.84		
1993	Q (in mt)	27	0.01	8.00	686	0.13	-3.92		
	V (thou US\$)	267	0.01	136.28	2,122	0.10	-7.98	1,855	0.78
	UV (US\$/mt)	9,889	114.35	118.78	3,093	-26.69	-4.22		
1992	Q (in mt)	25	0.01	0.00	714	0.14	-0.70		
	V (thou US\$)	113	0.00	-13.08	2,306	0.10	33.45	2,193	0.91
	UV (US\$/mt)	4,520	-14.24	-13.08	3,230	-31.62	34.38		
1991	Q (in mt)	25	0.00	56.25	719	0.13	32.66		
	V (thou US\$)	130	0.01	3.17	1,728	0.08	36.49	1,598	0.86
	UV (US\$/mt)	5,200	5.35	-33.97	2,403	-38.58	2.89		
1990	Q (in mt)	16	0.00	33.33	542	0.10	-1.09		
	V (thou US\$)	126	0.01	82.61	1,266	0.05	-1.48	1,140	0.82
	UV (US\$/mt)	7,875	81.07	36.96	2,336	-46.47	-0.39		
1985	Q (in mt)	12	0.00	100.00	548	0.12	-55.05		
	V (thou US\$)	69	0.01	4.55	1,285	0.12	-69.90	1,216	0.90
	UV (US\$/mt)	5,750	150.15	-47.73	2,345	-0.36	-33.04		
1980	Q (in mt)	6	0.00	1,900.00	1,219	0.25	204.75	4,203	0.97
	V (thou US\$)	66	0.01	340.00	4,269	0.33	727.33		
	UV (US\$/mt)	11,000	282.03	-78.00	3,502	31.31	171.48		
1975	Q (in mt)	0	0.00	0.00	400	0.09	133233		
	V (thou US\$)	15	0.00	7.14	516	0.09	892.31	501	0.94
	UV (US\$/mt)	50,000	3259.59	7.14	1,290	-7.24	-99.26		
1970	Q (in mt)	0	0.00		0	0.00			
	V (thou US\$)	14	0.00		52	0.02		38	0.58
	UV (US\$/mt)	46,667	7950.99		173,333	3,3542			

Table A-5. Continued.

Year	Item	Import	% of World Total ¹	% Change from previous year	Export	% of World Total ¹	% Change from previous year	Balance of Trade	Revealed Comparative Advantage
C. CRUSTACEANS AND MOLLUSK, fresh, frozen dried, salted									
1997	Q (in mt)	8,654	0.29	67.55	30,820	0.92	-22.52		
	V (thou US\$)	3,329	0.02	18.01	220,975	1.43	0.66	217,646	0.97
	UV (US\$/mt)	385	-93.32	-29.57	7,170	55.63	29.91		
1996	Q (in mt)	5,165	0.17	-16.45	39,779	1.23	15.31		
	V (thou US\$)	2,821	0.02	-6.56	219,537	1.35	-24.55	216,716	0.97
	UV (US\$/mt)	546	-90.65	11.84	5,519	9.93	-34.57		
1995	Q (in mt)	6,182	0.22	26.16	34,497	1.14	-10.83		
	V (thou US\$)	3,019	0.02	34.30	290,987	1.72	-6.23	287,968	0.98
	UV (US\$/mt)	488	-92.37	6.45	8,435	50.94	5.17		
1994	Q (in mt)	4,900	0.17	38.38	38,688	1.29	1.43		
	V (thou US\$)	2,248	0.01	30.85	310,308	1.97	9.96	308,060	0.99
	UV (US\$/mt)	459	-92.22	-5.44	8,021	53.09	8.41		
1993	Q (in mt)	3,541	0.13	110.90	38,141	1.36	4.17		
	V (thou US\$)	1,718	0.01	106.00	282,197	2.16	9.21	280,479	0.99
	UV (US\$/mt)	485	-90.40	-2.33	7,399	58.39	4.84		
1992	Q (in mt)	1,679	0.06	3,897.62	36,615	1.40	-16.66		
	V (thou US\$)	834	0.01	759.79	258,400	2.05	-19.10	257,566	0.99
	UV (US\$/mt)	497	-90.35	-79.49	7,057	46.92	-2.92		
1991	Q (in mt)	42	0.00	35.48	43,936	1.72	25.11		
	V (thou US\$)	97	0.00	-18.49	319,406	2.62	24.40	319,309	1.00
	UV (US\$/mt)	2,310	-95.57	-39.84	7,270	49.22	-0.56		
1990	Q (in mt)	31	0.00	40.91	35,118	1.55	139.71		
	V (thou US\$)	119	0.00	-7.03	256,748	2.32	243.70	256,629	1.00
	UV (US\$/mt)	3,839	-26.39	-34.02	7,311	49.22	43.38		
1985	Q (in mt)	22	0.00	175.00	14,650	0.89	176.10		
	V (thou US\$)	128	0.00	34.74	74,702	1.36	162.64	74,574	1.00
	UV (US\$/mt)	5,818	57.09	-51.00	5,099	52.69	4.88		
1980	Q (in mt)	8	0.00	2,566.67	5,306	0.51	121.08		
	V (thou US\$)	95	0.00	3,066.67	28,443	0.70	242.44	28,348	0.99
	UV (US\$/mt)	11,815	200.62	18.75	5,361	38.70	54.89		
1975	Q (in mt)	0	0.00	-99.70	2,400	0.33	300.00		
	V (thou US\$)	3	0.00	-90.00	8,306	0.52	468.13	8,303	1.00
	UV (US\$/mt)	10,000	346.68	3,233.33	3,461	59.59	42.03		
1970	Q (in mt)	100	0.02		600	0.14			
	V (thou US\$)	30	0.00		1,462	0.27		1,432	0.96
	UV (US\$/mt)	300	-77.81		2,437	99.71			

Table A-5. Continued.

Year	Item	Import	% of World Total ¹	% Change from previous year	Export	% of World Total ¹	% Change from previous year	Balance of Trade	Revealed Comparative Advantage
D. FISH PRODUCTS & PREPARATIONS, whether or not in airtight containers									
1997	Q (in mt)	632	3.06	-18.96	57,386	0.03	14.49		
	V (thou US\$)	1,236	2.22	2.42	137,092	0.02	12.06	135,856	0.98
	UV (US\$/mt)	1,956	-27.48	26.38	2,389	-36.95	-2.13		
1996	Q (in mt)	552	4.20	45.83	70,816	0.03	-33.41		
	V (thou US\$)	1,103	2.17	16.18	133,858	0.02	-34.70	132,755	0.98
	UV (US\$/mt)	1,998	-48.21	-20.33	1,890	-41.30	-1.92		
1995	Q (in mt)	829	3.11	5880.30	48,560	0.05	-98.65		
	V (thou US\$)	1,689	1.99	5938.52	115,215	0.03	-98.83	113,526	0.97
	UV (US\$/mt)	2,037	-35.89	0.97	2,373	-40.00	-13.63		
1994	Q (in mt)	812	0.05	75.00	61,219	3.76	3.80		
	V (thou US\$)	1,908	0.04	106.05	144,410	2.90	13.32	142,502	0.97
	UV (US\$/mt)	2,350	-31.81	17.74	2,359	-22.88	9.17		
1993	Q (in mt)	464	0.03	141.67	58,980	4.02	20.79		
	V (thou US\$)	926	0.02	97.02	127,440	2.84	30.88	126,514	0.99
	UV (US\$/mt)	1,996	-41.75	-18.47	2,161	-29.34	8.36		
1992	Q (in mt)	192	0.01	-61.29	48,828	3.65	1.20		
	V (thou US\$)	470	0.01	-5.43	97,368	2.24	-9.77	96,898	0.99
	UV (US\$/mt)	2,448	-28.54	144.30	1,994	-38.56	-10.84		
1991	Q (in mt)	496	0.04	-49.28	48,248	3.54	5.16		
	V (thou US\$)	497	0.01	-37.88	107,911	2.47	10.83	107,414	0.99
	UV (US\$/mt)	1,002	-69.86	22.50	2,237	-30.17	5.39		
1990	Q (in mt)	978	0.08	4,152.17	45,879	3.58	77.85		
	V (thou US\$)	800	0.02	684.31	97,369	2.43	103.44	96,569	0.98
	UV (US\$/mt)	818	-74.25	-81.55	2,122	-32.26	14.38		
1985	Q (in mt)	23	0.00	-99.92	25,796	2.65	123.25		1.00
	V (thou US\$)	102	0.00	-99.60	47,862	2.35	58.64	47,760	1.00
	UV (US\$/mt)	4,435	110.17	384.84	1,855	-11.14	-28.94		
1980	Q (in mt)	27,606	2.86	-50.17	11,555	1.18	1183.89		
	V (thou US\$)	25,251	1.17	-19.41	30,171	1.41	3286.20	4,920	0.09
	UV (US\$/mt)	915	-59.07	61.72	2,611	19.48	163.75		
1975	Q (in mt)	55,400	7.76	9.70	900	0.12	350.00		
	V (thou US\$)	31,334	3.17	97.07	891	0.09	681.58	(30,443)	-0.94
	UV (US\$/mt)	566	-59.14	79.64	990	-24.28	73.68		
1970	Q (in mt)	50,500	8.33		200	0.03			
	V (thou US\$)	15,900	3.30		114	0.02		(15,786)	-0.99
	UV (US\$/mt)	315	-60.39		570	-27.12			

Table A-5. Continued.

Year	Item	Import	% of World Total ¹	% Change from previous year	Export	% of World Total ¹	% Change from previous year	Balance of Trade	Revealed Comparative Advantage
E. CRUSTACEANS & MOLLUSK, canned and other containers									
1997	Q (in mt)	1,251	0.28	4.95	1,554	0.40	-35.01		
	V (thou US\$)	1,149	0.04	-23.50	6,842	0.24	-12.09	5,693	0.71
	UV (US\$/mt)	918	-86.75	-27.11	4,403	-39.13	35.26		
1996	Q (in mt)	1,192	0.26	-27.14	2,391	0.58	36.86		
	V (thou US\$)	1,502	0.05	-28.61	7,783	0.24	-14.43	6,281	0.68
	UV (US\$/mt)	1,260	-82.64	-2.02	3,255	-57.96	-37.48		
1995	Q (in mt)	1,636	0.40	-8.60	1,747	0.47	-12.87		
	V (thou US\$)	2,104	0.07	21.90	9,096	0.30	3.26	6,992	0.62
	UV (US\$/mt)	1,286	-83.04	33.38	5,207	-37.53	18.51		
1994	Q (in mt)	1,790	0.44	224.86	2,005	0.54	32.17		
	V (thou US\$)	1,726	0.06	169.69	8,809	0.32	36.38	7,083	0.67
	UV (US\$/mt)	964	-85.93	-16.98	4,394	-40.62	3.19		
1993	Q (in mt)	551	0.16	-86.18	1,517	0.45	27.16		
	V (thou US\$)	640	0.03	-81.42	6,459	0.26	28.69	5,819	0.82
	UV (US\$/mt)	1,162	-82.63	34.47	4,258	-41.35	1.21		
1992	Q (in mt)	3,987	1.05	10.93	1,193	0.37	-18.18		
	V (thou US\$)	3,444	0.14	21.70	5,019	0.22	-1.16	1,575	0.19
	UV (US\$/mt)	864	-87.00	9.70	4,207	-40.50	20.79		
1991	Q (in mt)	3,594	1.02	-8.53	1,458	0.51	19.41		
	V (thou US\$)	2,830	0.12	-16.57	5,078	0.25	23.46		0.28
	UV (US\$/mt)	787	-88.13	-8.79	3,483	-51.40	3.39		
1990	Q (in mt)	3,929	1.18	2,035.33	1,221	0.43	12.43		
	V (thou US\$)	3,392	0.16	1,860.69	4,113	0.20	198.48	721	0.10
	UV (US\$/mt)	863	-86.26	-8.18	3,369	-53.00	165.48		
1985	Q (in mt)	184	0.07	-83.94	1,086	0.55	324.22		
	V (thou US\$)	173	0.02	-82.84	1,378	0.17	167.05	1,205	0.78
	UV (US\$/mt)	940	-76.07	6.89	1,269	-68.83	-37.05		
1980	Q (in mt)	1,146	0.67	-59.07	256	0.20	8,523.33		
	V (thou US\$)	1,008	0.13	-50.59	516	0.08	5,060.00	(492)	-0.32
	UV (US\$/mt)	880	-81.34	20.73	2,016	-59.71	-93.95		
1975	Q (in mt)	2,800	2.21	16.67	0	0.00	0.00		
	V (thou US\$)	2,040	0.56	145.78	10	0.00	-37.50	(2,030)	-0.99
	UV (US\$/mt)	729	-74.88	110.67	33,333	923.08	-37.50		
1970	Q (in mt)	2,400	2.36		0	0.00			
	V (thou US\$)	830	0.51		16	0.01		(814)	-0.96
	UV (US\$/mt)	346	-78.55		53,333	3119.86			

Table A-5. Continued.

Year	Item	Import	% of World Total ¹	% Change from previous year	Export	% of World Total ¹	% Change from previous year	Balance of Trade	Revealed Comparative Advantage
F. OILS & FATS, aquatic animal origin									
1997	Q (in mt)	852	0.11	70.40	1	0.00	-83.33		
	V (thou US\$)	755	0.15	85.05	5	0.00	-89.36	(750)	-0.99
	UV (US\$/mt)	886	43.27	8.60	5,000	788.83	-36.17		
1996	Q (in mt)	500	0.06	45.35	6	0.00	-57.14		
	V (thou US\$)	408	0.08	39.73	47	0.01	-56.88	(361)	-0.79
	UV (US\$/mt)	816	47.04	-3.87	7,833	1544.00	0.61		
1995	Q (in mt)	344	0.30	-11.79	14	0.00	-72.00		
	V (thou US\$)	292	0.06	-25.13	109	0.03	-75.00	(183)	-0.46
	UV (US\$/mt)	849	-81.85	-15.12	7,786	1731.39	-10.71		
1994	Q (in mt)	390	0.04	-9.72	50	0.01	-51.92		
	V (thou US\$)	390	0.10	-9.72	436	0.13	-48.46	46	0.06
	UV (US\$/mt)	1,000	128.51	0.00	8,720	2399.53	7.20		
1993	Q (in mt)	432	0.06	-59.21	104	0.02	-44.68		
	V (thou US\$)	432	0.13	-57.35	846	0.31	-50.84	414	0.32
	UV (US\$/mt)	1,000	111.47	4.54	8,135	1902.82	-11.14		
1992	Q (in mt)	1,059	0.18	67.30	188	0.03	4.44		
	V (thou US\$)	1,013	0.32	56.81	1,721	0.70	14.81	708	0.26
	UV (US\$/mt)	957	80.37	-6.27	9,154	1897.78	9.92		
1991	Q (in mt)	633	0.09	34.11	180	0.03	97.80		
	V (thou US\$)	646	0.22	41.36	1,499	0.63	129.56	853	0.40
	UV (US\$/mt)	1,021	152.60	5.40	8,328	2,242.33	16.05		
1990	Q (in mt)	472	0.04	686.67	91	0.01	-84.47		
	V (thou US\$)	457	0.12	1,071.79	653	0.32	-81.51	196	0.18
	UV (US\$/mt)	968	185.26	48.96	7,176	2,461.22	19.06		
1985	Q (in mt)	60	0.02	-22.08	518	0.20	-1160		
	V (thou US\$)	39	0.01	-48.68	3,215	4.62	-8.98	3,176	0.98
	UV (US\$/mt)	650	-42.83	-34.14	6,207	2,201.33	2.97		
1980	Q (in mt)	77	0.01	-23.00	586	0.08	17.20		
	V (thou US\$)	76	0.02	24.59	3,532	1.09	177.89	3,456	0.96
	UV (US\$/mt)	987	101.84	61.81	6,207	1,282.93	137.11		
1975	Q (in mt)	100	0.02	-50.00	500	0.08	166,566.7		
	V (thou US\$)	61	0.03	60.53	1,271	0.63	31,675.00	1,210	0.91
	UV (US\$/mt)	610	59.01	221.05	2,542	652.81	-80.94		
1970	Q (in mt)	200	0.03		0	0.00			
	V (thou US\$)	38	0.02		4	0.00		(34)	-0.81
	UV (US\$/mt)	190	-15.46		13,333	6,534.33			

Table A-5. Continued.

Year	Item	Import	% of World Total ¹	% Change from previous year	Export	% of World Total ¹	% Change from previous year	Balance of Trade	Revealed Comparative Advantage
G. MEALS, SOLUBLES AND SIMILAR FEEDSTUFF, aquatic animal origin									
1997	Q (in mt)	120,056	2.78	32.23	84	0.00	600.00		
	V (thou US\$)	64,260	2.36	14.31	46	0.00	820.00	(64,214)	-1.00
	UV (US\$/mt)	535	-15.06	-13.55	548	-6.28	31.43		
1996	Q (in mt)	90,795	2.16	-28.79	12	0.00	-96.23		
	V (thou US\$)	56,216	2.08	-7.93	5	0.00	-96.24	(56,211)	-1.00
	UV (US\$/mt)	619	-3.38	29.29	417	-27.59	-0.38		
1995	Q (in mt)	127,501	2.78	12.94	318	0.01	-24.47		
	V (thou US\$)	61,058	2.54	27.81	133	0.01	-19.88	(60,925)	-1.00
	UV (US\$/mt)	479	-8.85	13.17	418	-10.91	6.07		
1994	Q (in mt)	112,895	2.30	28.88	421	0.01	-74.03		
	V (thou US\$)	47,773	2.17	22.33	166	0.01	-75.19	(47,607)	-0.99
	UV (US\$/mt)	423	-5.50	-5.08	394	-4.00	-4.46		
1993	Q (in mt)	87,598	2.24	22.17	1,621	0.04	578.24		
	V (thou US\$)	39,053	2.12	-5.30	669	0.04	543.27	(38,384)	-0.97
	UV (US\$/mt)	446	-5.32	-22.48	413	-6.01	-5.16		
1992	Q (in mt)	71,704	2.09	72.63	239	0.01	753.57		
	V (thou US\$)	41,239	2.09	68.21	104	0.01	372.73	(41,135)	-0.99
	UV (US\$/mt)	575	0.36	-2.56	435	-20.19	-44.62		
1991	Q (in mt)	41,536	1.23	-29.73	28	0.00	-6.67		
	V (thou US\$)	24,516	1.36	-17.56	22	0.00	0.00	(24,894)	-1.00
	UV (US\$/mt)	590	10.06	17.31	786	67.80	7.14		
1990	Q (in mt)	59,106	1.77	154.19	30	30	0.00		
	V (thou US\$)	29,739	1.82	507.04	22	22	0.00	(29,717)	-1.00
	UV (US\$/mt)	503	2.78	138.82	733	733	75.73		
1985	Q (in mt)	23,253	0.76	-5.56	0	0.00	0.00		
	V (thou US\$)	4,899	0.48	-51.19	0	0.00	0.00	(4,899)	-1.00
	UV (US\$/mt)	408	-36.08	-48.31	0	0.00	0.00		
1980	Q (in mt)	24,621	1.10	-14.21	-	0.00	0.00		
	V (thou US\$)	10,036	0.88	24.03	-	0.00	0.00	(10,036)	-1.00
	UV (US\$/mt)	408	-19.81	-19.81	-	0.00	0.00		
1975	Q (in mt)	28,700	1.25	198.96	-	0.00	0.00		
	V (thou US\$)	7,488	1.15	397.54	-	0.00	0.00	(7,488)	-1.00
	UV (US\$/mt)	261	-7.80	66.43		0.00	0.00		
1970	Q (in mt)	9,600	0.32		-				
	V (thou US\$)	1,505	0.28		-			(1,505)	-1.00
	UV (US\$/mt)	157	-12.92						

¹ The third item in the unit value (UV) row indicate the rate at which the Philippine unit value is higher or lower than the average world unit value. A positive value denote that the Philippine price is higher than average world price, while a negative value suggests otherwise.