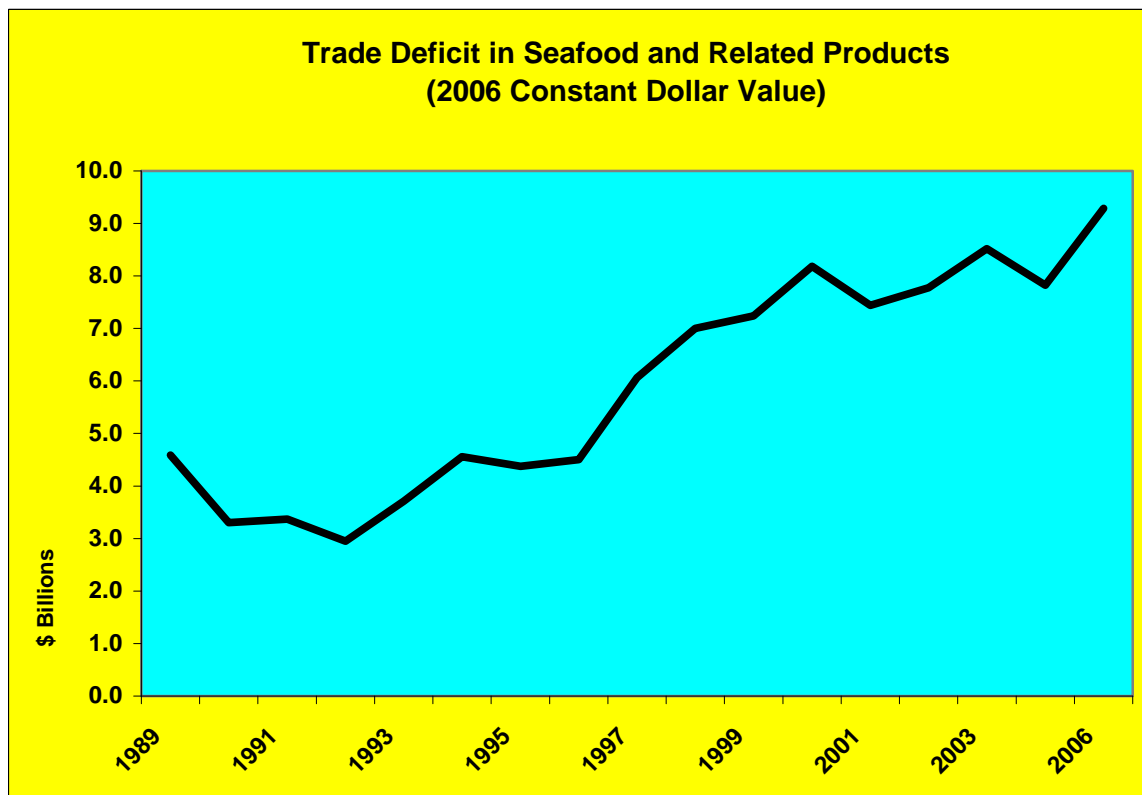


**International Trade in Seafood and Related Products:  
An Assessment of U.S. Trade Patterns**



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## Executive Summary

The United States engaged in the trade of seafood with up to 228 nations between 1989 and 2006. In 2006, the United States imported seafood and related products from 138 nations and exported to 157 nations. The top five nations receiving exports were Japan (1.8 billion pounds and \$947.6 million), Canada (706.0 million pounds and \$695.1 million), China (\$1.3 billion pounds and \$485.0 million), South Korea (1.2 billion pounds and \$415.2 million), and Germany (492.0 million pounds and \$263.3 million). The five nations from which we imported the most seafood products, in value, were Canada (1.3 billion pounds and \$2.2 billion), China (2.84 billion pounds and \$2.0 billion), Thailand (1.7 billion pounds and \$1.8 billion), Chile (678.0 million pounds and \$975.4 million), and Indonesia (640.0 million pounds and \$784.5 million). Based on data available from the National Marine Fisheries Service, foreign imports accounted for approximately 87.0 % of the volume (live weight equivalent) of edible seafood consumed in America in 2006. The U.S. imported \$13.4 billion and exported \$4.1 billion of seafood and related products in 2006.<sup>1</sup> The fact that we imported more than we exported means we had a deficit in our balance of trade (balance of payments) of approximately \$9.3 billion. The deficit, in real dollar terms, has been increasing at an average annual rate of 6.02 % per year.

The seafood trade deficit is in large part due to the rapid international expansion of low-cost, aquacultured, marine products. Many nations have expanded their aquaculture industry because they enjoyed a comparative advantage over our wild harvesters and our emerging aquaculture industry. This has been particularly true for shrimp and salmon products. Another reason for increased imports by the U.S. has been restrictions on imports of farm-raised products imposed by other nations<sup>2</sup> that have subsequently enhanced market opportunities in the United States. Additional factors include the relative strength of the U.S. economy which has diverted products in international trade from other major seafood importing markets such as Japan and the European Union, to domestic markets. The value of the dollar relative to other currencies is a related factor attracting imports to the U.S. as were the less stringent U.S. health standards for contaminants found in imported, aquacultured products. In addition, a federal program to globalize trade by reducing or eliminating trade barriers has attracted products to the U.S. marketplace.<sup>3</sup> Lastly, the regulatory environment in the U.S. for wild capture and aquacultured marine resources reduced the productivity of domestic seafood suppliers. For example, despite numerous attempts, Congress has failed to pass a comprehensive aquaculture act to liberalize the permitting process for offshore aquaculture facilities in the Exclusive Economic Zone (EEZ).

The end result of increased imports is falling seafood prices for retail consumers and increased consumption of high volume seafood products. Both per capita and total

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<sup>1</sup> All dollar values presented in section five are real or constant dollar values and expressed in terms of year 2006 values.

<sup>2</sup> In 1997, the EU banned imports of shrimp from Bangladesh, and in 2004, the EU restricted imports of shrimp raised in Southeast Asia.

<sup>3</sup> NAFTA, the WTO trade rounds, etc.

consumption of seafood in the U.S. have increased at the rate of 1.32% per year and 2.92 % per year, respectively. Unfortunately, these falling prices have also created a financial crisis in some sectors of the domestic harvesting industry.

There is an emerging trend, however, of declining supplies of foreign imports. In 2007, the U.S. imported less shrimp than in 2006; shrimp imports dropped from \$4.1 billion to \$3.8 billion. The total value of imports of all products, however, was marginally down relative to the value of imports in 2006—from \$13.4 billion in 2006 to \$13.45 billion (2006 constant dollar value) in 2007. It is anticipated that the weakened U.S. dollar combined with strengthening currencies of other nations will divert foreign supplies to other nations in 2008. This has already happened in early 2008 with EU nations increasing their imports of shrimp from Southeast Asian nations.

In addition to the weakening dollar, the U.S. is experiencing severe economic problems, which can be expected to affect the domestic demand for seafood. Although there is conflicting evidence to support the notion that fish is a luxury commodity compared to a necessity, there is strong evidence to suggest that the domestic consumption of seafood, at least on a per capita basis, will likely decline in 2008. Higher energy prices and a weakened U.S. dollar will cause a downward shift in the away from home demand for seafood in 2008, which is the primary market outlet for seafood consumption. The economic stimulus package of the current administration may offset reduced discretionary income in 2008, but it is not expected to substantially affect the demand for seafood. Countering this potential outcome, however, is a report from H.M. Johnson Associates (2001), which predicted U.S. supplies would increase by 40.5 % between 1999 and 2025. Similarly, reports by the United States Department of Agriculture and various private firms all forecast enhanced demand and sales in the future.

What will actually be the levels of trade in the near to intermediate future is highly uncertain. General trends suggest that the domestic demand for seafood will increase, the increasing demand will be increasingly satisfied from foreign produced aquacultured products, and domestic prices will modestly increase. It is extremely difficult to predict the market demand and supply for seafood. Product movement within markets and between consumers and producers is determined by what consumers are willing to pay and what producers or suppliers are willing to accept. World events can influence the trade in seafood. The U.S. has initiated various programs to expand offshore aquaculture, and if successful, could drastically change its dependency on foreign imports.

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## 1.0 Trade Patterns in U.S. Seafood and Related Products

### 1.1. Introduction

The United States seafood industry is undergoing a major transition involving increasing flows of internationally traded products. The seafood trade deficit has been of concern to trade and government trade policy analysts for at least the last decade. The Secretary of Commerce Carlos Gutierrez (USDOC, 2008) stated that “With an \$8 billion seafood trade deficit, the United States is largely dependent on farmed seafood imported from other nations to meet domestic market demand. Last year, the United Nations' Food and Agriculture Organization reported that half of global seafood production came from aquaculture.”

As the Secretary's statement reflects, the seafood trade deficit is in large part due to the rapid international expansion in low-cost, aquacultured, marine resources. This has been particularly true for shrimp and salmon products over the last decade. Additional factors included the relative strength of the U.S. economy relative to other major seafood importing markets such as Japan and the European Union diverting products to domestic markets. The value of the dollar relative to other currencies is a related factor attracting imports to the U.S. as were the less stringent health standards for contaminants found in trace amounts in imported, aquacultured products. A federal program to globalize trade by reducing or eliminating trade barriers has attracted products to the U.S. marketplace.<sup>4</sup> Lastly, the extensive, rigid, regulatory environment in the U.S. for wild capture and aquacultured marine resources reduced the productivity of domestic seafood suppliers. Despite numerous attempts, for example, Congress has failed to pass a comprehensive aquaculture act to liberalize the permitting process for offshore aquaculture facilities in the Exclusive Economic Zone (EEZ). The end result was falling seafood prices for retail consumers and increased consumption of high volume seafood products. Unfortunately, these falling prices have also created a financial crisis in some sectors of the domestic harvesting industry.

This declining trend in seafood prices has not gone unchallenged. The Gulf of Mexico shrimp fishing and processing industry petitioned the International Trade Commission (ITC) to prevent dumping of shrimp products in U.S. markets. The state of Alaska passed legislation preventing the development of salmon aquaculture in its territorial sea to reduce competition with wild capture Pacific salmon fishermen and processors.

Marketing campaigns have developed for wild shrimp and Pacific salmon to increase consumer demand and consequently their price level. The “Wild American Shrimp” marketing campaign developed to promote wild-capture shrimp from the Gulf of Mexico. Alaskan “Copper River” salmon is an example of a successful marketing strategy designed to differentiate Pacific salmon from wild caught species in other Alaskan rivers, and from aquacultured Atlantic salmon.

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<sup>4</sup> NAFTA, the WTO trade rounds, etc.

Another successful anti-dumping petition was submitted by domestic catfish farmers to prevent competition from southeast Asian basa farmers. While initially successful in protecting the domestic producers, subsequent market conditions lead to the further demise of domestic catfish aquaculture; e.g., the rise in grain prices in conjunction with the development of biofuel technologies.

It has not only been a rise in the opportunity costs for pond raised catfish caused by higher fuel prices that has lead to a new cycle in the domestic fishing industry. The recent declines in the U.S. dollar relative to other world currencies and falling interest rates have created an increased demand for U.S. produced products which include seafood products. U.S. exports because of the cheaper dollar value will become more competitive in the world marketplace. Imports to the U.S. will become more expensive for the same reasons. This has resulted in higher prices for seafood products just as it has resulted in higher petroleum prices at the gas pump. Unfortunately, these higher fuel prices are detrimental to the harvesting of wild capture fishery products just at the time when seafood prices, in general, began to increase after 2003. In addition, these rising ex-vessel prices, because of the U.S. regulated open access fishery management regime, may only exacerbate the financial crisis in the domestic fisheries by raising harvesting costs while simultaneously reducing consumer net benefits. Because the international markets for seafood is complex, the results of these interactions between complimentary and substitute products is difficult to determine.

## **1.2. Organization of Study**

Addressing this complex milieu to create some clarity for the issues involved in international seafood trade is the focus of the following assessment of trade trends. Too often, trade trends are reported as simple time series with little explanation or insight given. Some idiot savants would take it upon themselves to forecast future trends based on recent trends well into the future as a constantly increasing, unchanging, or decreasing trend. Instead of just presenting trends in this assessment, an effort is made to provide some understanding of the underlying relationships that drive them. To accomplish this goal, first, trade patterns in U.S. seafood and related products are presented simply because so little attention has been given to examining these trends. And yet, an increasing reliance on foreign products could be causing problems for domestic commercial fishermen.

Second, understanding trade and the balance of payments requires a specific language or jargon. This jargon is reviewed in section 2 to ensure that later trends are understood. Exchange rates, current versus constant dollars, deflators, and indices are discussed and explained. For example, a deficit in the current account should be compared to the capital and financial accounts to determine the nature of the trade flow. If, for example, a deficit exists in the current account, it could be borrowed against or funded by drawing on the capital account. If this is the case, then the country is foregoing capital assets for more goods and services. With this introduction to basic economic measures, some important trends in U.S. fisheries are examined. One topic discussed at length is the importance of balance of payments in general and the seafood



trade deficit and surpluses in particular to the domestic economy and consumers. In this section, not only how overall total U.S. fish and seafood consumption has changed between 1980 and 2006, but how the share of imports relative to our domestic consumption has changed is the focus.

The third section focuses on our trading partners. While jockeying for position, the countries with which the U.S. primarily trades with have remained relatively stable over time. Japan, South Korea, China, and the United Kingdom are among the top four U.S. export markets since 1989. While Canada has always been a major export market for the U.S., the adoption of the NAFTA has made Mexico a member of the top ten trading partners. The top five nations exporting to the U.S. between 1989 and 2006 are Canada, Thailand, China, Ecuador, and Mexico representing 52.0 % of the total value of all seafood and related products imported by the United States between 1989 and 2006. A prime determinant of the import country trade position is apparently the price of the seafood product demanded. A country's position is related to the change in import price relative to other countries' prices.

Section four investigates the trade trends over time by major product groupings. In terms of reducing the trade deficit, the seafood products that have increased their export level, such as scallops, reflect improved abundance through restrictive fisheries management policies. Seafood products whose import levels have increased, on the other hand, are highly desired, edible consumer products; e.g., shrimp, lobster, tuna, and salmon. Shrimp, salmon, and tilapia, which have been increasing in the U.S. market since 1992, are primarily aquacultured products. These increases in consumption are also coupled with declines in price to both final consumers increasing their net benefits and to harvesters decreasing their net benefits.

The domestic and international markets are discussed in section five where the point is made that many factors can affect the domestic and global market for seafood. In 2008, the worsening economy of the U.S. and the further devaluation of the dollar will likely deter producers in many nations from exporting large quantities to the U.S.; this will particularly be the case if the Euro continues to appreciate relative to the dollar. This started showing in 2007, when U.S. imports of shrimp declined by approximately 150.0 million pounds, and the import price increased by approximately \$0.04 per pound. If nothing else, the increased dependency on imports equates to dollars and jobs leaving the United States only if it displaces domestic sources of supply. With the potential of U.S. aquaculture still tentative and domestic marine fisheries unlikely to increase output levels in the near future, imports represent the sole source of supply to meet domestic demand. This increased reliance on imports equates to enhanced consumer benefits because of an abundant supply of low cost seafood. However, when exchange rates are examined for nations trading in seafood, the U.S. dollar weakened against all currencies between 2006 and 2007, except for Japan and Mexico. Between 2007 and January 2008, the dollar further weakened for all currencies, except that for the Rupiah of Indonesia. This trend means that imports will become more expensive while exports will be relatively cheaper on the global market. The bottom line for the U.S. consumer will be reduced supplies and higher prices for seafood and related products in 2008.

## **2.0 Understanding Trade and the Balance of Payments**

### **2.1. The Basics: Concepts, Terms, and Definitions**

Thanks to the frequency of press articles about U.S. dependency on imported oil, individuals understand many of the basic aspects of the balance of payments. For example, when a story presents information on the dollar value of imported oil vs. the dollar value of exported oil, individuals usually relate that to a deficit in the trade of oil. More formally, the balance of payments or BOPs reflects the difference between the total value of all imports and total value of all exports.

There are three main categories associated with the balance of payments (BOPs) (Heakal, 2007):<sup>5</sup> (1) the current account, (2) the capital account, and (3) the financial account. There are additional sub-divisions within the three major categories with each accounting for a different type of international monetary transaction.

#### **2.1.1 The Current Account**

The current account is used to mark the movement of goods and services in and out of a nation. The current account includes credits and debits on the trade of merchandise. Merchandise includes goods such as raw materials and manufactured goods. Services include receipts from tourism, transportation, engineering, business fees, and royalties from patents and copyrights. The dollar value of the imports and exports of all goods and services is the balance of trade or BOT. When a nation imports more than in exports, in value or currency terms, it is said to have a deficit. If the dollar value of its exports exceeds its dollar value of its imports, the nation is said to have a trade surplus.

#### **2.1.2 The Capital Account**

All international capital transfers are recorded in the capital account. Capital transfers include the acquisition or disposal of non-financial assets (e.g., land) and non-produced assets (e.g., a mine use for the extraction of coal). This refers to the acquisition or disposal of non-financial assets (for example, a physical asset such as land) and non-produced assets, which are needed for production but have not been produced, like a mine used for the extraction of diamonds.

#### **2.1.3 The Financial Account**

The financial account documents monetary flows related to investment in business, real estate, bonds, and stocks. In the financial account, international monetary flows related to investment in business, real estate, bonds and stocks are documented. The financial account also includes government owned assets, such as foreign reserves and gold.

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<sup>5</sup> Heakel, R. (2007) provides a comprehensive discussion about the balance of payments, terms of trade, and other aspects related to trade. This information can be obtained from Investopedia. Much of the material on the three accounts is from Heakel.

We have three categories associated with the balance of payments--well, so what? For one thing, the current account should be balanced against the combined level of the other two accounts—the capital and financial accounts. As argued by Heakel, however, this rarely happens. If there is a deficit in the current account, the deficit may be borrowed or funded by drawing on the capital account. If the current account has a deficit, which is financed by the capital account, the country is foregoing capital assets for more goods and services.

#### **2.1.4 The Exchange Rate**

Another major term related to the balance of payments and trade is the **exchange rate**. The exchange rate is a measure of the rate at which a country's currency exchanges for those of other nations. In recent years, the EURO has substantially risen in value relative to the dollar, and just this year, the Canadian dollar has increased in value relative to the U.S. dollar. On December 14<sup>th</sup> of 2007, one Canadian dollar was worth approximately \$1.01 U.S. dollars, and one EURO was worth approximately \$1.44 U.S. dollars. In the situation of rising exchange rates, relative to the dollar, our goods and services cost less in other nations while the goods and services of other nations cost more in the United States. As the value of the dollar depreciates, as it has been doing for the past few years relative to many nations, it costs more to purchase imports, but it also decreases the costs of purchasing U.S. exports. Alternatively, a low set of rates of exchange (low prices in home country of foreign currencies) hampers exports and stimulates imports. In the case of high exchange rates (which is what is occurring with the EURO relative to the U.S. dollar), exports are stimulated with imports being restricted, and thus, tending to generate a balance of payments surplus.

The United States imports fish and seafood products from approximately 215 nations. In 2006, the top five nations exporting to the United States were Canada, China, Thailand, Chile, and Indonesia (Table 2.1). The majority of those nations had favorable exchange rates for exporting to the U.S. Examination of the exchange rates (amount of foreign currency per U.S. dollar) for the top five exporting nations to the U.S. reveals that acquiring goods and services, particularly fish and related products, became less expensive for U.S. consumers (Table 2.2). The value of foreign currency, in all cases except Canada, has dramatically declined relative to U.S. currency. For example, in 1989, one U.S. dollar exchanged for approximately 26 Baht in Thailand, but in 2006, one U.S. dollar exchanged for almost 38 Baht. When indices for the quantities and values of imports to the U.S. are matched to the exchange rates, we find that quantities exported to the U.S. increased for all nations, except Canada (Table 2.3). The imported value, however, increased for all five nations.

Table 2.1 Top 20 Nations with Highest Dollar Values of Exports of Fish to U.S., 2006

COUNTRY	Rank by Value	Value (2006 = 100)	Percent of Live Weight	Percent of Total Import Value
CANADA	1	2,220,000,000	11.24	16.55
CHINA	2	1,960,000,000	24.44	14.59
THAILAND	3	1,810,000,000	14.62	13.50
CHILE	4	975,000,000	5.84	7.27
INDONESIA	5	785,000,000	5.51	5.85
VIETNAM	6	653,000,000	4.16	4.86
ECUADOR	7	571,000,000	4.30	4.26
MEXICO	8	477,000,000	5.02	3.55
RUSSIAN FEDERATION	9	375,000,000	1.30	2.80
INDIA	10	324,000,000	1.62	2.41
PHILIPPINES	11	270,000,000	2.75	2.02
JAPAN	12	208,000,000	0.82	1.55
BANGLADESH	13	193,000,000	0.68	1.44
MALAYSIA	14	165,000,000	1.08	1.23
NORWAY	15	157,000,000	0.87	1.17
HONDURAS	16	146,000,000	0.84	1.09
ICELAND	17	140,000,000	1.20	1.04
BRAZIL	18	130,000,000	0.41	0.97
NEW ZEALAND	19	126,000,000	0.63	0.94
CHINA - TAIPEI	20	115,000,000	1.37	0.86

Table 2.2. Exchange Rates for Top Five Exporting Nations to U.S., 1989-2006<sup>a</sup>

Year	Canada: Dollar	China: Yuan	Thailand: Baht	Chile: Peso	Indonesia: Rupiah
1989	1.18	3.77	25.72	266.43	1,769.95
1990	1.17	4.79	25.61	304.64	1,842.65
1991	1.15	5.33	25.53	349.05	1,950.16
1992	1.21	5.53	25.42	362.35	2,029.84
1993	1.29	5.78	25.33	404.02	2,087.04
1994	1.37	8.64	25.16	420.10	2,160.62
1995	1.37	8.37	24.92	396.52	2,248.38
1996	1.36	8.34	25.36	412.24	2,342.23
1997	1.38	8.32	30.48	419.24	2,833.99
1998	1.48	8.30	41.11	460.22	9,812.73
1999	1.49	8.28	37.87	508.27	7,822.31
2000	1.49	8.28	40.16	538.99	8,387.93
2001	1.55	8.28	44.50	633.11	10,231.09
2002	1.57	8.28	43.02	688.38	9,297.01
2003	1.40	8.28	41.54	690.04	8,574.17
2004	1.30	8.28	40.26	608.93	8,932.72
2005	1.21	8.19	40.23	559.56	9,699.15
2006	1.13	7.97	37.86	530.23	9,158.33

<sup>a</sup>Foreign currency per U.S. dollar.

Table 2.3. Indexes of Quantities and Value of Imports for Top Five Nations<sup>a</sup>

YEAR	Nation									
	Canada		China		Thailand		Chile		Indonesia	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
1989	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1990	93.5	93.4	125.8	127.2	109.1	112.9	60.3	124.4	114.9	126.3
1991	91.0	94.5	115.7	87.5	141.2	154.6	68.2	130.8	225.7	200.9
1992	81.5	84.6	187.1	125.2	142.9	159.9	73.9	137.2	216.8	207.0
1993	70.0	79.1	197.7	88.6	118.7	173.4	92.6	167.3	204.1	190.4
1994	58.5	80.8	211.1	75.3	129.8	224.5	104.0	181.4	219.4	204.4
1995	59.0	78.6	253.9	88.0	108.4	207.0	68.9	203.8	225.7	172.8
1996	56.5	79.1	277.4	80.8	99.1	184.1	83.6	240.4	221.9	217.5
1997	60.5	88.5	282.9	89.8	102.7	189.5	68.0	260.3	234.7	270.2
1998	66.5	94.0	333.6	89.3	130.7	224.5	82.0	303.2	293.3	321.1
1999	75.5	112.6	386.6	118.0	172.9	248.7	66.4	296.2	358.4	322.8
2000	69.5	123.1	474.7	154.6	174.4	282.3	86.2	382.1	372.4	371.9
2001	73.0	122.0	488.5	169.9	172.9	244.6	101.4	362.8	427.2	382.5
2002	79.0	126.9	659.0	220.5	174.4	204.3	114.9	373.1	461.7	395.6
2003	73.5	129.1	829.5	282.9	204.6	209.7	128.2	475.6	512.7	414.9
2004	74.5	125.3	958.5	298.4	201.7	193.5	120.9	464.1	670.8	593.9
2005	71.0	123.1	1,064.5	336.3	221.9	209.7	130.0	510.9	766.5	658.8
2006	65.0	122.0	1,308.8	436.5	245.0	243.3	121.9	625.0	816.2	688.6

<sup>a</sup>Index measures percentage change in quantity and value relative to base year, which is 1989 in this case.

### 2.1.5 Deflators, Constant Dollar Value, and Index Numbers

In examining trade or other economic statistics, it is a common practice to convert nominal or current dollar values to constant dollar values (e.g., the value of a dollar in 2005 in terms of its value in 2007). The current dollar value is the value of a dollar without adjusting its value for inflation; as such, a current dollar is always one dollar. The constant dollar value is also often referred to as the real value. To many individuals, understanding these metrics is confusing and complicated. Why bother with expressing the dollar value in terms of some arbitrary base year? In this section, we provide a brief discussion on reasons for converting nominal values to constant dollar values, types of deflators, and some basic aspects of index numbers.

Inflation causes the value of currency to change over time. In order to compare changes in the value of currency over time, we need to be able to convert values to constant currency or constant dollar values. For example, the price of 26-30 count frozen shrimp from Thailand equaled \$3.82 US in 1995; what was its value in 2006 dollars?

Using an appropriate deflator, which in this case is the gross national product implicit price deflator, we find that the value of one pound of 26-30 count shrimp imported from Thailand equaled \$4.82 US in 2006 dollars.<sup>6</sup>

Why use 2006 constant dollar values rather than some other base year values? There is absolutely no correct answer to the question. The U.S. Bureau of Labor Statistics defines the base or reference year as the point in time used as a reference point for comparison with some future time period. Most U.S. government agencies, and particularly for the assessment of military expenditures, however, require all dollar values to be converted to the most current constant dollar value or to the period for which appropriate metrics are available to convert to constant dollars. Consider the price of gasoline, which many individuals are complaining about at the present time. In 1976, the nominal price was \$0.62 per gallon, and in 2006, the nominal or current price equaled \$2.33 per gallon. After adjusting for inflation and price movements, has the price of gasoline really increased by 275.8 %? If we consider the current 1976 price of \$0.62, but adjust for inflation, the 1976 price was really \$2.46 per gallon in 2006 dollars. We see, therefore, that the real price of gasoline actually declined between 1976 and 2006. A remaining point is that selection of the base year depends upon the purpose of the analysis. For example in our illustration of gasoline prices, what if we wanted to know the 2006 price in terms of 1976 values. Using an appropriate deflator for the consumer price of gasoline, we find that the 2006 price of \$2.33 equaled \$0.59 in 1976 dollars.

What are deflators and how do we use them? The Bureau of Labor Statistics (BLS) defines a deflator as some value or conversion factor that allows values to be measured over time in terms of some constant base or reference value. The International Price Program uses import and export price indices to deflate the dollar values of imports and exports. The U.S. national accounts deflate all components by separate deflators; for example gross national product (GNP) equals consumption expenditures plus net investment plus government expenditures plus exports minus imports. Each component is deflated with a different price index to ensure that GNP figures are comparable.

Unfortunately, selection of the best or most appropriate deflator to use, particularly relative to international trade, remains an unanswered question. Why should we even care, however, about which deflator to use? The answer is that different deflators can depict different trends over time, particularly in the trade balance of a given commodity. In a paper by Moore (1983), it was demonstrated that depending upon which deflator was used to convert nominal values of imports and exports of merchandise trade, it was possible to have a trade surplus or deficit in merchandise trade. Moore compared the balance of trade in current dollars to the U.S. official constant dollar series, a series proposed by the head statistician (Denison) at the Department of Commerce, and a series constructed using a deflator proposed by Fabricant.

The official method of the U.S. Department of Commerce is to convert nominal values of imports to constant dollars by deflating using an import price deflator, and to

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<sup>6</sup> The choice of which deflator to use to obtain constant dollar values remains unresolved. More will be discussed about the use of trade deflators later in this section.

convert nominal values of exports to constant dollars by deflating using an export price deflator. The difference between the two represents the balance of trade. Consider a series on the total nominal value of imports and exports of fish and related products for the period 1989 through 2006. It is relatively well known that the U.S. has run a trade deficit in fish and related products, but just how big is that deficit. Well, the size of the deficit depends upon the deflator used to convert nominal values to constant dollar values. We consider the official method in which import values are deflated by the import price index and export values are deflated by the export price index; we also deflate using the gross national product implicit price deflator (i.e., the method proposed by Fabricant, which has been widely used to convert nominal trade values to constant dollar values; and the method proposed by Denison). Another deflator often used to deflate trade values is the consumer price index (CPI); we do not examine the use of the CPI in this report.

In terms of current or nominal (unadjusted for inflation) values, the deficit increased from \$3.1 billion in 1989 to \$9.3 billion in 2006. When we consider the three various deflators, we find that the deficit increased from \$3.8 billion (official series), \$3.9 billion (Denison's method), and \$4.6 billion (Fabricant) to \$9.3 billion in 2006 (Table 2.4). Moreover, we find varying trends in the trade deficit. For example, using the officially recommended deflators, the trade deficit decreased by 1995 and 1996--\$3.6 to \$3.3 billion; based on the approach recommended by Denison, the deficit increased from \$4.0 to \$4.1 billion; and based on the framework of Fabricant, the deficit increased from \$4.4 to \$4.5 billion between 1995 and 1996.

There is no consistency in the magnitude of the balance of trade relative to the selected deflator. For example, the highest deficits for 2003 and 2005 are associated with the official deflator series. In 2004, however, we have the highest deficit with the approach of Denison. In other years, however, the highest deficits occur when the method of Fabricant is used to convert nominal values to constant dollar values. What is important and consistent, however, is that regardless of the deflator used to convert nominal values to constant dollar values, the deficit in trade is substantially increasing.

Later in section 2 of this report, we examine the balance of trade for selected fish and seafood products using the various deflators. We consider the top 20 products imported to the United States based on their aggregate or total value between 1989 and 2006, and the top 20 products exported from the United States between 1989 and 2006. We do this to illustrate how what appears to be a surplus or deficit can also appear as a deficit or surplus. This is important because U.S. society frequently responds to deficits by requesting investigations into trade practices and the imposition of tariffs and quotas.



Table 2.4. 2006 Constant Dollar Value Balance of Trade with Various Deflators<sup>a</sup>

Year	Imports Less Exports—Millions of Dollars			
	Current Values	Official U.S.	Denison	Fabricant
1989	3,108	3,751	3,933	4,591
1990	2,321	1,907	2,849	3,300
1991	2,453	1,618	3,002	3,370
1992	2,197	1,314	2,672	2,951
1993	2,828	1,963	3,448	3,713
1994	3,544	3,219	4,248	4,556
1995	3,474	3,550	3,984	4,376
1996	3,644	3,323	4,138	4,506
1997	4,986	5,160	5,803	6,063
1998	5,821	6,733	7,211	7,002
1999	6,105	7,542	7,499	7,239
2000	7,054	7,719	8,135	8,185
2001	6,567	7,202	7,854	7,441
2002	6,980	8,323	8,557	7,774
2003	7,810	9,327	9,300	8,517
2004	7,636	8,561	8,610	8,098
2005	8,059	8,490	8,453	8,257
2006	9,286	9,286	9,286	9,286

<sup>a</sup>The import and export deflators correspond to trade deflators for fish, seafood, and related products; this corresponds to both the official series and Denison’s recommended approach. The GNP implicit price deflator (Fabricant) is relative to all goods and services and corresponds to the gross national product.

All the deflators are actually price indices, which are based on various methods of construction. A price index is simply a metric designed to compare the prices of goods and services or a bundle of goods and services over time or among different spatial entities. Widely used price indices in fisheries include the consumer and producer price index series, which are available from the U.S. Bureau of Labor. Other price series include various national account indices such as the implicit price deflator for the gross national product. We may consider such indices within a bilateral (two-way) or multilateral (e.g., time and space) measure. In addition, there are numerous mathematical formulations for constructing price indices (e.g., Laspeyers, Paasche, Fisher, Törnqvist, superlative, and others).<sup>7</sup> The two most widely used indices are the Laspeyers and the Paasche, but there has been increasing emphasis on the Fisher and superlative type indices. Unfortunately, a discussion of index number theory is beyond the scope of this

<sup>7</sup> Coelli et al. (2005) provide an excellent introduction and discussion on the various price indices as well as numerous excellent references on index number construction.

report. There are numerous excellent references on index number construction (e.g., Coelli et al., 2005; Allen and Diewert, 1981; and Diewert and Nakamura, 1993).

Another index important to understanding international trade, but unfortunately because of data limitations is not used in this study, is the purchasing power parity (PPP) index. The PPI is also referred to as the implicit exchange rate index. This index represents the amount of numeraire currency equivalent in purchasing power in one nation to one unit of currency in another nation. These indices facilitate a better comparison of prices and consumption in different nations by reflecting the differences in the cost of living and acquisition of goods and services. Similarly to the construction of traditional price and quantity indices, there are numerous approaches for constructing the purchasing power parity index.<sup>8</sup>

## **2.2 Trends in U.S. Fisheries and Consumption**

With an introduction to some basic economic measures, we are now ready to examine some important trends in U.S. fisheries. In this section, we focus on overall trends in U.S. consumption of fish and seafood. We consider not only how overall total consumption has changed between 1980 and 2006, but also how the share of imports relative to our domestic consumption has changed.<sup>9</sup>

### **2.2.1 What Has Been Happening to Consumption and Trade in Seafood?**

If we consider the growth in the U.S. population over time, it should not be surprising that domestic consumption of seafood in the United States has been increasing. Between 1980 and 2006, total consumption of all seafood in the United States (based on a live weight equivalent measure calculated by Steve Koplín of NOAA Fisheries) increased from approximately 7.0 billion pounds to 12.3 billion pounds of edible product (Figure 2.1). On a per capita and live weight basis, consumption increased from 31 to 41 pounds per capita between 1980 and 2006.

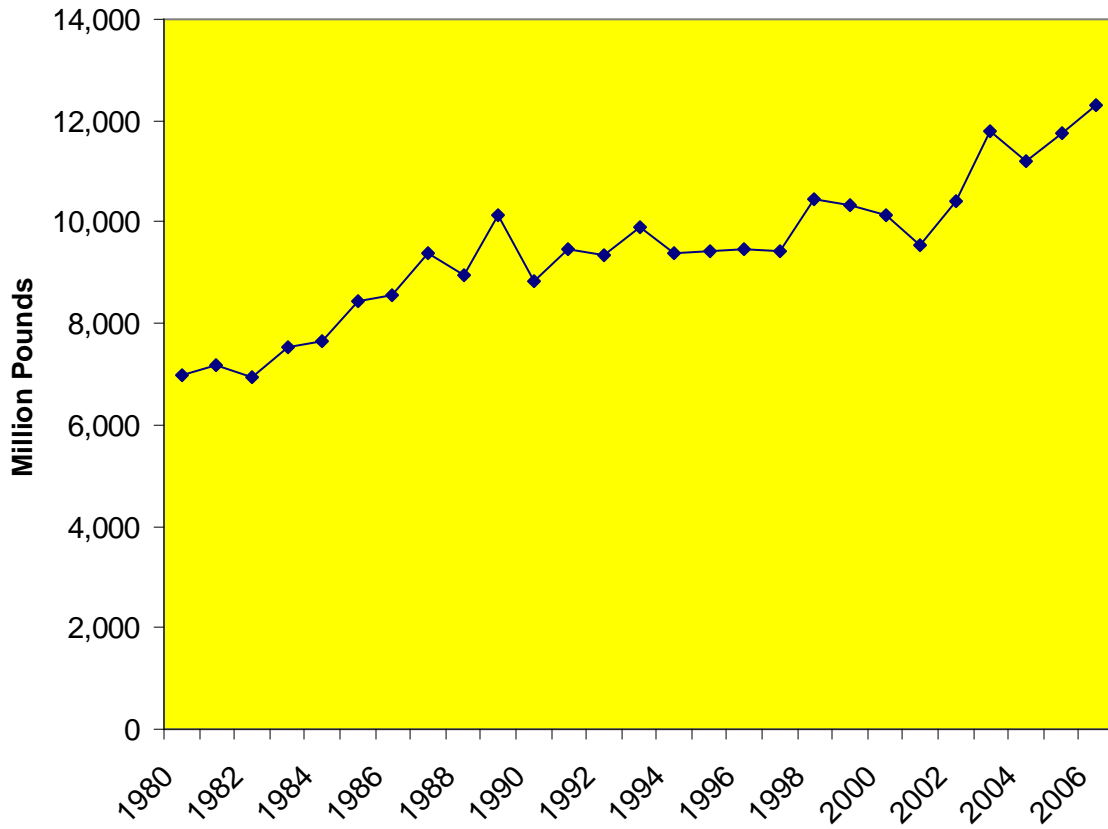
Although total consumption of seafood increased 76 % between 1980 and 2006, the retail price of fish and seafood increased by almost 140.0 % during the same period (Figure 2.2). In only one year between 1980 and 2006 did the retail price decline; between 2001 and 2002, the average retail price for fish and seafood declined by almost 1.6 %. The largest price increases occurred in 1986 and 1987. Between 1985 and 1986, retail prices increased by 9.2 %, and between 1986 and 1987, retail prices increased by 10.7 %. Between 2003 and 2005, prices declined by slightly less than 3.0 % per year. Between 2005 and 2006, prices increased by 4.7 %.

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<sup>8</sup> For additional information on purchasing power parity indices, see Salazar-Carrillo and Rao (1988).

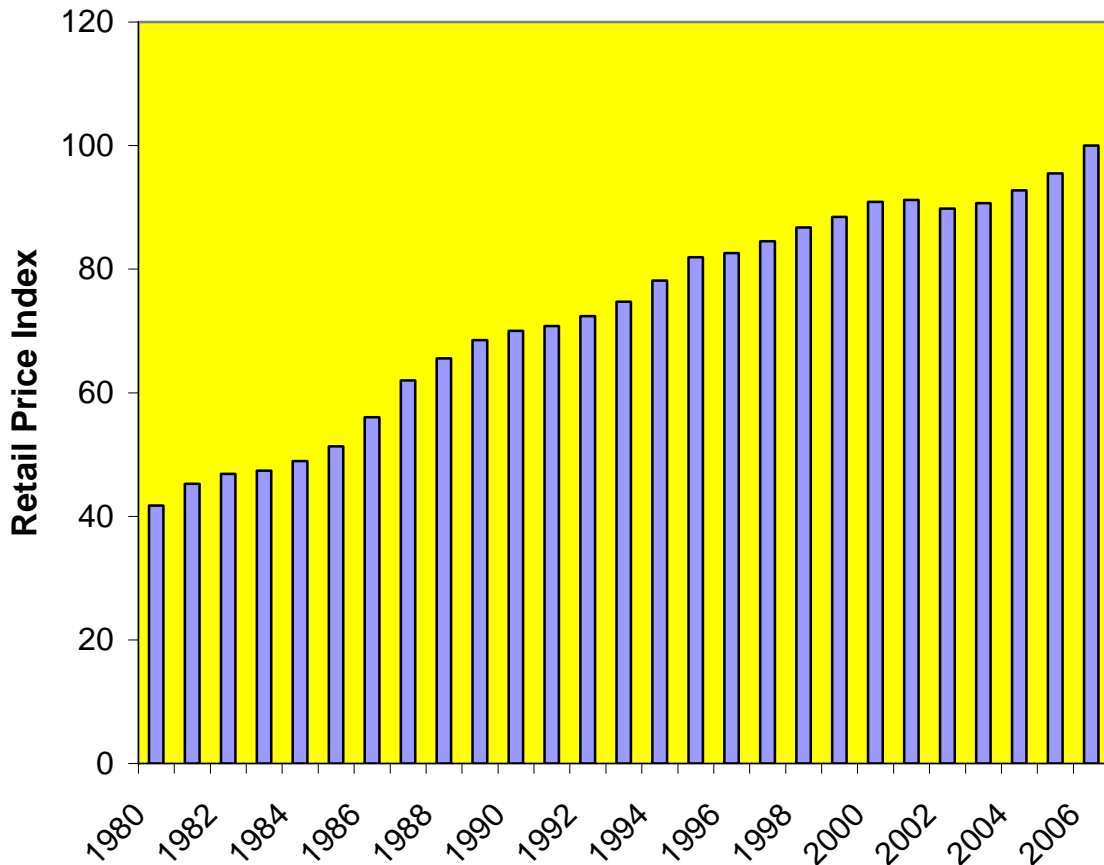
<sup>9</sup> Data in this section were provided by Steve Koplín of NOAA fisheries.

Figure 2.1. U.S. Consumption of Fish and Seafood, Live Weight (Million lbs), 1980-2006



Source of Information: Pers. Communication, Steve Koplín, NOAA Fisheries.

Figure 2.2. Index of Retail Prices for fish and Seafood (2006 = 100)



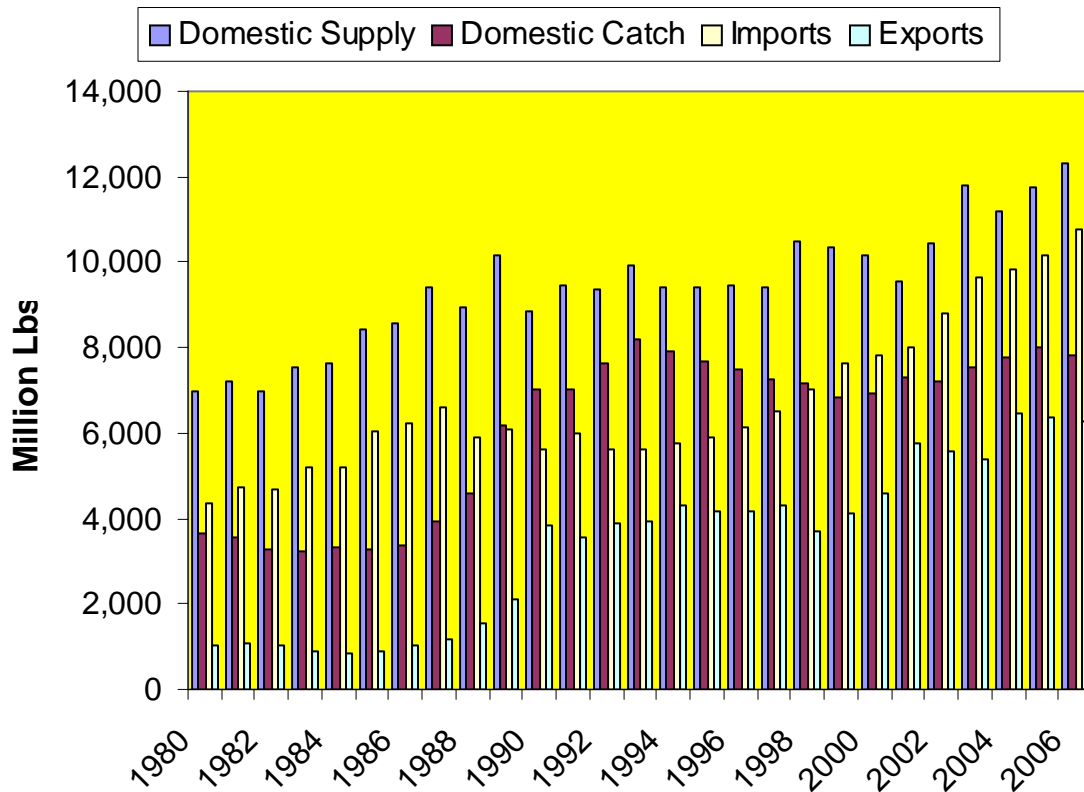
### 2.2.2 The Rising Tide of Imports

What are the major sources of seafood? In 1980, domestic producers accounted for 3.7 billion pounds (live weight) of edible seafood, while U.S. consumers consumed nearly 7.0 billion pounds of fish and seafood (Figure 2.3). In 2006, U.S. production of fish and seafood accounted for 7.8 billion pounds, and U.S. consumers purchased or consumed 12.3 billion pounds. Between 1980 and 2006, imports of edible seafood (live weight) increased from 4.4 to 10.8 billion pounds. During this same period, U.S. exports of edible fish and seafood increased from 1.0 to 6.3 billion pounds.

If we measure the trade deficit in terms of pounds, the U.S. deficit increased from 3.3 to 4.5 billion pounds (live weight, edible product) between 1980 and 2006. While the quantities of the deficit are not staggering, the dollar values are quite high—a deficit of \$4.5 billion in 1989 and \$9.2 billion in 2006.<sup>10</sup> If we consider both edible and non-edible product, the trade deficit increased from \$4.6 billion to \$9.3 billion between 1989 and 2006.

<sup>10</sup> Dollar values are in terms of 2006 constant dollar values, which were derived by using the gross national product implicit price deflator.

Figure 2.3. Domestic Supply, Catch, Imports and Exports (Live Weight), 1980-2006



### 2.3 Factors Promoting or Inhibiting International Trade in Seafood

In the world of economics, free trade is typically preferred to restricted trade. The primary basis for this argument is that free trade promotes competitive markets, which in turn, promotes improved allocation, utilization of resources, and social welfare. Two traditional arguments against free trade include the infant industry and national security arguments; the infant industry argument, however, is not as imminent as it was in the past. Another argument against free trade is the moral argument of unfair treatment of workers in exporting nations (e.g., the sweatshop argument, child abuse, and forced labor). Opposition to dumping is another argument often used against promoting free trade, and there are valid arguments to support opposition to dumping. Three emerging issues arguing against unrestricted trade are health and safety of a given product, overexploitation of natural resources, and damage to the environment.

In very simple terms, trade occurs because a nation has a comparative advantage in producing a good or service, which another nation desires. Alternatively, individuals of a given nation desire a good or service and are willing to pay a price to obtain that good or service, which another nation is willing to provide at a given price. Cunyngame (1904) introduced a graphical illustration of how trade occurs. Cunyngame, however, did not draw any conclusions regarding gains from trade. Barone (1908), on the other hand, did draw such conclusions regarding gains from trade.

The Cunynghame and Barone framework are still widely used today to teach international trade theory. In essence, it is a partial equilibrium framework. We consider two nations—X and Y. Nation X demands more of a given product, say fish, than it can domestically supply (Figure 2.4). Nation Y, however, produces more of a good (fish) than demanded by its citizens and does so at a lower cost. Nation Y enjoys a comparative advantage in that it can produce fish at a lower cost than can nation X. In this case, trade will occur, but the final price paid by importers in nation X will typically equal the price in the exporting nation plus transportation cost.<sup>11</sup>

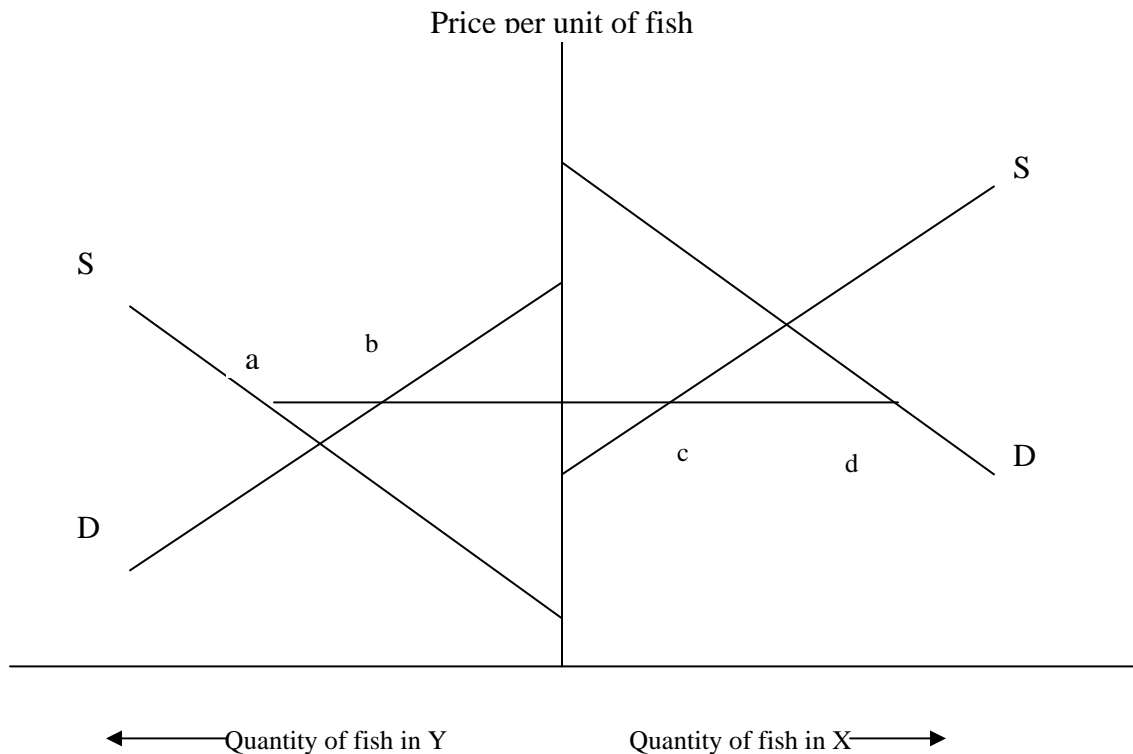


Figure 2.4. International Trade Flow Diagram

By manipulating the two curves and imposing price and quantity constraints, it is easy to understand how international trade might be affected. Unfortunately, the various factors either promoting or inhibiting U.S. trade in seafood are not well known or documented by any U.S. agency. For example, the exchange rate with Thailand, Indonesia, and China are known to encourage U.S. imports of seafood from these nations; similarly, the proximity of Canada to the U.S. reduces transportation cost and thus U.S. prices of Canadian imports, which also encourages the importation of seafood from Canada.

Melchior (2005) provides an extremely comprehensive discussion about tariffs in world seafood trade. Tariffs, however, are only one policy affected trade in seafood. There are numerous non-tariff barriers, like import quotas, which affect trade. Subsidies,

<sup>11</sup> Viner (1936) provides a comprehensive discussion on the issues promoting and inhibiting free trade.

something of concern by many nations, also affects trade by encouraging the exporting nation to supply product by offering subsidies.

The United States International Trade Commission (USITC) provides some summary information on tariffs affecting imports into the United States. For just canned fish, there were more than 36 different levels of tariffs in 2006. Then, each nation to which the U.S. might export has its own sets of tariffs, quotas, and related restrictions. In addition, each nation with the potential for international trade in seafood has its own levels and types of subsidies to encourage exports. Given the magnitude of seafood imports, it is surprising that no federal agency apparently keeps track of the various policies affecting U.S. trade in seafood. Presently, the World Trade Organization, the Doha Development Agenda, is the most influential action affecting the international trade in seafood. The Agenda affects tariffs, subsidies, and anti-dumping regulations (Melchior, 2005).

Tariffs in the United States are based on the Harmonized Tariff Schedule of the United States (HTS). This system imposes a hierarchical structure for describing all goods in trade for duty, quota, and statistical purposes. The International Harmonized Commodity Description and Coding system (HS), which is administered by the world Customs Organization in Brussels, defines the structure.

## **2.4 U.S. Dependency on Imports**

Albeit the primary emphasis of this report is on the U.S.-international trade in seafood, it is interesting to examine some basic trends in trade of other commodities. Not surprising, the number one commodity of U.S. imports, in value terms, is oil. Making sense out of international trade statistics, however, is not as easy as it might seem. First, various categories are used to classify products, and then, trade statistics may be reported either on a total balance of payment basis or a total Census basis, with the Census numbers typically being higher for exports and lower for imports.<sup>12</sup>

Initially, trade statistics are divided into the values of imports and exports for goods and for services—two distinct categories. Then, the service category is further divided into seven major groups—travel; passenger fares; other transportation; royalties and license fees; other private services; transfers under U.S. military sales contracts; and U.S. government miscellaneous services. The goods category is divided into six major groups—foods, feeds & beverages; industrial supplies; capital goods; automotive vehicles, etc; consumer goods; and other goods. More detailed data are available on each of the categories.

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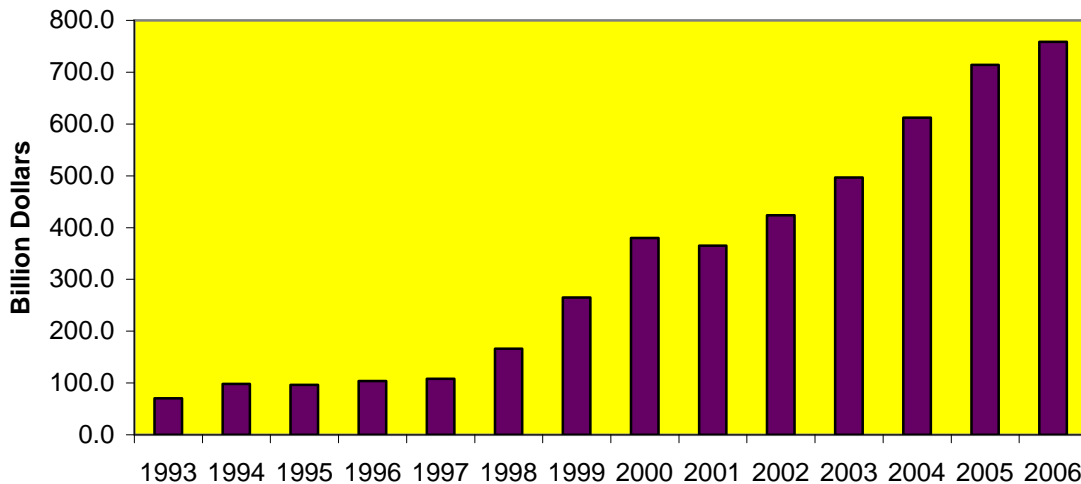
<sup>12</sup> The U.S. Bureau of Economic analysis adjusts the value of goods on a Census Basis to goods on a Balance of Payment (BOP) basis to ensure the data are in line with the concepts and definitions used to prepare international and national accounts. The adjustments primarily reflect changes in ownership that occur without goods passing into or out of the customs territory of the U.S. (U.S. Bureau of Economic analysis, January 11, 2008).

In 2006, the year for which the most complete data are available, the United States had a trade deficit of \$758.5 billion in goods and services.<sup>13</sup> The United States ran a deficit of \$838.3 billion in goods and a surplus of \$79.7 billion in services. The U.S. imported a total of \$1,861.4 billion in goods and \$342.8 billion in services in 2006; we exported \$1,023 billion in goods and \$422.6 billion in services. On a per capita basis, we imported approximately \$7,400 per individual in 2006; we exported nearly \$5,000 per individual; and our deficit in trade equaled approximately \$2,500 per individual in 2006.

Relative to the value of goods imported and major categories of goods by principal end-use category, the U.S. Bureau of Census reports the imports of goods by six major categories and by end-use category. The top four broad groups of goods imported were as follows: (1) industrial supplies, which includes petroleum and petroleum products-\$602.0 billion; capital goods-\$418.3 billion; (2) capital goods-\$418.3 billion; (3) automotive vehicles-\$256.7 billion; and (4) consumer goods-\$442.6 billion.<sup>14</sup> The dollar values of exports of these same broad categories were as follows in 2006: (1) industrial supplies-\$276.0 billion; (2) capital goods-\$413.9 billion; (3) automobile vehicles-\$107.2 billion; and (4) consumer goods-\$130.0 billion.

The United States has been running an overall trade deficit in goods and services since approximately 1971. The deficit, however, has been particularly pronounced since 1993 (Figure 2.5). Between 1993 and 2006, the total deficit in trade increased by 978.8 percent (based on nominal values of imports and exports). On a real dollar or inflation-adjusted basis (2006 =100), the deficit is even larger (Figure 2.6).

Figure 2.5. Annual U.S. Total Balance of Payments or Trade Balance (Deficit)<sup>a</sup>



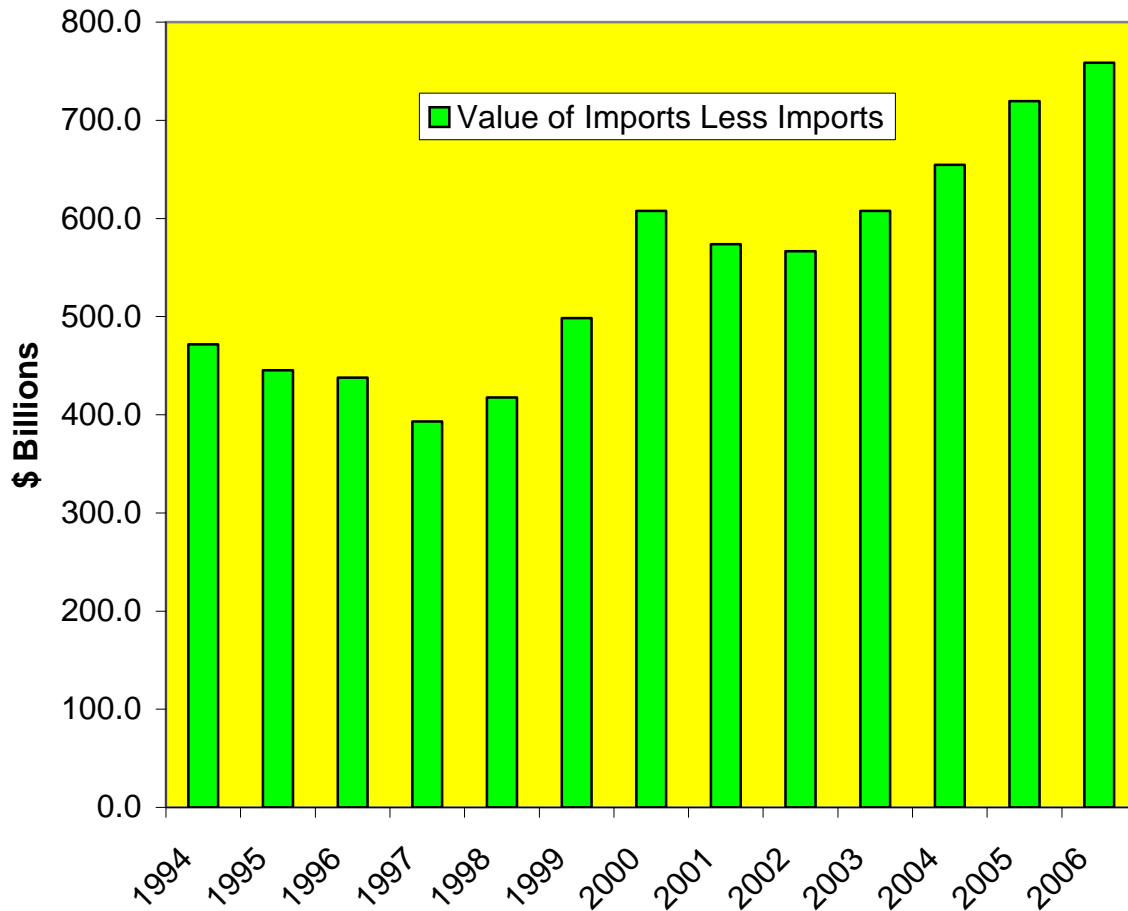
<sup>a</sup>Values (imports less exports) reported in Figure 2.5 are in nominal terms (unadjusted for inflation) and obtained from the U.S. Census Bureau, Foreign Trade Division.

<sup>13</sup> Data are available from the U.S. Census Bureau, Bureau of Economic Analysis, for the period January through November, 2007. All data are presented on a balance of payments basis.

<sup>14</sup> All dollar values based Census Basis values.



Figure 2.6. U.S. International Trade, Balance of Payment Basis (2006 =100)

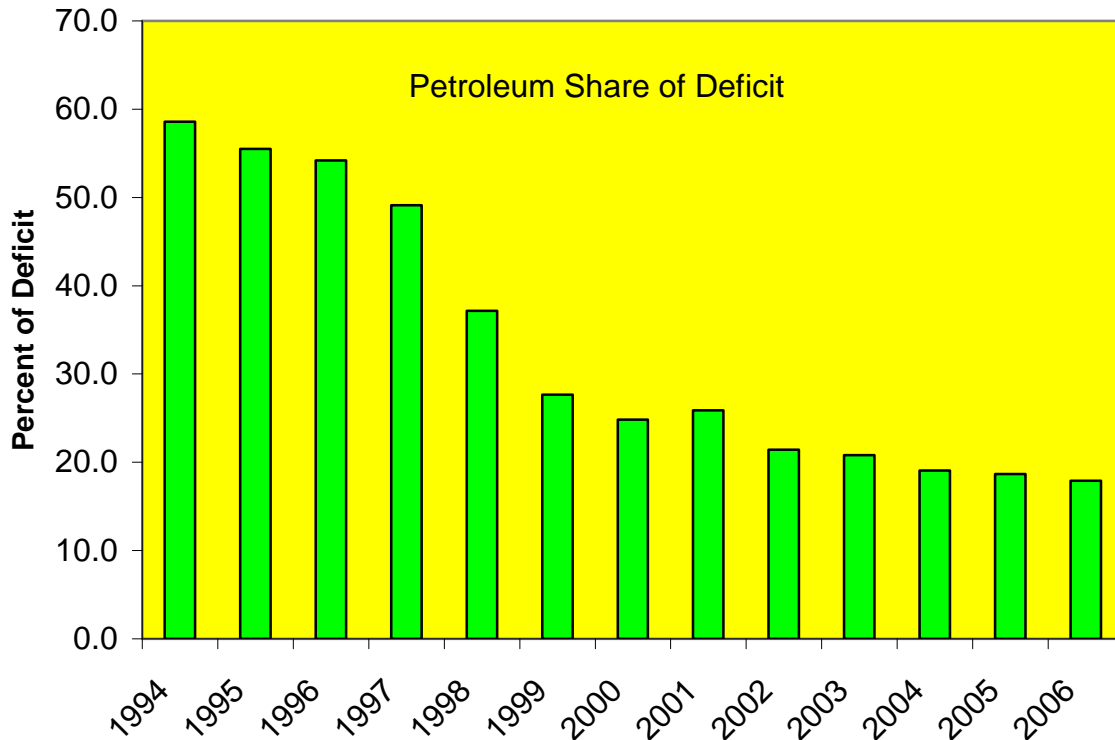


Americans have expressed considerable concern about our dependency on foreign oil and petroleum products. It has been an issue of increasing concern raised by presidential candidates in the current democratic and republican primaries. In 1994, the deficit in petroleum products accounted for 58.6 % of our total deficit in trade. In 2006, petroleum accounted for only 17.9 % of our total deficit (Figure 2.7).<sup>15</sup> Since 2002, America has run a deficit in each of the six major trade commodity groupings, with consumer goods accounting for nearly 50.0 % of the average annual deficit. The number of consumer goods is extensive, but topping the list in value is pharmaceutical preparations, which the U.S. imported \$58.9 billion worth of such preparations in 2006. Other major items included apparel, TVs, VCRs, toys and games, and other household goods. To provide somewhat of a comparative basis, the U.S. imported \$12.0 billion in jewelry and \$12.1 billion of fish and shellfish in 2006. Fish and shellfish is one category

<sup>15</sup> Data obtained from the U.S. Census Bureau, and percentages of deficit based on real dollar value (2006 =100).

of the foods, feeds, and beverages group, while jewelry is one category of the consumer goods group.

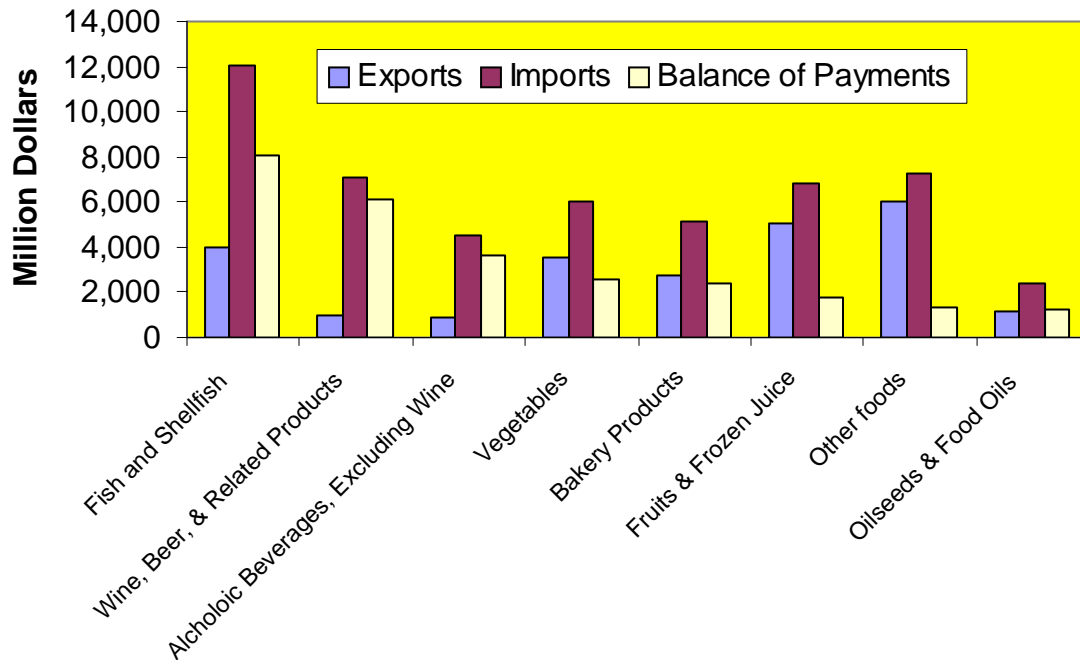
Figure 2.7. Petroleum's Share of Deficit of U.S. International Trade



<sup>a</sup>Source of Data: U.S. Census Bureau, U.S. Bureau of Economic Analysis.

A detailed listing of all individual goods and services imported and exported by the U.S. would be extremely lengthy and cumbersome. In addition, this information is readily available from the U.S. Census Bureau (January 11, 2008) report “U.S. International Trade in Goods and Services.” We instead focus on presenting changes in trade in the broad goods category “Foods, Feeds, and Beverages.” This group also contains fish and shellfish (Table 2.8). In 2006, the United States exported \$60.1 billion worth of products in this category; we imported \$68.5 billion (nominal value) in products. As of November 2007, the U.S. had imported feed and food commodities with an imported value of \$74.9 billion. Fish and shellfish was the major food and feed commodity imported to the U.S. in 2006--\$12.1 billion in imported value vs. \$4.0 billion in exported value in 2006. Wine, beer, and related products had the second highest deficit among commodities contained in the group for foods, feeds, and beverages.

Figure 2.8. Exports, Imports, and Balance of Payments in 2006 for Eight Products Contained in Foods, Feeds, and Beverage Category



In 2006, the United States imported \$1,703.3 billion in goods. Imports of just crude oil, petroleum products, and fuel oil for industrial purposes, alone, equaled 265.5 billion or 15.6 % of the total value of all goods imported into the U.S. in 2006. In terms of capital goods, we imported a total of \$382.5 billion, of which telecommunications equipment, computers, and computer accessories accounted for \$129.7 billion. The U.S. imported \$234.0 billion worth of automobiles and parts in 2006. We also imported \$44.3 billion in cotton apparel and \$58.9 billion in pharmaceutical preparations in 2006. It is quite clear that U.S. society is heavily dependent upon imports to maintain our the quality of life or social welfare.

## 2.5 Why Care About the Balance of Payments?

Many Americans express great concern about our balance of payments, or in particular, our trade deficit. The concern often emphasizes loss of employment in America; dependency on foreign oil and other goods and services; dollars leaving the United States; national security; unfair trade practices; and unfair treatment of workers in other nations. Unfortunately, these arguments or concerns, although real, are typically without a solid basis. Alternatively, they are often based on emotional rather than actual issues.

The U.S. is no doubt losing jobs in automobile manufacturing. We are increasing our imports of automobiles and exporting our assembly and manufacturing plants to other nations. In 2006, the United States imported \$256.7 billion worth of automotive vehicles

and related items and exported \$107.2 billion worth the same bundle of goods, and thereby, had a deficit of \$149.5 billion. Translated into jobs, the loss of \$149.5 billion in automobile manufacturing becomes roughly 2.2 million jobs in the United States. Or so it seems that the U.S. loses 2.2 million jobs because of the level of automobiles imported into the United States.

There are, however, other concerns. First, can the U.S. efficiently produce vehicles and have the same quality as imported vehicles? If not, then it is to the benefit of U.S. consumers to have imports. It is often argued that imported goods have lower quality than U.S. produced goods, but when this occurs the price of the imported good is typically lower, which also benefits U.S. consumers. Also, imports often spur or promote competition. This has happened in the U.S. wine industry, which improved the quality of U.S. produced wines to compete with the wines from France. This actually created new jobs in the wine and support industries, and Americans ended up with a higher quality of domestically produced wine.

One of the major arguments against a deficit in our balance of payments is that imports equate to dollars leaving the U.S., and subsequently, a lowering of our gross national product. We, thus, become worse off or so the argument goes. This argument basically dates back to the era of Mercantilism, which flourished in the 1600s and 1700s. This is no longer a serious theory of international trade. We really should not be focusing on keeping money in the United States. We want to increase exports because they generate domestic production and incomes. Increasing imports typically allows consumers to have a larger selection and higher quality of goods and services; alternatively, domestic consumers stand to benefit from imports.

The balance of payments is simply a measure of the flow of goods into and out of an economy. The basic question of “Why care about the balance of payments” must, then, be addressed from the perspective of gains from trade. That is, how is our quality of life related to international trade, particularly imports? Through trade, we have sufficient supplies of oil and gas, seafood, and numerous other products. The U.S. supplies of oil and seafood are insufficient to satisfy domestic demand. Imports enable us to obtain both of these commodities, as well as a host of other goods and services.

## **2.6 Deficits or Surpluses in Seafood and Related Commodities**

In a 1983 article by G. Moore, it was illustrated that depending upon how nominal values were converted to constant dollar values, it was possible to have a deficit or surplus in the trade balance of a given good or service. More important, the article described how using current dollar values, the deficit appeared to reduce our gross national product (GNP), but by converting the balance of payments to real dollar values, we improve our GNP. Using the value of the difference between exports and imports in 1981, Moore calculated the current dollar or nominal value of the deficit in merchandise to equal \$28.0 billion, but when calculated in terms of real value, the nominal value deficit became a surplus of \$11.0 billion. Moore then demonstrated that trade reduced

our nominal GNP, but increased our real GNP, and it reduced our most comprehensive measure of the price—the GNP implicit price deflator.

Moore noted that we ended up with this uncertainty—do we have a deficit or surplus—because of the method used by the Department of Commerce to deflate trade figures. Officially, exports are deflated with export prices, and imports are deflated with import prices. This strategy appears reasonable until we think about the rising import prices, particularly driven by the rising oil prices. In this case, the import deflator makes the value of imports appear smaller than the value of exports over time. In this section, we examine the trade balance for selected seafood products based on using the official Department of Commerce procedure for estimating real values; an alternative framework recommended by Denison (1981), which involves deflating imports, exports, and the deficit by an import price deflator; and a widely used approach by researchers in which imports, exports, and the balance of trade are all deflated by the gross national product implicit price deflator.

We consider the difference in the value of imports and exports for five major seafood commodity groupings, which are frequently imported (Tables 2.5 – 2.9). Our groupings include the following: (1) all shrimp, (2) all shrimp, (3) tuna, (4) herring and sardines, and (5) groundfish. These are all major seafood products, which are imported and/or exported. We examine the difference in the nominal value of imports and exports; the difference in the value of imports and exports deflated by the gross national product implicit price deflator; the difference in the values of imports and exports based on the official U.S. procedures—value of imports deflated by import price deflator and value of exports deflated by export price deflator; and last, the approach of Deninson who argued that imports, exports, and the difference between the two should all be deflated by the import price deflator.

In all five cases, we find erratic and often inconsistent patterns in the value of our balance of trade. In the first case—shrimp, we find that regardless of how we examine the difference between the value of imports and exports, we have a deficit in trade. What is of concern, however, is the magnitude of the difference. If we deflate using the implicit price deflator, as is common practice, we have a nearly \$400.0 million higher deficit in 1989 than if we deflated according to the official process or deflated as suggested by Deninson. In more recent years, however, the deficit is generally smaller when deflated using the implicit price deflator. We find a similar story for tuna—higher deficits in early years and lower deficits in more recent time periods when we compare values obtained by using the GNP implicit price deflator and the official trade deflators. For the other three products, we actually have years in which the commodity is both a surplus and a deficit, depending upon the deflator. For example, salmon appears to be a surplus (value of imports less value of exports is negative) in 1997 when the official deflators are used, but a deficit when the implicit price deflator or the recommended deflator of Deninson is used. We find the same problem with herring and sardines and groundfish. Given the sensitivity of the public to deficits, it is highly important that more attention be given to the selection of deflators.

Table 2.5. The Value of Imports Less Exports, Shrimp

Year	Nominal	GNP	IMP vs. EXP Def.	Deninson
1989	1,630,536,510	2,408,473,427	2,057,970,254	2,063,447,874
1990	1,536,486,740	2,184,992,520	1,848,439,856	1,886,185,539
1991	1,742,359,407	2,394,337,511	2,086,306,005	2,132,630,853
1992	1,904,195,770	2,557,684,043	2,274,409,894	2,315,413,144
1993	2,049,502,054	2,690,694,570	2,444,866,215	2,498,783,289
1994	2,549,746,790	3,277,730,801	3,019,733,994	3,056,151,013
1995	2,452,881,316	3,090,049,529	2,797,183,882	2,812,937,289
1996	2,346,963,844	2,901,785,168	2,637,561,726	2,664,582,021
1997	2,849,807,093	3,465,653,767	3,294,352,046	3,317,200,667
1998	3,016,405,854	3,628,104,227	3,717,596,942	3,736,412,553
1999	3,042,962,362	3,607,970,550	3,739,232,933	3,737,823,808
2000	3,640,011,347	4,223,730,967	4,181,853,329	4,197,914,136
2001	3,520,190,682	3,988,884,625	4,189,069,808	4,210,250,786
2002	3,314,920,387	3,691,859,213	4,056,062,140	4,063,896,515
2003	3,651,098,186	3,981,568,360	4,348,487,013	4,347,580,598
2004	3,597,689,817	3,815,153,571	4,055,340,700	4,056,477,412
2005	3,600,180,044	3,688,709,061	3,776,797,778	3,776,148,567
2006	4,074,063,529	4,074,063,529	4,074,063,529	4,074,063,529

Table 2.6. The Value of Imports Less Exports, Tuna

Year	Nominal	GNP	Official	Deninson
1989	631,384,288	932,620,809	795,668,506	799,018,335
1990	514,914,551	732,244,811	614,449,158	632,107,232
1991	589,440,241	810,004,454	699,798,771	721,469,083
1992	534,143,219	717,452,275	632,638,255	649,493,214
1993	490,791,742	644,337,327	580,687,036	598,380,568
1994	570,893,088	733,890,073	667,395,189	684,277,943
1995	556,594,216	701,176,891	631,964,977	638,296,119
1996	577,651,471	714,208,050	643,340,061	655,825,921
1997	588,599,827	715,796,944	674,359,067	685,135,406
1998	666,723,300	801,928,434	815,610,379	825,868,079
1999	716,361,080	849,372,872	880,468,473	879,942,366
2000	604,552,702	701,500,002	693,118,432	697,212,204
2001	626,807,588	710,263,556	742,423,600	749,680,167
2002	669,888,455	746,061,315	818,839,559	821,243,662
2003	752,922,324	821,071,237	896,964,932	896,549,564
2004	798,698,840	846,976,501	899,964,215	900,551,178
2005	878,695,332	900,302,594	921,960,292	921,643,940
2006	896,028,300	896,028,300	896,028,300	896,028,300

Table 2.7. The Value of Imports Less Exports, Salmon

Year	Nominal	GNP	Official	Deninson
1989	-655,022,081	-967,536,309	-897,917,606	-828,932,018
1990	-581,727,966	-827,258,200	-987,516,216	-714,127,137
1991	-380,398,590	-522,740,951	-737,784,918	-465,604,149
1992	-676,136,362	-908,175,100	-1,179,768,089	-822,150,246
1993	-601,708,828	-789,955,137	-1,148,278,897	-733,612,324
1994	-519,193,269	-667,429,321	-881,880,673	-622,310,043
1995	-490,575,733	-618,009,238	-672,607,854	-562,586,850
1996	-303,774,487	-375,586,656	-530,748,219	-344,884,749
1997	21,835,754	26,554,486	-89,066,661	25,417,011
1998	172,533,417	207,521,550	124,874,460	213,716,607
1999	88,041,679	104,388,996	117,538,348	108,146,025
2000	243,964,663	283,087,332	199,203,005	281,357,010
2001	306,735,760	347,575,932	258,198,666	366,864,920
2002	450,385,165	501,598,357	517,878,799	552,145,599
2003	549,628,690	599,376,979	658,739,180	654,475,697
2004	463,595,127	491,617,314	515,087,967	522,714,091
2005	506,297,213	518,747,144	537,424,490	531,043,857
2006	930,992,927	930,992,927	930,992,927	930,992,927

Table 2.8. The Value of Imports Less Exports, Herring and Sardines

Year	Nominal	GNP	Official	Deninson
1989	-8,411,487	-12,424,648	-17,135,634	-10,644,757
1990	-396,443	-563,770	-30,222,042	-486,672
1991	-7,412,064	-10,185,604	-50,114,396	-9,072,294
1992	-23,900,375	-32,102,586	-70,555,936	-29,061,740
1993	-3,079,912	-4,043,471	-48,208,032	-3,755,074
1994	-9,719,223	-12,494,180	-42,601,661	-11,649,554
1995	-47,633,351	-60,006,741	-71,088,145	-54,625,403
1996	-49,601,829	-61,327,682	-89,880,848	-56,314,520
1997	-2,007,543	-2,441,375	-21,782,524	-2,336,798
1998	25,621,008	30,816,704	17,387,645	31,736,663
1999	-3,190,390	-3,782,772	-2,368,216	-3,918,917
2000	36,245,314	42,057,686	30,145,396	41,800,616
2001	9,301,924	10,540,424	-7,480,725	11,125,373
2002	6,309,743	7,027,222	1,644,994	7,735,372
2003	10,677,961	11,644,450	13,450,441	12,714,886
2004	-6,070,954	-6,437,915	-8,280,911	-6,845,139
2005	-22,212,528	-22,758,738	-22,072,884	-23,298,225
2006	21,855,591	21,855,591	21,855,591	21,855,591

Table 2.9. The Value of Imports Less Exports, Groundfish

Year	Nominal	GNP	Official	Deninson
1989	704,725,854	1,040,953,994	885,986,847	891,832,263
1990	606,457,229	862,424,956	690,514,931	744,484,691
1991	216,367,681	297,330,879	-19,262,816	264,831,923
1992	329,247,511	442,239,773	263,519,667	400,349,600
1993	408,248,645	535,970,389	403,186,708	497,742,801
1994	367,964,154	473,022,437	371,475,399	441,045,372
1995	311,541,095	392,467,996	319,147,625	357,271,898
1996	280,871,816	347,269,802	237,066,984	318,882,625
1997	343,422,144	417,636,074	332,721,487	399,746,414
1998	453,782,340	545,805,076	515,425,962	562,098,774
1999	502,322,683	595,592,463	621,328,196	617,028,231
2000	324,277,910	376,279,775	321,574,744	373,979,829
2001	-154,245,345	-174,782,261	-329,470,342	-184,481,934
2002	-34,585,320	-38,518,009	-92,197,267	-42,399,559
2003	-55,834,052	-60,887,734	-61,013,109	-66,484,939
2004	-209,169,395	-221,812,720	-246,847,488	-235,843,269
2005	-155,466,103	-159,289,040	-155,368,020	-163,064,929
2006	-233,891,269	-233,891,269	-233,891,269	-233,891,269



## 3.0 Our International Trading Partners

### 3.1 What Nations Purchase Our Seafood and Related Products?

Despite the fact that the United States depends heavily upon imports to satisfy our domestic demand for seafood, we still, as a nation, export considerable quantities of seafood and related products. Between 1989 and 2006, the United States exported a total of \$69.5 billion worth of seafood and related products to 210 nations or entities. The top five nations or geographic regions in terms of the value of exports (2006 constant dollar value) were the following: (1) Japan, (2) Canada, (3) South Korea, (4) China, and (5) the United Kingdom. These five nations accounted for 75.7 % (\$52.7 billion) of the total value of all seafood and related products exported by the U.S. between 1989 and 2006. The nation with the lowest value of imports from the U.S. (our exports) between 1989 and 2006 was Algeria--\$3,270, which occurred in one year--2006. Iran and Iraq ranked 129 (\$42,568 annual) and 206 (\$206 annually), respectively, in terms of U.S. exports.

Our top nations importing our fish and seafood are pretty much the same nations receiving the majority of all of our exports (U.S. Census Bureau, Foreign Trade Statistics, 2008). In 2006, the U.S. exported \$230.6 billion in goods and services to Canada; \$55.2 billion to China; \$134.2 billion to Mexico; \$59.6 billion to Japan; \$41.3 billion to Germany; \$45.4 billion to the United Kingdom; a\$32.5 billion to South Korean; \$24.2 billion to France; \$23.0 billion to Taiwan; and \$12.6 billion to Malaysia.

The United States exports seafood and related products all over the world (Table 3.1). Not all nations, however, had the same ranking in terms of value of exports between 1989 and 2006. Japan was consistently the number one destination for U.S. exports of seafood between 1989 and 2006; the same was true relative to Canada being the number two destination of exports over the entire period. South Korea was the third highest ranked destination of exports between 1989 and 2005, but China became the third major export market for U.S. products in 2006. Four nations held the fourth spot for U.S. exports—South Korea, United Kingdom, China, and Germany. The nations ranking fifth in terms of imports from the U.S., on an annual basis, were China, France, Germany, and the United Kingdom. The United States even exported to the Vatican City--\$681.9 thousand between 1989 and 2006 and \$37,887 on an annual basis. In terms of ranking, the Vatican City ranked 134 in terms of nations receiving U.S. exports.

The dollar value of exports of seafood and related products, however, has not been very large. Between 1989 and 2006, the U.S. exported \$69.5 billion worth of seafood and related products; on an average annual basis, the U.S. exported \$3.9 billion of seafood and related products per year. The value of U.S. exports, in constant dollars, however, not dramatically changed over time (Figure 3.1). It has ranged from a low of \$2.9 billion in 1998 to a high of \$4.7 billion in 1990. The United States exported more in wheat, corn, soybeans, frozen juices, and meat and poultry in 2006 than it exported in fish and seafood. In 2006, the dollar value of civilian exported aircraft equaled 53.0 % (\$36.8 billion) of the total value of fish and seafood exported over all years between 1989 and 2006.

Table 3.1. U.S. Exports of Seafood and Related Products, by Nation

COUNTRY	Value: 1989-2006	Average Value
JAPAN	32,576,400,000	1,809,800,000
CANADA	10,575,800,000	587,544,444
SOUTH KOREA	4,419,300,000	245,516,667
CHINA	2,811,450,000	156,191,667
UNITED KINGDOM	2,273,370,000	126,298,333
FRANCE	2,027,880,000	112,660,000
GERMANY	1,622,150,000	90,119,444
NETHERLANDS	1,356,170,000	75,342,778
MEXICO	1,212,390,000	67,355,000
CHINA - TAIPEI	1,205,840,000	66,991,111
SPAIN	1,089,620,000	60,534,444
CHINA - HONG KONG	940,261,000	52,236,722
ITALY	910,924,000	50,606,889
AUSTRALIA	600,096,000	33,338,667
THAILAND	529,356,000	29,408,667
NORWAY	528,235,000	29,346,389
PORTUGAL	505,498,000	28,083,222
BELGIUM	381,359,000	21,186,611
SWEDEN	322,979,000	17,943,278
DENMARK	309,344,000	17,185,778
PHILIPPINES	212,068,000	11,781,556
RUSSIAN FEDERATION	202,087,000	11,227,056
ISRAEL	188,078,000	10,448,778
SINGAPORE	141,337,000	7,852,056
DOMINICAN REPUBLIC	129,999,000	7,222,167
GREECE	123,114,000	6,839,667
LITHUANIA	117,337,000	6,518,722
BERMUDA	116,038,000	6,446,556
SWITZERLAND	106,096,000	5,894,222
VENEZUELA	104,091,000	5,782,833
INDIA	94,121,400	5,228,967
ECUADOR	86,765,800	4,820,322
BRAZIL	85,264,300	4,736,906
UKRAINE	81,679,400	4,537,744
INDONESIA	75,599,100	4,199,950
HONDURAS	68,438,000	3,802,111
MALAYSIA	65,100,000	3,616,667
SOUTH AFRICA	59,804,700	3,322,483
EGYPT	52,863,500	2,936,861
PANAMA	52,122,500	2,895,694
CHILE	49,819,400	2,767,744

Table 3.1. Continued

COUNTRY	Value: 1989-2006	Average Value
BAHAMAS	49,185,200	2,732,511
NEW ZEALAND	48,781,900	2,710,106
COLOMBIA	47,394,900	2,633,050
NETHERLANDS ANTILLES	46,921,300	2,606,739
VIETNAM	43,325,500	2,406,972
IRELAND	41,185,400	2,288,078
JAMAICA	40,642,200	2,257,900
SAUDI ARABIA	40,446,200	2,247,011
NIGERIA	35,475,600	1,970,867
POLAND	34,619,400	1,923,300
ICELAND	33,187,100	1,843,728
ARGENTINA	29,400,000	1,633,333
GUATEMALA	27,568,400	1,531,578
GEORGIA	24,491,200	1,360,622
BELIZE	24,111,400	1,339,522
BANGLADESH	23,746,800	1,319,267
KUWAIT	23,498,400	1,305,467
ROMANIA	22,930,500	1,273,917
ARUBA	22,734,500	1,263,028
FRENCH POLYNESIA	22,611,400	1,256,189
COSTA RICA	21,814,200	1,211,900
UNITED ARAB EMIRATES	21,410,100	1,189,450
BULGARIA	20,011,100	1,111,728
MARTINIQUE	18,885,600	1,049,200
FINLAND	18,536,200	1,029,789
GUADELOUPE	18,206,900	1,011,494
ESTONIA	17,795,200	988,622
PERU	17,578,400	976,578
BARBADOS	16,562,100	920,117
USSR	15,618,000	867,667
TURKEY	15,227,600	845,978
FIJI	14,496,500	805,361
CAYMAN IS.	13,329,800	740,544
TRINIDAD & TOBAGO	13,325,700	740,317
LEBANON	11,810,000	656,111
CROATIA	10,994,400	610,800
AFGHANISTAN	10,493,900	582,994
ST.LUCIA	8,733,040	485,169
URUGUAY	8,213,350	456,297
TURKS & CAICOS IS.	8,134,160	451,898
LATVIA	7,530,310	418,351

Table 3.1. Continued

COUNTRY	Value: 1989-2006	Average Value
FAROE IS.	5,594,770	310,821
NEW CALEDONIA	5,229,300	290,517
ANTIGUA & BARBUDA	5,048,890	280,494
SAN MARINO	5,041,640	280,091
EL SALVADOR	4,309,320	239,407
ST.KITTS-NEVIS	4,105,670	228,093
MALTA	4,017,340	223,186
NEPAL	3,922,820	217,934
WESTERN SAMOA	3,803,860	211,326
BAHRAIN	3,693,680	205,204
AUSTRIA	3,581,890	198,994
MALI	3,554,610	197,478
ST.PIERRE & MIQUELON	3,322,250	184,569
BRITISH VIRGIN IS.	3,302,750	183,486
NICARAGUA	3,256,120	180,896
SLOVENIA	3,143,700	174,650
HAITI	3,077,850	170,992
JORDAN	2,917,210	162,067
QATAR	2,762,240	153,458
SERBIA-MONTENEGRO	2,719,150	151,064
CZECH REPUBLIC	2,598,430	144,357
NAURU	2,477,110	137,617
GHANA	2,219,780	123,321
SURINAME	2,197,860	122,103
DOMINICA	2,143,890	119,105
GUYANA	2,052,710	114,039
ST.VINCENT-GRENADINE	1,943,010	107,945
PAKISTAN	1,927,210	107,067
ANDORRA	1,925,150	106,953
CYPRUS	1,854,150	103,008
GABON	1,800,320	100,018
GRENADA	1,777,590	98,755
LUXEMBOURG	1,745,770	96,987
GERMANY (EAST)	1,480,770	82,265
SRI LANKA	1,444,250	80,236
FED STATES OF MICRON	1,435,880	79,771
NORFOLK IS.	1,268,140	70,452
PALAU	1,205,380	66,966
BOLIVIA	1,163,500	64,639
MOROCCO	1,118,030	62,113
ANGOLA	1,072,030	59,557

Table 3.1. Continued

COUNTRY	Value: 1989-2006	Average Value
CAMEROON	1,046,940	58,163
BELARUS	908,576	50,476
PAPUA NEW GUINEA	899,933	49,996
TONGA	859,865	47,770
ARMENIA	847,735	47,096
IRAN	766,228	42,568
CENTRAL AFRICAN REP.	743,035	41,280
MADAGASCAR	736,276	40,904
KENYA	731,259	40,626
NIGER	710,193	39,455
VATICAN CITY	681,959	37,887
SENEGAL	669,149	37,175
SVALBARD-JAN MAYEN	643,809	35,767
EQUATORIAL GUINEA	631,420	35,079
SEYCHELLES	624,745	34,708
TUNISIA	609,265	33,848
MAURITIUS	585,017	32,501
CHINA - MACAO	570,989	31,722
NAMIBIA	538,680	29,927
TAJIKISTAN	532,149	29,564
HUNGARY	528,739	29,374
MONACO	522,040	29,002
OMAN	464,322	25,796
ANGUILLA	451,654	25,092
IVORY COAST	420,230	23,346
REUNION	372,256	20,681
WALLIS & FUTUNA	355,063	19,726
CUBA	354,454	19,692
KIRIBATI	325,846	18,103
GUINEA	322,821	17,935
LIBERIA	309,866	17,215
NIUE	303,415	16,856
GAMBIA	279,503	15,528
SOLOMON IS.	278,081	15,449
MACEDONIA	270,818	15,045
CONGO (BRAZZAVILLE)	263,090	14,616
MARSHALL IS.	258,770	14,376
BRUNEI	243,644	13,536
EAST TIMOR	216,042	12,002
BOSNIA-HERCEGOVINA	212,336	11,796
MOZAMBIQUE	186,357	10,353

Table 3.1. Continued

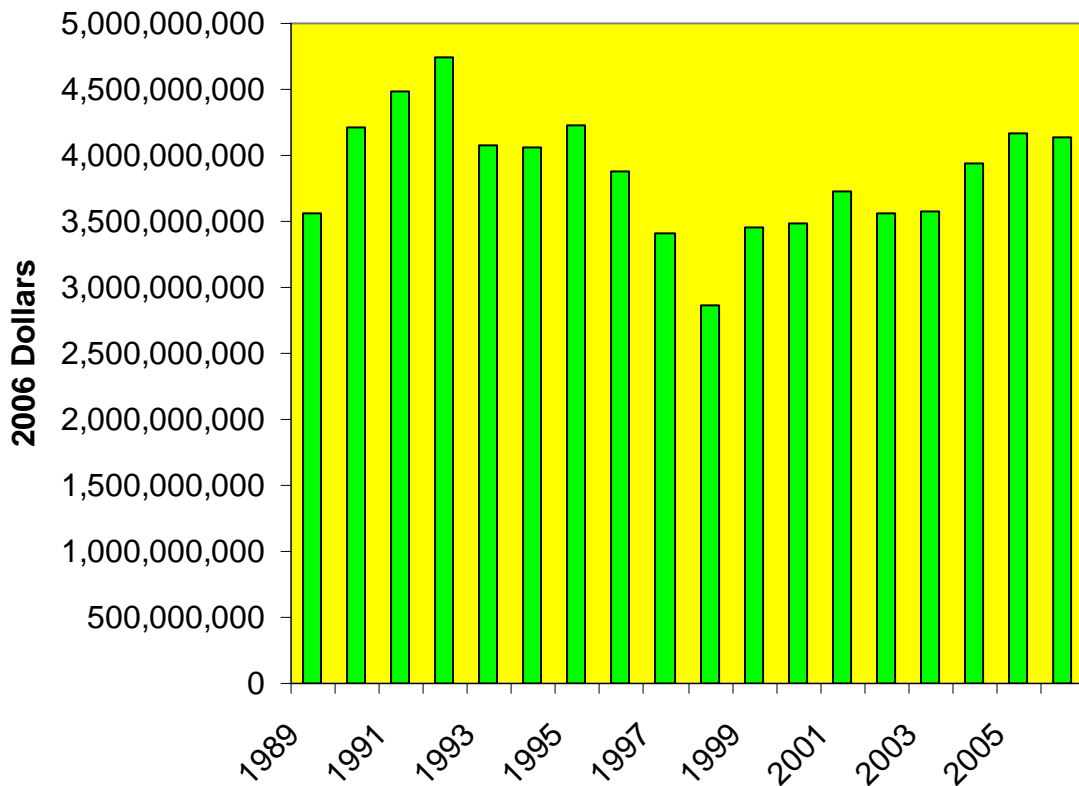
COUNTRY	Value: 1989-2006	Average Value
GREENLAND	185,531	10,307
SWAZILAND	172,159	9,564
SYRIA	139,063	7,726
LIECHTENSTEIN	138,782	7,710
BURMA	136,538	7,585
AZERBAIJAN	135,928	7,552
COCOS IS.	131,949	7,331
YEMEN	131,810	7,323
MONTSERRAT	127,776	7,099
ZIMBABWE	116,439	6,469
UZBEKISTAN	109,524	6,085
TOKELAU IS.	101,091	5,616
LESOTHO	100,730	5,596
PARAGUAY	99,586	5,533
CHRISTMAS IS.	95,894	5,327
CAMBODIA	83,638	4,647
SLOVAKIA	82,566	4,587
BENIN	78,870	4,382
MAURITANIA	76,006	4,223
TOGO	75,233	4,180
FRENCH SOUTHERN TER.	60,386	3,355
COOK IS.	57,261	3,181
MOLDOVA	53,458	2,970
SIERRA LEONE	48,276	2,682
FALKLAND IS.	46,660	2,592
GIBRALTAR	45,463	2,526
UGANDA	38,976	2,165
CONGO (KINSHASA)	36,977	2,054
CAPE VERDE	36,598	2,033
SUDAN	29,928	1,663
PITCAIRN IS.	28,286	1,571
GAZA STRIP	25,573	1,421
VANUATU	25,466	1,415
FRENCH GUIANA	19,008	1,056
BOTSWANA	18,760	1,042
BURKINA FASO	17,956	998
ERITREA	13,878	771
ALBANIA	13,824	768
TANZANIA	12,980	721
ST.HELENA	12,725	707
CHAD	10,500	583

Table 3.1. Continued

COUNTRY	Value: 1989-2006	Average Value
IRAQ	4,793	266
KYRGYZSTAN	4,637	258
KAZAKHSTAN	4,375	243
TUVALU	3,524	196
ALGERIA	3,270	182
Total	69,538,800,000	3,863,266,667

Source of data: National Marine Fisheries Service, Office of Science and Technology

Figure 3.1. U.S. Annual Export Value (2006 Constant Dollars), 1989-2006



Source of Data: NOAA Fisheries, Office of Science and Technology.

### 3.2 Our International Sources of Imports

U.S. consumers heavily rely on foreign supplies to satisfy their appetite for seafood. The U.S. imported \$179.0 billion worth of seafood and related products from 215 nations or geographic entities between 1989 and 2006, or an average annual level of \$9.9 billion. On a live weight equivalent basis, the U.S. imported 155.0 billion pounds of seafood and related products between 1989 and 2006. On an average annual basis, we imported approximately 8.6 billion pounds per year.

The top five nations exporting to the U.S. between 1989 and 2006 were as follows: (1) Canada--\$33.8 billion; (2) Thailand--\$26.5 billion; (3) China--\$13.3 billion; (4) Ecuador--\$10.5 billion; and (5) Mexico--\$9.0 billion. Combined, these five nations accounted for 52.0 % of the total value of all seafood and related products imported by the United States between 1989 and 2006. If we include the next top five nations—Chile, Indonesia, Vietnam, India and Iceland, U.S. imports from the top ten nations accounted for 67.7 % of the total value of seafood and related products imported between 1989 and 2006.

In 2006, the top 10 nations or geographical entities exporting to the U.S. were Canada, China, Thailand, Chile, Indonesia, Vietnam, Ecuador, Mexico, the Russian Federation, and Indian. These 10 nations accounted for 75.7 % of the total value of all seafood and related products imported into the United States in 2006. In 2006, however, 139 nations exported seafood and related products to the U.S. Over the years, there have been substantial changes in the leading exporters to the United States (Table 3.2). Canada has generally been the largest exporter of seafood and related products to the United States. Canada ranked number one in the value of exports to the U.S. in every year between 1989 and 2006, except for 1990, 1994, and 1995. Thailand ranked second in value of exports to the U.S. in all years except 1994, 1995, and 2006. Four nations—Mexico, China, Ecuador, and Thailand—have ranked third in the value of exports to the United States. Five nations ranked fourth in the value of exports to the U.S. between 1989 and 2006—Ecuador, Mexico, China, Vietnam, Chile. Rounding out the ranking of the five nations having the fifth highest value of exports to the U.S. between 1989 and 2006 are China, Mexico, Chile, and Indonesia.

If we work backwards and examine the change in the share of the total value of seafood and related products' exports to the United States relative to the top six nations exporting to the U.S. in 2006, we see a story of emerging growth in many nations (Figure 3.2).<sup>16</sup> We find that there has been steady growth and exports to the U.S. by China, Chile, and Indonesia. Vietnam had steady growth until 2003, but declined between 2004 and 2006. Despite being a major exporter of product to the U.S., the value of exports by Thailand to the U.S. have been highly erratic and declining relative to earlier years.

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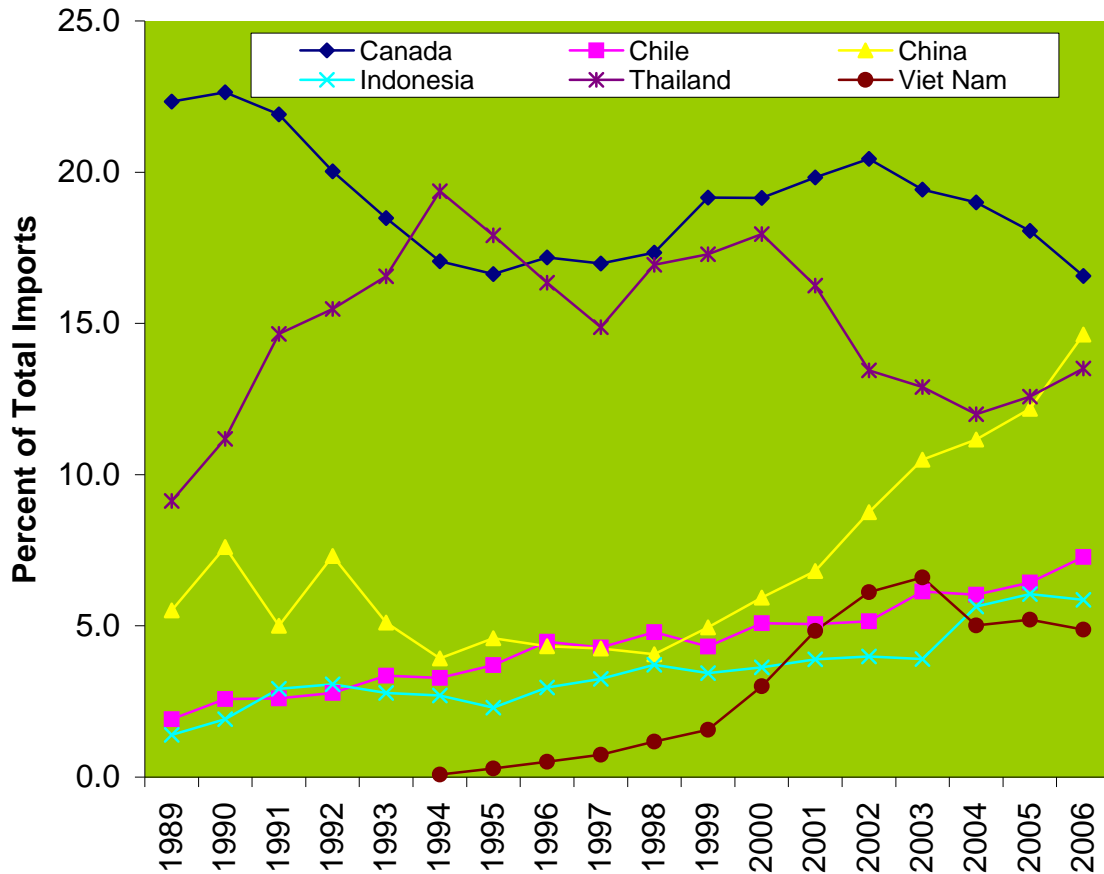
<sup>16</sup> We include six nations because the sixth nation is Vietnam, which has dramatically increased its exports to the U.S. over the past 18 years. Imports from Vietnam increased from \$3.2 million in 1994 to \$483.0 million in 2006.



Table 3.2. Top Ten Fish and Related Products Exporting Nations, Selected Years

	1990		1995
CANADA	1,700,000,000	THAILAND	1,540,000,000
THAILAND	840,000,000	CANADA	1,430,000,000
CHINA	571,000,000	ECUADOR	702,000,000
ECUADOR	484,000,000	MEXICO	570,000,000
MEXICO	404,000,000	CHINA	395,000,000
CHINA - TAIPEI	237,000,000	CHILE	318,000,000
JAPAN	217,000,000	CHINA - TAIPEI	241,000,000
ICELAND	205,000,000	ICELAND	232,000,000
CHILE	194,000,000	NEW ZEALAND	209,000,000
AUSTRALIA	186,000,000	INDONESIA	197,000,000
	2000		2006
CANADA	2,240,000,000	CANADA	2,220,000,000
THAILAND	2,100,000,000	CHINA	1,960,000,000
CHINA	694,000,000	THAILAND	1,810,000,000
MEXICO	622,000,000	CHILE	975,000,000
CHILE	596,000,000	INDONESIA	785,000,000
INDONESIA	424,000,000	VIETNAM	653,000,000
ECUADOR	421,000,000	ECUADOR	571,000,000
VIETNAM	351,000,000	MEXICO	477,000,000
INDIA	329,000,000	RUSSIAN FEDERATION	375,000,000
RUSSIAN FEDERATION	298,000,000	INDIA	324,000,000

Figure 3.2. Share of the Value of Total Imports by Nation, 1989-2006



Examination of the quantity of imports, however, reveals a slightly different picture than that depicted by the value of imports (Figure 3.3). Canada was the major exporter of product to the U.S. through 2002, but China has been the major exporter since 2004. Thailand had the second highest level of exports to the U.S. in 2006. China's rise to being the major exporter to the U.S. is not surprising given the general price levels of products imported to the U.S. In 2006, the average price of imported products from China was \$0.69 per pound (live weight); the average price for Canadian product was \$1.71 per pound (Table 3.3). Between 1989 and 2006, average prices per pound of imported product from Canada and Chile increased, while prices for product from China, Indonesia, and Vietnam decreased. Prices for product from Thailand were about the same in 2006 as they were in 1989.

Figure 3.3. Import Quantities (Live Weight, lbs), by Nation

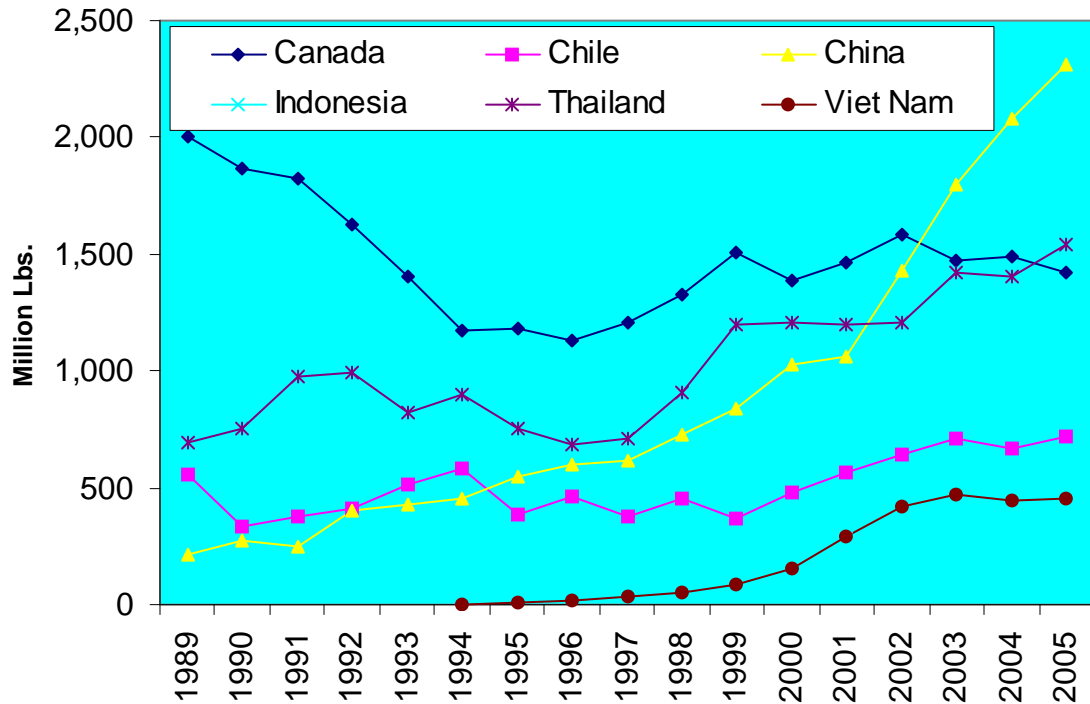


Table 3.3. Average Import Price Per Pound, by Nation

YEAR	Canada	Chile	China	Indonesia	Thailand	Vietnam
1989	0.91	0.28	2.07	1.45	1.07	
1990	0.91	0.58	2.09	1.60	1.11	
1991	0.95	0.54	1.57	1.29	1.17	
1992	0.94	0.52	1.38	1.39	1.20	
1993	1.03	0.51	0.93	1.36	1.57	
1994	1.26	0.49	0.74	1.35	1.85	2.35
1995	1.21	0.83	0.72	1.11	2.05	2.61
1996	1.27	0.81	0.60	1.43	1.99	2.41
1997	1.33	1.07	0.66	1.67	1.98	2.29
1998	1.29	1.04	0.55	1.59	1.84	2.35
1999	1.36	1.25	0.63	1.31	1.54	2.04
2000	1.61	1.24	0.67	1.45	1.74	2.24
2001	1.52	1.00	0.72	1.30	1.52	1.88
2002	1.46	0.91	0.69	1.25	1.26	1.64
2003	1.60	1.04	0.71	1.18	1.10	1.70
2004	1.53	1.08	0.64	1.29	1.03	1.36
2005	1.58	1.10	0.65	1.25	1.01	1.41
2006	1.71	1.44	0.69	1.23	1.06	1.35

### 3.3 What Are We Importing from These Six Top Nations

In the next chapter, we present a more comprehensive description of products and their trends that we export and import, but in this section, we provide a brief overview of the trends in the 10 major import commodities from the six major exporting nations (Table 3.4). Major commodities, although varying by nation, include shrimp, salmon, crabs and tuna. Among our six major nations and top 10 import commodities by nation, shrimp ranks in the top 10 for all nations except Chile; salmon ranks in the top 10 for all nations except Indonesia; tuna is among the top 10 for Indonesia, Thailand, and Vietnam; and the other commodities vary considerably by nation.

Table 3.4. Top Ten Imports Per Six Major Exporting Nations

Nation	Product Code	Weight-lbs	2006 Value	2006 Price	Share of Total-lbs	Share-Value	
Canada	Lobster	114,000,000	705,000,000	6.2	0.98	5.26	
	Salmon	241,000,000	490,000,000	2.03	2.08	3.66	
	Crabs	184,000,000	321,000,000	1.75	1.59	2.4	
	Other Fish/Shellfish	86,440,747	116,000,000	1.34	0.75	0.87	
	Groundfish	149,000,000	101,000,000	0.68	1.28	0.75	
	Flatfish	41,537,682	85,369,388	2.06	0.36	0.64	
	Fish NSPF	112,000,000	80,259,962	0.72	0.97	0.6	
	Shrimp	54,593,626	65,529,453	1.2	0.47	0.49	
	Scallops	8,192,106	61,136,510	7.46	0.07	0.46	
	Sticks	67,771,420	46,503,529	0.69	0.58	0.35	15.46
Chile	Salmon	452,000,000	805,000,000	1.78	3.9	6.01	
	Toothfish	16,698,757	48,528,676	2.91	0.14	0.36	
	Fish NSPF	68,258,875	44,659,261	0.65	0.59	0.33	
	Other Fish/Shellfish	38,734,156	38,635,008	1	0.33	0.29	
	Crabs	10,726,328	9,543,363	0.89	0.09	0.07	
	Crustaceans	2,487,682	5,401,605	2.17	0.02	0.04	
	Shellfish Other	72,605,415	5,066,727	0.07	0.63	0.04	
	Swordfish	2,325,908	4,602,447	1.98	0.02	0.03	
	Mussels	1,739,891	2,857,210	1.64	0.01	0.02	
	Molluscs	3,007,831	2,156,348	0.72	0.03	0.02	7.21

Table 3.4. Continued

Nation	Product Code	Weight-lbs	2006 Value	2006 Price	Share of Total-lbs	Share-Value	
China	Groundfish	822,000,000	391,000,000	0.47	7.09	2.92	
	Shrimp	255,000,000	332,000,000	1.3	2.2	2.48	
	Tilapia	591,000,000	255,000,000	0.43	5.09	1.9	
	Fish NSPF	297,000,000	213,000,000	0.72	2.56	1.59	
	Other Fish/Shellfish	169,000,000	121,000,000	0.72	1.46	0.9	
	Crabs	134,000,000	119,000,000	0.88	1.16	0.89	
	Squid	72,315,646	98,498,659	1.36	0.62	0.74	
	Salmon	113,000,000	97,543,063	0.87	0.97	0.73	
	Flatfish	131,000,000	97,541,495	0.75	1.13	0.73	
	Scallops	31,516,246	87,910,709	2.79	0.27	0.66	13.53
	Indonesia	Shrimp	264,000,000	431,000,000	1.63	2.28	3.22
Crabs		132,000,000	129,000,000	0.98	1.14	0.96	
Tuna		85,641,623	75,726,416	0.88	0.74	0.57	
Fish NSPF		63,853,632	73,611,122	1.15	0.55	0.55	
Tilapia		56,581,225	36,803,188	0.65	0.49	0.27	
Other Fish/Shellfish		24,109,981	22,634,171	0.94	0.21	0.17	
Snapper		3,770,190	5,755,855	1.53	0.03	0.04	
Clams		2,020,226	2,561,590	1.27	0.02	0.02	
Catfish		3,660,660	2,373,141	0.65	0.03	0.02	
Swordfish		1,190,551	1,603,931	1.35	0.01	0.01	5.83
Thailand		Shrimp	970,000,000	1,280,000,000	1.32	8.36	9.55
	Tuna	472,000,000	288,000,000	0.61	4.07	2.15	
	Crabs	80,645,539	75,463,372	0.94	0.7	0.56	
	Other Fish/Shellfish	39,359,106	38,359,428	0.97	0.34	0.29	
	Squid	16,317,589	30,131,879	1.85	0.14	0.22	
	Salmon	14,171,061	21,702,923	1.53	0.12	0.16	
	Fish NSPF	23,074,689	19,686,298	0.85	0.2	0.15	
	Catfish	21,528,078	11,980,252	0.56	0.19	0.09	
	Groundfish	12,362,429	11,253,287	0.91	0.11	0.08	
	Molluscs	8,502,259	8,750,386	1.03	0.07	0.07	13.32
	Vietnam	Shrimp	176,000,000	429,000,000	2.44	1.52	3.2
Crabs		59,473,637	58,974,623	0.99	0.51	0.44	
Catfish		112,000,000	53,131,414	0.48	0.97	0.4	
Tuna		59,000,313	44,254,457	0.75	0.51	0.33	
Fish NSPF		53,947,598	40,028,173	0.74	0.47	0.3	
Other Fish/Shellfish		13,288,361	12,378,155	0.93	0.11	0.09	
Clams		2,340,339	4,754,440	2.03	0.02	0.04	
Squid		2,307,749	4,270,333	1.85	0.02	0.03	
Molluscs		1,403,041	1,097,214	0.78	0.01	0.01	
Swordfish		651,585	997,318	1.53	0.01	0.01	4.84

### 3.4 Our Top 15 Trading Nations

The U.S. Bureau of Economic Analysis, U.S. Census Bureau rates trading nations according to the sum of the value of imports and exports or the total value of all trade. In 2006, the top trading nations, as measured by the value of imports and exports of all goods, were as follows: (1) Canada, (2) China, (3) Mexico, (4) Japan, (5) Germany, (6) United Kingdom, (7) South Korea, (8) France, (9) Taiwan, (10) Malaysia, (11) Netherlands, (12) Venezuela, (13) Brazil, (14) Italy, and (15) Singapore. These 15 nations accounted for 73.4 % of the total U.S. trade in goods (Table 3.5).<sup>17</sup>

We similarly consider our top 15 nations in terms of U.S. imports and U.S. exports of goods (Tables 3.6 and 3.7).<sup>18</sup> In 2006, Canada was also our major nation in terms of both imports and exports. Mexico was our second major exporting nation and our third major source of imports. China was our fourth major nation in terms of U.S. exports and our second major source of imports. Once we get below our seven major importing and exporting nations, the nations change considerably. For example, the Netherlands ranks eighth in terms of nations to which the U.S. exports, but it is not in the top 15 nations from which we import goods.

Table 3.5 Top 15 Trade Partners in 2006 Based on Total Trade Value (\$ Billions, 2006)

Nation	Exports	Imports	Total, All Trade	Rank	Percent of Total Trade
Total, All Nations	1,037.3	1,855.4	2,892.7	---	100.0 %
Total, Top 15	755.2	1,369.1	2,124.3	---	73.4 %
Canada	230.6	303.4	534.0	1	18.5 %
China	55.2	287.8	343.0	2	11.9 %
Mexico	134.2	198.3	332.4	3	11.5 %
Japan	59.6	148.1	207.7	4	7.2 %
Germany	41.3	89.1	130.4	5	4.5 %
United Kingdom	45.4	53.4	98.8	6	3.4 %
South Korea	32.5	45.8	78.3	7	2.7 %
France	24.2	37.1	61.4	8	2.1 %
Taiwan	23.0	38.2	61.2	9	2.1 %
Malaysia	12.6	36.5	49.1	10	1.7 %
Netherlands	31.1	17.3	48.4	11	1.7 %
Venezuela	9.0	37.2	46.2	12	1.6 %
Brazil	19.2	26.4	45.6	13	1.6 %
Italy	12.6	32.7	45.2	14	1.6 %
Singapore	24.7	17.8	42.5	15	1.5 %

<sup>17</sup> The U.S. imports and exports both goods and services, but the U.S. Census Bureau rates trading nations using only the dollar value of goods.

<sup>18</sup> Values should not be directly compared to the values of imports because of potential or incomplete reporting in either the total trade or the seafood and related product series' data.

Table 3.6. Top 15 Trade Partners in 2006 Based on Total Export Value (\$ Billions, 2006)

Nation	Exports	Rank	Percent of Total Trade
Total, All Nations	1,037.3	---	100.0 %
Total, Top 15	778.0	---	75.0 %
Canada	230.6	1	22.2 %
Mexico	134.2	2	12.9 %
Japan	59.6	3	5.8 %
China	55.2	4	5.3 %
United Kingdom	45.4	5	4.4 %
Germany	41.3	6	4.0 %
South Korea	32.5	7	3.1 %
Netherlands	31.1	8	3.0 %
Singapore	24.7	9	2.4 %
France	24.2	10	2.3 %
Taiwan	23.0	11	2.2 %
Belgium	21.3	12	2.1 %
Brazil	19.2	13	1.9 %
Australia	17.8	14	1.7 %
Hong Kong	17.8	15	1.7 %

Table 3.7. Top 15 Trade Partners in 2006 Based on Total Import Value (\$ Billions, 2006)

Nation	Imports	Rank	Percent of Total Trade
Total, All Nations	1,855.4	---	100.0 %
Total, Top 15	1,395.8	---	75.2 %
Canada	303.4	1	16.4 %
China	287.8	2	15.5 %
Mexico	198.3	3	10.7 %
Japan	148.1	4	8.0 %
Germany	89.1	5	4.8 %
United Kingdom	53.4	6	2.9 %
South Korea	45.8	7	2.5 %
Taiwan	38.2	8	2.1 %
Venezuela	37.2	9	2.0 %
France	37.1	10	2.0 %
Malaysia	36.5	11	2.0 %
Italy	32.7	12	1.8 %
Saudi Arabia	31.7	13	1.7 %
Ireland	28.6	14	1.5 %
Nigeria	27.9	15	1.5 %

Using the same criteria for ranking trading nations as used by the U.S. Bureau of Economic Analysis, we examine total trade values for seafood and related products. We initially, however, compare the total value of trade for seafood and related products to our top 15 trading nations for all goods. We then summarize our top 15 partners relative to total trade, total export value, and total import value.

Our order of trade rankings in terms of the value of imports plus exports of seafood closely follows that for the value of total trade in goods (Table 3.8). Canada and China rank first and second, but the order of Mexico and Japan are reversed. When we rank nations according to trade in seafood and related products, we end up with different rankings, but Canada, China, Japan, Mexico, Germany, and the Netherlands still retain very high rankings (Table 3.9). Some of the nations we export seafood and related products are the same as those occupying the top spots in total trade of all goods (Table 3.10). In terms of the nations from which the U.S. imports seafood and related products and are recognized as major trading partners in all goods, only Canada, China, Mexico, Japan, and Malaysia are in the top 15 (Table 3.11).

Table 3.8. Total Trade (Import + Export Value) in Seafood and Related Products for Top 15 U.S. Trading Partners in Goods, 2006

Nation	Value--\$ Millions.
Canada	2,916.4
China	2,443.1
Mexico	562.5
Japan	1,155.7
Germany	272.1
United Kingdom	183.9
South Korea	497.8
France	162.6
Taiwan	137.7
Malaysia	171.7
Netherlands	212.1
Venezuela	96.1
Brazil	134.5
Italy	74.7
Singapore	39.3



Table 3.9. Top 15 Trading Partners in Seafood, 2006

Nation	\$ Millions
CANADA	2,916.4
CHINA	2,443.2
THAILAND	1,846.6
JAPAN	1,155.7
CHILE	981.0
INDONESIA	789.8
VIETNAM	659.8
ECUADOR	581.0
MEXICO	562.5
SOUTH KOREA	497.8
RUSSIAN FEDERATION	421.8
INDIA	330.3
PHILIPPINES	278.7
GERMANY	272.1
NETHERLANDS	212.1

Table 3.10. Top 15 Nations for U.S. Exports in Seafood and Related Products, 2006

COUNTRY	\$ Millions
JAPAN	947.6
CANADA	695.1
CHINA	485.0
SOUTH KOREA	415.2
GERMANY	263.3
NETHERLANDS	177.3
FRANCE	142.7
UNITED KINGDOM	118.1
SPAIN	94.5
MEXICO	85.5
ITALY	64.4
PORTUGAL	57.9
CHINA - HONG KONG	55.5
AUSTRALIA	48.1
RUSSIAN FEDERATION	46.5

Table 3.11. Top 15 Nations for U.S. Imports in Seafood and Related Products, 2006

COUNTRY	\$ Millions
CANADA	2,221.3
CHINA	1,958.2
THAILAND	1,812.1
CHILE	975.4
INDONESIA	784.5
VIETNAM	652.7
ECUADOR	571.3
MEXICO	477.0
RUSSIAN FEDERATION	375.3
INDIA	323.8
PHILIPPINES	270.4
JAPAN	208.1
BANGLADESH	192.9
MALAYSIA	165.3
NORWAY	157.4

### 3.5 Surpluses and Trading Nations

Trade surpluses are normally viewed as positive contributions to the economy of a nation. A surplus, however, simply states that we are exporting more than we are importing, which means we are generating domestic jobs and keeping more dollars at home. It infers nothing about our quality of life and social well-being. In actuality, a surplus or deficit on a commodity basis may not be a very useful economic metric. A preferred metric would be economic well-being or benefits to society. For example, in the case of exports exceeding imports, it may be that “yes, we are generating domestic jobs and retaining our currency,” but we may also be depriving our citizens of benefits associated with distributing more of our goods on a domestic basis. The same reasoning also applies to imports and deficits. With deficits caused by imports exceeding exports, there is often concern about exporting jobs and our dollars, but in actuality, many goods for which there are deficits may generate large and positive economic well-being for society.

In 2006, the United States had an overall deficit of \$9.3 billion in trade of seafood and related products. Out of a total of 180 nations for which the U.S. engaged in trade of seafood, the United States had a surplus (the value of exports exceeded the value of imports) in trade with 74 nations. Japan was the top nation for which the United States had a surplus balance of trade in seafood and related products (Table 3.12). South Korea, Germany, the Netherlands, and France rounded out the top five. The 15<sup>th</sup> ranked nation in terms of a surplus balance of trade was Afghanistan.

Table 3.12. Top 15 Seafood Trading Nations and U.S. Surplus Balance of Trade, 2006

COUNTRY	2006 Dollar Value		
	Imports	Exports	Exports Less Imports
JAPAN	208,071,000	947,579,000	739,508,000
SOUTH KOREA	82,518,300	415,249,000	332,730,700
GERMANY	8,861,550	263,269,000	254,407,450
NETHERLANDS	34,809,100	177,284,000	142,474,900
FRANCE	19,889,900	142,686,000	122,796,100
ITALY	10,292,300	64,444,300	54,152,000
UNITED KING	65,744,000	118,137,000	52,393,000
PORTUGAL	9,768,030	57,929,800	48,161,770
SPAIN	52,336,100	94,464,800	42,128,700
CHINA – HONG KONG	15,792,700	55,458,100	39,665,400
BELGIUM	574,002	38,283,200	37,709,198
UKRAINE	6,310,090	44,011,900	37,701,810
LITHUANIA	1,439,480	15,084,100	13,644,620
DENMARK	8,523,400	22,149,000	13,625,600
AFGHANISTAN		10,184,700	10,184,700

An examination of the balance of trade for these same nations over time, 1989 – 2006, suggests a different pattern. We restrict our assessment, however, to only the top five nations in 1990, 1995, 2000, and 2006 because of the large number of tables required to assess all 15 nations each year (Table 3.13). Except for Japan, which retains a top spot as the highest surplus for a nation, we find that the other nations for which we have surpluses have changed over time. We had a surplus balance of trade with the United Kingdom in 1990 and 1995, but the UK does not show up in 2000 or 2006 as among the top five. South Korea is not among the top five surplus balance of payments nations in 1990 and 1995, but is so in 2000 and 2006.

Table 3.13. Top Five U.S. Surplus Balance of Trade Nations in Fish and Seafood

1990			1995		
Nation	Rank	\$ Millions	Nation	Rank	\$ Millions
JAPAN	1	2,414.6	JAPAN	1	2,315.7
UNITED KING	2	109.1	UNITED KING	2	97.4
FRANCE	3	105.6	FRANCE	3	58.6
GERMANY	4	86.6	NETHERLANDS	4	56.0
NETHERLANDS	5	51.3	CHINA – HONG ONG	5	49.4
Total	15	2,767.2	Total	15	2,577.1
2000			2006		
Nation	Rank	\$ Millions	Nation	Rank	\$ Millions
JAPAN	1	1,158.7	JAPAN	1	739.5
SOUTH KOREA	2	154.8	SOUTH KOREA	2	332.7
FRANCE	3	84.8	GERMANY	3	254.4
ITALY	4	57.2	NETHERLANDS	4	142.5
GERMANY	5	49.2	FRANCE	5	122.8
Total	15	1,504.5	Total	15	1,591.9

In contrast, what has been happening to the trade surplus with the top five nations of 2006? Japan maintained the top spot for a U.S. surplus in the balance of payments in all years between 1989 and 2006 (Table 3.14). The other four nations, however, have been highly erratic, with the possible exception of France, which has, at least, been in the top five rankings over all years. The Netherlands has ranged between fourth and 60<sup>th</sup>. Germany has been ranked as high as third and as low as 10<sup>th</sup> in terms of a surplus balance of trade. South Korea has steadily held the second spot since 1999.

Table 3.14. Ranking of Top 2006 Five Surplus Nations, 1989 – 2006

Year	Japan	South Korea	Germany	Netherlands	France
1989	1		10	12	3
1990	1		4	5	3
1991	1	7	4	5	3
1992	1	7	9	26	3
1993	1	10	7	23	3
1994	1	7	9	24	3
1995	1	6	8	4	3
1996	1	3	8	7	4
1997	1	5	9	7	2
1998	1	6	4	7	2
1999	1	2	9	10	3
2000	1	2	5	10	3
2001	1	2	3	33	5
2002	1	2	3	5	4
2003	1	2	3	4	5
2004	1	2	3	33	4
2005	1	2	3	26	5
2006	1	2	3	60	5

### 3.6 Deficits and Trading Nations

In contrast to surpluses, deficit balances of trade tend to excite the American people and, in particular, U.S. policy makers. Deficits are almost automatically associated with jobs and dollars leaving America. “We are losing our competitive advantage” is a conclusion of many individuals. In reality, while we might not want deficits, we have to consider what is it that we are obtaining from foreign nations. In the case of seafood, we are obtaining regularity in supply, lower prices, and in some instances, possibly higher quality product.

Between 1989 and 2006, the U.S. had a large and growing deficit in the trade of marine products. The deficit, the value of imports less the value of exports, reached \$9.3 billion in 2006 (Figure 3.4). From which nations do we import more than we export? Topping the list in 2006 was Thailand, which exported \$1.8 billion to the U.S. but imported only \$34.5 million from the U.S. (Table 3.15). Our deficit with just Thailand equaled \$1.78 billion in 2006. Second on the list was Canada; we had a deficit of \$1.5 billion in seafood and related products in 2006; third was China (\$1.5 billion); fourth was Chile (nearly \$1.0 billion); and fifth was Indonesia (\$0.8 billion). The top five nations for which we have deficits accounted for 57.7 % of the total deficit in seafood and related products in 2006; the top 15 nations accounted for 82.1 % of the total deficit. In 2006, the U.S. had deficits in seafood and related products’ trade with 105 nations.

Figure 3.4. U.S. Deficit in Seafood and Related Products, (2006 Constant Dollars)

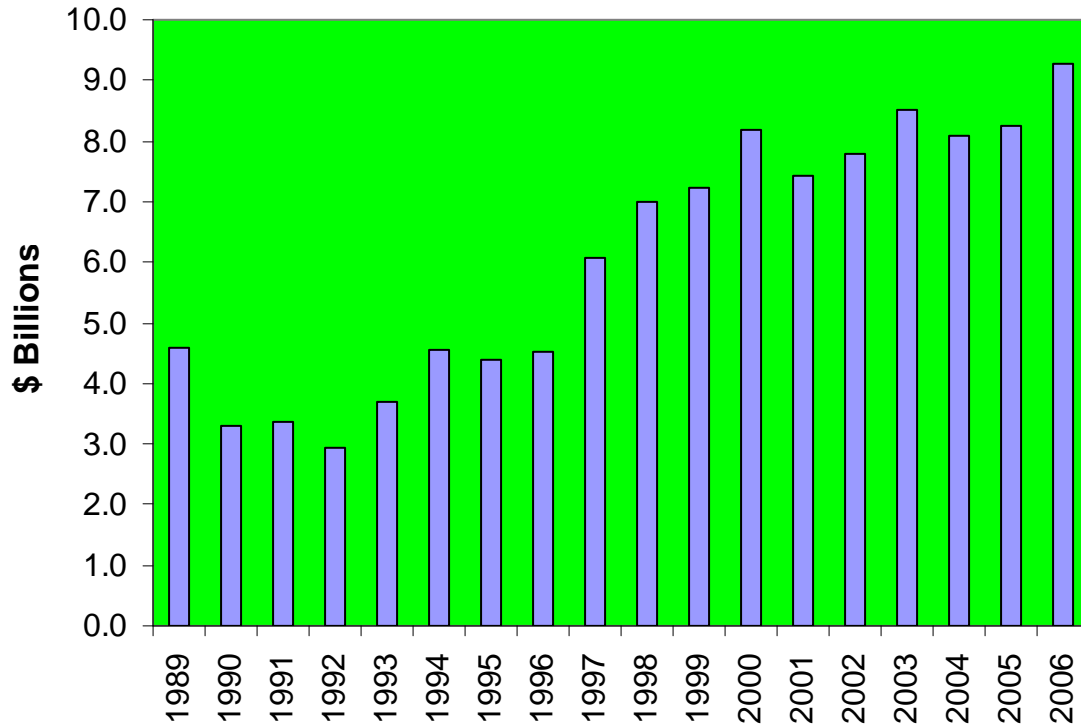


Table 3.15. Top 15 Deficit Nations in Trade of Seafood and Related Products, 2006

Nation	Million Dollars		
	Import Value	Export Value	Balance of Trade
Thailand	1,812.1	34.5	1,777.6
Canada	2,221.3	695.1	1,526.2
China	1,958.2	485.0	1,473.2
Chile	975.4	5.6	969.8
Indonesia	784.5	5.3	779.2
Vietnam	652.7	7.1	645.6
Ecuador	571.3	9.7	561.7
Mexico	477.0	85.5	391.5
Russian Federation	375.3	46.5	328.8
India	323.8	6.5	317.3
Philippines	270.4	8.3	262.1
Bangladesh	192.9	1.3	191.6
Malaysia	165.3	6.4	159.0
Honduras	146.2	0.5	145.6
Iceland	139.9	0.7	139.2

What about the dynamics of the nations and deficits in seafood and related products? How have they changed over time? In 1989, the top 10 nations for which the

U.S. had deficits in trade were Canada, Thailand, Mexico, Ecuador, China, Iceland, China-Taipei, New Zealand, Norway, and the Philippines (Table 3.16). One year later, Norway and the Philippines are no longer part of the top ten, but Australia and Chile are in the top 10 nations. In 1991, Indonesia becomes one of the top ten nations for which the U.S. has a deficit in the trade of seafood and related products. In 1995, the Russian Federation is among the top ten. In 2000, the nation Vietnam is among the top 10 nations for which we have a deficit in trade; Vietnam has been among the top 10 nations since 2000. In 2006, Vietnam ranked 6<sup>th</sup> with a deficit of \$0.6 billion.

Table 3.16 Top 10 Deficit Nations over Time, 1989-2006

YEAR	COUNTRY	\$ Millions	Rank of Balance of Payments
1989	CANADA	-1,512.60	1
	THAILAND	-728.7	2
	MEXICO	-545.7	3
	ECUADOR	-515.2	4
	CHINA	-446.8	5
	ICELAND	-247.1	6
	CHINA - TAI	-245.3	7
	NEW ZEALAND	-203.3	8
	NORWAY	-191.4	9
	PHILIPPINES	-162.4	10
1990	CANADA	-1,231.10	1
	THAILAND	-823.4	2
	CHINA	-568.1	3
	ECUADOR	-482.4	4
	MEXICO	-370.5	5
	ICELAND	-200.3	6
	CHILE	-192.2	7
	NEW ZEALAND	-175.7	8
	AUSTRALIA	-157.7	9
	CHINA - TAI	-145.2	10
1991	CANADA	-1,244.40	1
	THAILAND	-1,130.70	2
	ECUADOR	-562.4	3
	CHINA	-369.4	4
	MEXICO	-363.9	5
	ICELAND	-250.4	6
	INDONESIA	-224.7	7
	CHILE	-203	8
	NEW ZEALAND	-201.4	9
	CHINA - TAI	-141	10
1992	THAILAND	-1,167.30	1
	CANADA	-1,105.30	2
	ECUADOR	-568.6	3
	CHINA	-531.4	4
	MEXICO	-295	5
	INDONESIA	-229.8	6
	CHILE	-211	7
	NEW ZEALAND	-199.7	8
	ICELAND	-192.4	9
	CHINA - TAI	-143.4	10



Table 3.16. Continued

YEAR	COUNTRY\$	\$ Millions	Rank of Balance of Payments
1993	THAILAND	-1,260.00	1
	CANADA	-958.3	2
	ECUADOR	-560.6	3
	CHINA	-359.2	4
	MEXICO	-334.3	5
	ICELAND	-270	6
	CHILE	-258.9	7
	INDONESIA	-212.8	8
	NEW ZEALAND	-209	9
	CHINA - TAI	-169.8	10
1994	CANADA	-1,649.40	1
	CHILE	-962.1	2
	CHINA	-687.8	3
	ECUADOR	-358	4
	ICELAND	-281.6	5
	INDIA	-280.2	6
	INDONESIA	-276.4	7
	MEXICO	-230	8
	NEW ZEALAND	-204.6	9
	THAILAND	-181.2	10
1995	THAILAND	-1,506.70	1
	CANADA	-838.9	2
	ECUADOR	-695.1	3
	MEXICO	-537.6	4
	CHILE	-317	5
	CHINA	-296.5	6
	ICELAND	-230.3	7
	NEW ZEALAND	-206.8	8
	INDONESIA	-191.5	9
	RUSSIAN FED	-175.7	10
1996	THAILAND	-1,336.60	1
	CANADA	-848.6	2
	ECUADOR	-611.1	3
	MEXICO	-533.8	4
	CHILE	-373.9	5
	CHINA	-251.7	6
	INDONESIA	-243.2	7
	ICELAND	-227.4	8
	RUSSIAN FED	-213.9	9
	NEW ZEALAND	-183.3	10

Table 3.16. Continued

YEAR	COUNTRY	\$ Millions	Rank of Balance of Payments
1997	THAILAND	-1,391.00	1
	CANADA	-1,044.80	2
	ECUADOR	-866.4	3
	MEXICO	-552.6	4
	CHILE	-404	5
	INDONESIA	-303.9	6
	RUSSIAN FED	-270	7
	CHINA	-245.9	8
	ICELAND	-229.7	9
	INDIA	-200.7	10
1998	THAILAND	-1,659.20	1
	CANADA	-1,141.50	2
	ECUADOR	-832.2	3
	MEXICO	-509.6	4
	CHILE	-471.7	5
	INDONESIA	-364.4	6
	CHINA	-304.4	7
	RUSSIAN FED	-299.6	8
	ICELAND	-234.4	9
	INDIA	-210.4	10
1999	THAILAND	-1,835.50	1
	CANADA	-1,348.10	2
	ECUADOR	-643.9	3
	MEXICO	-519.4	4
	CHILE	-460.3	5
	CHINA	-402.3	6
	INDONESIA	-365.1	7
	RUSSIAN FED	-353.9	8
	ICELAND	-290.6	9
	INDIA	-230.3	10
2000	THAILAND	-2,074.20	1
	CANADA	-1,529.70	2
	CHILE	-594.9	3
	MEXICO	-533.5	4
	CHINA	-494.2	5
	INDONESIA	-422	6
	ECUADOR	-415.6	7
	VIETNAM	-349	8
	INDIA	-321.3	9
	RUSSIAN FED	-292.4	10

Table 3.16. Continued

YEAR	COUNTRY	\$ Millions	Rank of Balance of Payments
2001	THAILAND	-1,778.30	1
	CANADA	-1,546.30	2
	CHINA	-576.9	3
	CHILE	-561.5	4
	VIETNAM	-534.8	5
	MEXICO	-469.2	6
	ECUADOR	-440.8	7
	INDONESIA	-432	8
	INDIA	-328.2	9
	RUSSIAN FED	-234.1	10
2002	CANADA	-1,635.50	1
	THAILAND	-1,478.70	2
	CHINA	-792.4	3
	VIETNAM	-681.5	4
	CHILE	-573.1	5
	ECUADOR	-482.5	6
	INDONESIA	-447.4	7
	INDIA	-433.9	8
	MEXICO	-339.3	9
	RUSSIAN FED	-289.3	10
2003	CANADA	-1,652.10	1
	THAILAND	-1,513.90	2
	CHINA	-1,029.50	3
	VIETNAM	-796.3	4
	CHILE	-736.1	5
	ECUADOR	-525.4	6
	INDIA	-485.8	7
	INDONESIA	-466.4	8
	MEXICO	-343.4	9
	RUSSIAN FED	-264	10
2004	CANADA	-1,560.70	1
	THAILAND	-1,388.20	2
	CHINA	-1,002.10	3
	CHILE	-720.8	4
	INDONESIA	-671.3	5
	VIETNAM	-596.3	6
	ECUADOR	-474.3	7
	INDIA	-425.6	8
	MEXICO	-368.6	9
	PHILIPPINES	-218.5	10

Table 3.16. Continued

YEAR	COUNTRY	\$ Millions	Rank of Balance of Payments
2005	THAILAND	-1,518.10	1
	CANADA	-1,514.10	2
	CHINA	-1,087.00	3
	CHILE	-795.3	4
	INDONESIA	-745.3	5
	VIETNAM	-640.8	6
	ECUADOR	-532.9	7
	INDIA	-381.7	8
	MEXICO	-371.3	9
	RUSSIAN FED	-283.1	10
2006	THAILAND	-1,777.60	1
	CANADA	-1,526.20	2
	CHINA	-1,473.20	3
	CHILE	-969.8	4
	INDONESIA	-779.2	5
	VIETNAM	-645.6	6
	ECUADOR	-561.7	7
	MEXICO	-391.5	8
	RUSSIAN FED	-328.8	9
	INDIA	-317.3	10

## 4.0 What Do We Import and Export?

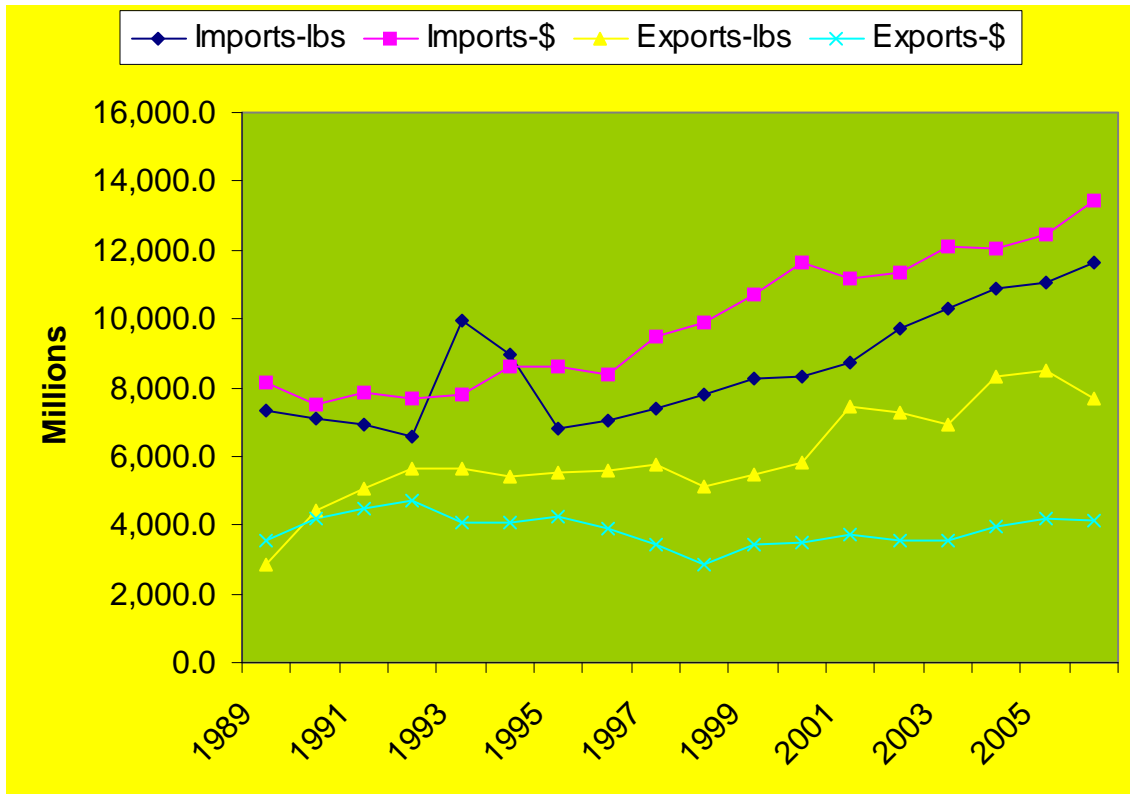
### 4.1 Trends in Trade in Seafood and Related Products

It should be no surprise that U.S. imports and exports are both increasing. The trend in exports, however, has been considerably more variable than the trend in imports over time. Between 1989 and 2006, the value of exports increased from \$3.6 billion to \$4.1 billion, and the value of imports increased from \$8.2 to \$13.4 billion. In contrast to the value of imports and exports, the volume or quantity of exports and imports has steadily increased over time (Figure 4.1). Imports increased from 7.3 to 11.6 billion pounds (live weight) between 1989 and 2006, and exports increased from 2.9 to 7.7 billion pounds.

What are our major products, which we import and export? We assess this based on a grouping of products resulting in 30 different products or groupings of products. This was necessary because of the large number of commodities the U.S. imports and exports. Between 1989 and 2006, the United States engaged in trade for 563 different products or product forms (e.g., fresh Atka mackerel, frozen Atka mackerel, tuna in oil, and tuna not in oil). During the 1989 to 2006 period, the United States engaged in trade involving 263.0 billion pounds (live weight) of product with a value of \$248.3 billion. Ignoring our groupings for the moment, the top 10 unique products for which there has been trade (either imports or exports) include peeled frozen shrimp, other preparations of frozen shrimp, frozen rock lobster, frozen sockeye salmon, frozen shell-on shrimp (31-40 count), frozen fillets of marine fish (no specific product form), frozen snow crab, frozen shell-on shrimp (< 15 count), fresh farmed Atlantic salmon, and frozen shell-on shrimp (15-20 count). Tuna not in oil ranked 11<sup>th</sup> in total trade (imports and exports).

We use the following groupings: (1) catfish, (2) clams, (3) crabs, (4) crustaceans, (5) no specific product form of fish, (6) flatfish, (7) groundfish, (8) grouper, (9) herring and sardines, (10) lobster, (11) mollusks, (12) mussels, (13) all other, (14) oysters, (15) sablefish, (16) salmon, (17) scallops, (18) shark (excludes dogfish), (19) other shellfish, (20) shrimp, (21) snapper, (22) squid, (23) sticks, (24) swordfish, (25) tilapia, (26) toothfish, (27) tuna, (28) bass, (29) fresh dogfish, and (30) frozen dogfish. The groupings were established using several factors, which included market substitutability, popularity of product, concerns raised by the public about particular products, whether or not a particular product was likely to be farm raised, and management/regulatory concerns. No rigorous quantitative analysis, however, was conducted to determine the existence of separability, which is a necessary condition for aggregation.

Figure 4.1. Trends in Imports and Exports of Seafood and Related Products



In terms of the dollar value of total trade (imports plus exports) in 2006, the major product category was shrimp, which was then followed by salmon and groundfish (Table 4.1). The all other category was included as a “catch-all” category and includes a large number of products; in actuality, the all other group includes 115 different products (e.g., anchovy, thickeners derived from seaweed, snails, and smelts). The top 10 products, in terms of the total dollar value traded, were shrimp, salmon, groundfish, all other, lobster, crabs, no specific product form of fish, tuna, tilapia, and flatfish accounted for 87.8 % of the total dollar value of all seafood and related products traded (imported and/or exported) in 2006. The all other category, however, did have the highest level of trade in terms of volume of product traded in 2006, with a total quantity of 3.5 billion pounds. In volume terms, the top five products, in terms of live weight traded, were surimi, frozen mackerel, frozen dolphin fillets, fish meal for human consumption, and menhaden oil.

The trade patterns for the various commodities, however, have changed over time. Shrimp was the number one product in terms of total dollar value traded between 1989 and 2006, and it appears it will continue as number one into the future (Table 4.2). When we consider the number two product traded, it changes between salmon, all other products, and groundfish. The product with the third highest value traded also varied between 1989 and 2006; the products ranking third in value terms of total traded value were groundfish, other fish, all other products, salmon, and lobster. Tuna, a traditional major U.S. consumer product, ranked between fifth and eighth in terms of total dollar

value traded. A more recent consumer species, tilapia, ranked either ninth or tenth in terms of the total traded value.

Table 4.1. Total Trade (Imports plus Exports) in Seafood and Related Products, 2006

Product Group	LIVE WEIGHT (LBS)	Constant Dollar Value
Shrimp	2,630,000,000	4,193,460,000
Salmon	1,380,000,000	2,187,190,000
Groundfish	2,400,000,000	1,658,280,000
All Other	3,530,000,000	1,478,860,000
Lobster	209,000,000	1,427,220,000
Crabs	944,000,000	1,341,790,000
Fish NSPF	1,580,000,000	1,252,080,000
Tuna	1,200,000,000	966,000,000
Tilapia	920,000,000	492,229,000
Flatfish	510,000,000	418,207,000
Scallops	92,955,330	401,358,000
Squid	288,000,000	283,127,000
Herring and Sardines	469,000,000	212,734,000
Other Shellfish	2,200,000,000	173,227,000
Sticks	315,000,000	162,506,000
Toothfish	45,485,019	154,334,000
Catfish	206,000,000	114,039,000
Clams	28,822,204	97,260,700
Molluscs	84,636,486	96,773,000
Sablefish	27,152,543	80,922,400
Swordfish	44,319,802	75,618,000
Snapper	41,795,102	73,301,800
Oysters	41,349,881	68,012,900
Mussels	26,333,846	65,004,200
Crustaceans	25,479,960	33,547,700
Grouper	12,021,436	26,473,400
Bass	2,837,028	6,617,800
Shark (No Dogfish)	5,884,443	6,267,580
Frozen Dogfish	3,410,870	3,495,030
Fresh Dogfish	4,523,484	2,795,770
Total	19,300,000,000	17,552,700,000

Table 4.2. Top Ten U.S. Seafood and Related Products, in Terms of Total Trade, 1989-2006

YEAR	Product Group	LIVE WEIGHT (LBS)	Constant Dollar Value	Rank (Value)
1989	Shrimp	937,000,000	2,620,000,000	1
	Salmon	620,000,000	1,730,000,000	2
	Groundfish	1,950,000,000	1,270,000,000	3
	Fish NSPF	1,400,000,000	1,200,000,000	4
	Tuna	1,220,000,000	1,060,000,000	5
	All Other	645,000,000	894,000,000	6
	Lobster	90,735,920	761,000,000	7
	Crabs	263,000,000	484,000,000	8
	Flatfish	340,000,000	406,000,000	9
	Herring and Sardines	306,000,000	241,000,000	10
	Total	7,770,000,000	10,700,000,000	55
1990	Shrimp	981,000,000	2,520,000,000	1
	Salmon	601,000,000	1,620,000,000	2
	Fish NSPF	2,250,000,000	1,490,000,000	3
	Groundfish	2,010,000,000	1,340,000,000	4
	Tuna	1,050,000,000	890,000,000	5
	All Other	725,000,000	873,000,000	6
	Lobster	96,895,414	739,000,000	7
	Crabs	312,000,000	636,000,000	8
	Flatfish	346,000,000	385,000,000	9
	Herring and Sardines	619,000,000	265,000,000	10
	Total	8,990,000,000	10,800,000,000	55
1991	Shrimp	1,050,000,000	2,690,000,000	1
	Groundfish	2,850,000,000	2,140,000,000	2
	Salmon	558,000,000	1,240,000,000	3
	Fish NSPF	1,480,000,000	1,160,000,000	4
	All Other	829,000,000	958,000,000	5
	Tuna	1,240,000,000	950,000,000	6
	Lobster	114,000,000	766,000,000	7
	Crabs	465,000,000	719,000,000	8
	Flatfish	448,000,000	437,000,000	9
	Herring and Sardines	505,000,000	256,000,000	10
	Total	9,540,000,000	11,300,000,000	55



Table 4.2. Continued

YEAR	Product Group	LIVE WEIGHT (LBS)	Constant Dollar Value	Rank (Value)
1992	Shrimp	1,140,000,000	2,840,000,000	1
	Salmon	629,000,000	1,590,000,000	2
	All Other	2,140,000,000	1,400,000,000	3
	Groundfish	1,780,000,000	1,400,000,000	4
	Fish NSPF	1,380,000,000	1,150,000,000	5
	Tuna	1,080,000,000	835,000,000	6
	Lobster	105,000,000	781,000,000	7
	Crabs	518,000,000	758,000,000	8
	Flatfish	384,000,000	353,000,000	9
	Herring and Sardines	540,000,000	257,000,000	10
	Total	9,710,000,000	11,400,000,000	55
1993	Shrimp	1,170,000,000	2,990,000,000	1
	Salmon	694,000,000	1,490,000,000	2
	All Other	2,700,000,000	1,230,000,000	3
	Fish NSPF	1,350,000,000	1,120,000,000	4
	Groundfish	1,560,000,000	1,060,000,000	5
	Crabs	469,000,000	744,000,000	6
	Tuna	903,000,000	742,000,000	7
	Lobster	97,887,717	661,000,000	8
	Flatfish	429,000,000	388,000,000	9
	Scallops	54,684,768	301,000,000	10
	Total	9,420,000,000	10,700,000,000	55
1994	Shrimp	1,240,000,000	3,570,000,000	1
	Salmon	652,000,000	1,380,000,000	2
	All Other	2,690,000,000	1,330,000,000	3
	Fish NSPF	1,390,000,000	1,130,000,000	4
	Groundfish	1,550,000,000	1,020,000,000	5
	Tuna	968,000,000	867,000,000	6
	Lobster	119,000,000	813,000,000	7
	Crabs	385,000,000	713,000,000	8
	Flatfish	452,000,000	424,000,000	9
	Scallops	60,330,449	295,000,000	10
	Total	9,490,000,000	11,500,000,000	55

Table 4.2. Continued

YEAR	Product Group	LIVE WEIGHT (LBS)	Constant Dollar Value	Rank (Value)
1995	Shrimp	1,180,000,000	3,400,000,000	1
	All Other	2,790,000,000	1,550,000,000	2
	Salmon	768,000,000	1,520,000,000	3
	Groundfish	1,660,000,000	1,130,000,000	4
	Fish NSPF	1,230,000,000	1,030,000,000	5
	Lobster	126,000,000	904,000,000	6
	Tuna	970,000,000	824,000,000	7
	Crabs	302,000,000	556,000,000	8
	Flatfish	474,000,000	435,000,000	9
	Herring and Sardines	405,000,000	260,000,000	10
	Total	9,910,000,000	11,600,000,000	55
1996	Shrimp	1,170,000,000	3,160,000,000	1
	All Other	2,770,000,000	1,450,000,000	2
	Salmon	752,000,000	1,390,000,000	3
	Groundfish	1,820,000,000	1,130,000,000	4
	Fish NSPF	1,290,000,000	975,000,000	5
	Lobster	130,000,000	860,000,000	6
	Tuna	959,000,000	833,000,000	7
	Crabs	318,000,000	503,000,000	8
	Flatfish	432,000,000	375,000,000	9
	Scallops	62,268,880	262,000,000	10
	Total	9,700,000,000	10,900,000,000	55
1997	Shrimp	1,300,000,000	3,710,000,000	1
	All Other	2,950,000,000	1,500,000,000	2
	Salmon	696,000,000	1,240,000,000	3
	Groundfish	1,770,000,000	1,130,000,000	4
	Fish NSPF	1,200,000,000	923,000,000	5
	Lobster	142,000,000	918,000,000	6
	Tuna	895,000,000	830,000,000	7
	Crabs	395,000,000	571,000,000	8
	Flatfish	529,000,000	395,000,000	9
	Scallops	67,284,362	323,000,000	10
	Total	9,950,000,000	11,500,000,000	55

Table 4.2. Continued

YEAR	Product Group	LIVE WEIGHT (LBS)	Constant Dollar Value	Rank (Value)	
1998	Shrimp	1,410,000,000	3,850,000,000	1	
	All Other	2,490,000,000	1,300,000,000	2	
	Salmon	720,000,000	1,270,000,000	3	
	Groundfish	1,800,000,000	1,100,000,000	4	
	Tuna	1,070,000,000	925,000,000	5	
	Fish NSPF	1,180,000,000	889,000,000	6	
	Lobster	135,000,000	879,000,000	7	
	Crabs	489,000,000	628,000,000	8	
	Flatfish	449,000,000	351,000,000	9	
	Scallops	58,617,688	287,000,000	10	
	Total	9,810,000,000	11,500,000,000	55	
	1999	Shrimp	1,510,000,000	3,830,000,000	1
		Salmon	889,000,000	1,620,000,000	2
All Other		2,910,000,000	1,390,000,000	3	
Groundfish		1,890,000,000	1,290,000,000	4	
Lobster		173,000,000	1,150,000,000	5	
Fish NSPF		1,300,000,000	972,000,000	6	
Tuna		1,190,000,000	934,000,000	7	
Crabs		592,000,000	876,000,000	8	
Flatfish		387,000,000	385,000,000	9	
Scallops		50,222,918	253,000,000	10	
Total		10,900,000,000	12,700,000,000	55	
2000		Shrimp	1,600,000,000	4,490,000,000	1
		Salmon	932,000,000	1,660,000,000	2
	Lobster	201,000,000	1,360,000,000	3	
	All Other	2,950,000,000	1,340,000,000	4	
	Groundfish	1,900,000,000	1,250,000,000	5	
	Fish NSPF	1,240,000,000	996,000,000	6	
	Crabs	593,000,000	986,000,000	7	
	Tuna	1,060,000,000	770,000,000	8	
	Flatfish	442,000,000	411,000,000	9	
	Scallops	61,638,573	284,000,000	10	
	Total	11,000,000,000	13,600,000,000	55	

Table 4.2. Continued

YEAR	Product Group	LIVE WEIGHT (LBS)	Constant Dollar Value	Rank (Value)	
2001	Shrimp	1,820,000,000	4,230,000,000	1	
	Salmon	1,090,000,000	1,590,000,000	2	
	Groundfish	2,020,000,000	1,480,000,000	3	
	All Other	3,580,000,000	1,340,000,000	4	
	Lobster	197,000,000	1,230,000,000	5	
	Crabs	725,000,000	1,120,000,000	6	
	Fish NSPF	1,550,000,000	1,010,000,000	7	
	Tuna	927,000,000	793,000,000	8	
	Flatfish	387,000,000	345,000,000	9	
	Herring and Sardines	592,000,000	223,000,000	10	
	Total	12,900,000,000	13,400,000,000	55	
	2002	Shrimp	2,000,000,000	3,930,000,000	1
		Salmon	1,150,000,000	1,540,000,000	2
Groundfish		2,160,000,000	1,480,000,000	3	
All Other		3,640,000,000	1,400,000,000	4	
Lobster		217,000,000	1,370,000,000	5	
Crabs		766,000,000	1,190,000,000	6	
Fish NSPF		1,430,000,000	991,000,000	7	
Tuna		1,060,000,000	819,000,000	8	
Flatfish		427,000,000	366,000,000	9	
Scallops		59,684,428	206,000,000	10	
Total		12,900,000,000	13,300,000,000	55	
2003		Shrimp	2,300,000,000	4,220,000,000	1
		Salmon	1,240,000,000	1,710,000,000	2
	Lobster	211,000,000	1,430,000,000	3	
	All Other	3,460,000,000	1,390,000,000	4	
	Groundfish	2,100,000,000	1,370,000,000	5	
	Crabs	772,000,000	1,270,000,000	6	
	Fish NSPF	1,460,000,000	1,030,000,000	7	
	Tuna	1,280,000,000	930,000,000	8	
	Flatfish	441,000,000	394,000,000	9	
	Tilapia	448,000,000	269,000,000	10	
	Total	13,700,000,000	14,000,000,000	55	

Table 4.2. Continued

YEAR	Product Group	LIVE WEIGHT (LBS)	Constant Dollar Value	Rank (Value)
2004	Shrimp	2,360,000,000	4,000,000,000	1
	Salmon	1,300,000,000	1,720,000,000	2
	Groundfish	2,570,000,000	1,560,000,000	3
	All Other	3,790,000,000	1,410,000,000	4
	Lobster	200,000,000	1,390,000,000	5
	Crabs	889,000,000	1,310,000,000	6
	Fish NSPF	1,600,000,000	1,120,000,000	7
	Tuna	1,230,000,000	942,000,000	8
	Flatfish	489,000,000	421,000,000	9
	Tilapia	581,000,000	320,000,000	10
	Total	15,000,000,000	14,200,000,000	55
	2005	Shrimp	2,310,000,000	3,830,000,000
Salmon		1,420,000,000	1,940,000,000	2
Groundfish		2,390,000,000	1,560,000,000	3
All Other		3,770,000,000	1,500,000,000	4
Lobster		205,000,000	1,440,000,000	5
Crabs		928,000,000	1,320,000,000	6
Fish NSPF		1,500,000,000	1,170,000,000	7
Tilapia		760,000,000	408,000,000	9
Flatfish		511,000,000	393,000,000	10
Tuna		1,240,000,000	971,000,000	8
Total		15,000,000,000	14,500,000,000	55
2006		Shrimp	2,630,000,000	4,190,000,000
	Salmon	1,380,000,000	2,190,000,000	2
	Groundfish	2,400,000,000	1,660,000,000	3
	All Other	3,530,000,000	1,480,000,000	4
	Lobster	209,000,000	1,430,000,000	5
	Crabs	944,000,000	1,340,000,000	6
	Fish NSPF	1,580,000,000	1,250,000,000	7
	Tuna	1,200,000,000	966,000,000	8
	Tilapia	920,000,000	492,000,000	9
	Flatfish	510,000,000	418,000,000	10
	Total	15,300,000,000	15,400,000,000	55

What is the major export commodity of the United States? Similar to the conclusions pertaining to products and total traded value, the rankings of the major export commodities have also changed over time. Between 1989 and 2006, 13 product categories ranked in the top ten in terms of value of product exported: (1) salmon, (2) all other, (3) groundfish, (4) no specific product form of fish, (5) crabs, (6) lobster, (7) flatfish, (8) shrimp, (9) herring and sardines, (10) other shellfish, (11) sablefish, (12) scallops, and (13) squid (Table 4.3). On an annual basis, however, the top 10 trading nations in terms of the value of products exported did change (Table 4.4). Salmon held the number one spot for top exported value between 1989 and 1990, 1992 and 1996, and 1999 to 2000.

Table 4.3. Top 10 U.S. Export Products between 1989 and 2006, (Value Terms)

Product Group	Annual Average	
	LIVE WEIGHT (LBS)	Constant Dollar Value
Salmon	459.4	838.9
All Other	2,144.4	711.1
Groundfish	605.6	525.6
Fish NSPF	566.7	372.8
Crabs	142.2	271.7
Lobster	45.4	240.6
Flatfish	221.1	156.7
Shrimp	50.6	110.0
Herring and Sardines	162.8	108.9
Other Shellfish	866.7	75.6
Sablefish	23.3	56.7
Scallops	3.3	16.1
Squid	9.6	6.2
Total	5,294.4	3,488.9

In 1991 and between 2001 and 2006, groundfish was the major commodity exported in terms of dollar value. Herring and sardines have ranked in the top 10 in all years except 1997 and 2000. Flatfish ranked between 6 and 9 in all years, but has consistently maintained the ranking of six in terms of value of exports since 2000. Scallops did not enter the top ten export commodities until 2005, in which scallops had the ninth highest export value. In 2006, scallops ranked seventh in terms of the value of exports.

Table 4.4. Top 10 Export Commodities between 1989 and 2006, Annual Basis

YEAR	Product Group	LIVE WEIGHT (LBS)	Constant Dollar Value	Rank of Constant Dollar Value	
1989	Salmon	492,000,000	1,350,000,000	1	
	All Other	399,000,000	451,000,000	2	
	Fish NSPF	479,000,000	404,000,000	3	
	Crabs	135,000,000	375,000,000	4	
	Herring and Sardines	134,000,000	127,000,000	5	
	Sablefish	58,703,946	123,000,000	6	
	Flatfish	79,824,733	117,000,000	7	
	Groundfish	153,000,000	114,000,000	8	
	Shrimp	54,077,382	107,000,000	9	
	Lobster	16,825,873	90,821,492	10	
	Total	2,000,000,000	3,260,000,000	55	
	1990	Salmon	467,000,000	1,220,000,000	1
		Fish NSPF	1,470,000,000	798,000,000	2
Crabs		182,000,000	517,000,000	3	
All Other		425,000,000	424,000,000	4	
Groundfish		334,000,000	241,000,000	5	
Shrimp		75,314,059	169,000,000	6	
Herring and Sardines		127,000,000	133,000,000	7	
Flatfish		111,000,000	125,000,000	8	
Lobster		18,431,160	106,000,000	9	
Sablefish		50,844,275	103,000,000	10	
Total		3,260,000,000	3,840,000,000	55	
1991		Groundfish	1,160,000,000	921,000,000	1
		Salmon	424,000,000	882,000,000	2
	Crabs	329,000,000	592,000,000	3	
	All Other	519,000,000	500,000,000	4	
	Fish NSPF	669,000,000	466,000,000	5	
	Flatfish	244,000,000	190,000,000	6	
	Shrimp	63,174,601	150,000,000	7	
	Sablefish	48,626,479	135,000,000	8	
	Herring and Sardines	135,000,000	133,000,000	9	
	Lobster	23,766,997	129,000,000	10	
	Total	3,620,000,000	4,100,000,000	55	

Table 4.4. Continued

YEAR	Product Group	LIVE WEIGHT (LBS)	Constant Dollar Value	Rank of Constant Dollar Value	
1992	Salmon	498,000,000	1,250,000,000	1	
	All Other	1,810,000,000	960,000,000	2	
	Crabs	361,000,000	601,000,000	3	
	Groundfish	359,000,000	477,000,000	4	
	Fish NSPF	605,000,000	438,000,000	5	
	Herring and Sardines	155,000,000	145,000,000	6	
	Shrimp	59,954,103	143,000,000	7	
	Lobster	22,425,660	134,000,000	8	
	Flatfish	188,000,000	129,000,000	9	
	Sablefish	40,209,824	107,000,000	10	
	Total	4,100,000,000	4,380,000,000	55	
	1993	Salmon	551,000,000	1,140,000,000	1
		All Other	2,350,000,000	802,000,000	2
Crabs		283,000,000	548,000,000	3	
Fish NSPF		477,000,000	371,000,000	4	
Groundfish		199,000,000	260,000,000	5	
Shrimp		66,625,002	148,000,000	6	
Flatfish		219,000,000	146,000,000	7	
Herring and Sardines		145,000,000	122,000,000	8	
Sablefish		53,777,938	120,000,000	9	
Lobster		20,384,789	116,000,000	10	
Total		4,370,000,000	3,770,000,000	55	
1994		Salmon	502,000,000	1,020,000,000	1
		All Other	2,310,000,000	866,000,000	2
	Crabs	193,000,000	447,000,000	3	
	Fish NSPF	458,000,000	331,000,000	4	
	Groundfish	244,000,000	275,000,000	5	
	Flatfish	274,000,000	204,000,000	6	
	Lobster	32,396,555	176,000,000	7	
	Shrimp	67,900,784	144,000,000	8	
	Herring and Sardines	137,000,000	122,000,000	9	
	Sablefish	43,336,535	115,000,000	10	
	Total	4,260,000,000	3,700,000,000	55	



Table 4.4. Continued

YEAR	Product Group	LIVE WEIGHT (LBS)	Constant Dollar Value	Rank of Constant Dollar Value	
1995	Salmon	568,000,000	1,070,000,000	1	
	All Other	2,270,000,000	931,000,000	2	
	Groundfish	273,000,000	371,000,000	3	
	Fish NSPF	393,000,000	310,000,000	4	
	Crabs	95,442,847	262,000,000	5	
	Lobster	36,736,790	215,000,000	6	
	Flatfish	277,000,000	206,000,000	7	
	Herring and Sardines	173,000,000	160,000,000	8	
	Shrimp	63,124,846	153,000,000	9	
	Sablefish	44,452,069	127,000,000	10	
	Total	4,200,000,000	3,800,000,000	55	
	1996	Salmon	501,000,000	884,000,000	1
		All Other	2,150,000,000	805,000,000	2
Groundfish		374,000,000	389,000,000	3	
Fish NSPF		492,000,000	324,000,000	4	
Lobster		41,818,952	237,000,000	5	
Crabs		99,445,093	208,000,000	6	
Flatfish		251,000,000	177,000,000	7	
Herring and Sardines		169,000,000	160,000,000	8	
Other Shellfish		1,080,000,000	138,000,000	9	
Shrimp		59,964,810	129,000,000	10	
Total		5,220,000,000	3,450,000,000	55	
1997		All Other	2,270,000,000	811,000,000	1
		Salmon	364,000,000	608,000,000	2
	Groundfish	319,000,000	356,000,000	3	
	Fish NSPF	502,000,000	321,000,000	4	
	Lobster	47,572,785	249,000,000	5	
	Flatfish	333,000,000	184,000,000	6	
	Crabs	98,050,967	141,000,000	7	
	Shrimp	54,572,553	121,000,000	8	
	Other Shellfish	1,250,000,000	112,000,000	9	
	Squid	173,000,000	111,000,000	10	
	Total	5,410,000,000	3,010,000,000	55	

Table 4.4. Continued

YEAR	Product Group	LIVE WEIGHT (LBS)	Constant Dollar Value	Rank of Constant Dollar Value	
1998	All Other	1,920,000,000	661,000,000	1	
	Salmon	312,000,000	531,000,000	2	
	Fish NSPF	431,000,000	294,000,000	3	
	Groundfish	390,000,000	279,000,000	4	
	Lobster	43,857,619	223,000,000	5	
	Crabs	109,000,000	137,000,000	6	
	Flatfish	230,000,000	127,000,000	7	
	Other Shellfish	1,230,000,000	116,000,000	8	
	Shrimp	52,534,234	113,000,000	9	
	Herring and Sardines	128,000,000	85,836,085	10	
	Total	4,850,000,000	2,570,000,000	55	
	1999	Salmon	439,000,000	756,000,000	1
		All Other	2,110,000,000	701,000,000	2
Groundfish		390,000,000	346,000,000	3	
Fish NSPF		515,000,000	335,000,000	4	
Lobster		57,820,449	304,000,000	5	
Crabs		131,000,000	181,000,000	6	
Flatfish		170,000,000	149,000,000	7	
Herring and Sardines		165,000,000	125,000,000	8	
Shrimp		52,574,403	113,000,000	9	
Other Shellfish		1,130,000,000	104,000,000	10	
Total		5,160,000,000	3,110,000,000	55	
2000		Salmon	402,000,000	687,000,000	1
		All Other	2,360,000,000	670,000,000	2
	Groundfish	460,000,000	438,000,000	3	
	Lobster	67,305,544	337,000,000	4	
	Fish NSPF	416,000,000	292,000,000	5	
	Flatfish	206,000,000	151,000,000	6	
	Crabs	87,541,250	145,000,000	7	
	Shrimp	58,861,929	134,000,000	8	
	Other Shellfish	1,170,000,000	124,000,000	9	
	Sablefish	43,311,512	99,304,191	10	
	Total	5,270,000,000	3,080,000,000	55	

Table 4.4. Continued

YEAR	Product Group	LIVE WEIGHT (LBS)	Constant Dollar Value	Rank of Constant Dollar Value	
2001	Groundfish	884,000,000	827,000,000	1	
	All Other	2,920,000,000	675,000,000	2	
	Salmon	433,000,000	620,000,000	3	
	Fish NSPF	652,000,000	332,000,000	4	
	Lobster	63,151,595	295,000,000	5	
	Flatfish	192,000,000	132,000,000	6	
	Other Shellfish	1,410,000,000	128,000,000	7	
	Shrimp	55,459,735	121,000,000	8	
	Crabs	78,279,684	114,000,000	9	
	Herring and Sardines	228,000,000	106,000,000	10	
	Total	6,920,000,000	3,350,000,000	55	
	2002	Groundfish	906,000,000	758,000,000	1
		All Other	2,960,000,000	737,000,000	2
Salmon		371,000,000	521,000,000	3	
Lobster		70,109,893	335,000,000	4	
Fish NSPF		454,000,000	274,000,000	5	
Flatfish		209,000,000	139,000,000	6	
Other Shellfish		1,470,000,000	130,000,000	7	
Shrimp		59,540,291	119,000,000	8	
Crabs		81,117,656	115,000,000	9	
Herring and Sardines		233,000,000	92,672,497	10	
Total		6,820,000,000	3,220,000,000	55	
2003		Groundfish	902,000,000	715,000,000	1
		All Other	2,740,000,000	690,000,000	2
	Salmon	417,000,000	557,000,000	3	
	Lobster	66,085,221	344,000,000	4	
	Fish NSPF	454,000,000	296,000,000	5	
	Flatfish	213,000,000	140,000,000	6	
	Crabs	65,671,743	126,000,000	7	
	Other Shellfish	1,450,000,000	123,000,000	8	
	Shrimp	65,864,409	118,000,000	9	
	Herring and Sardines	212,000,000	96,104,643	10	
	Total	6,590,000,000	3,210,000,000	55	

Table 4.4. Continued

YEAR	Product Group	LIVE WEIGHT (LBS)	Constant Dollar Value	Rank of Constant Dollar Value
2004	Groundfish	1,290,000,000	890,000,000	1
	All Other	3,050,000,000	657,000,000	2
	Salmon	482,000,000	616,000,000	3
	Fish NSPF	628,000,000	368,000,000	4
	Lobster	62,362,420	336,000,000	5
	Flatfish	231,000,000	160,000,000	6
	Other Shellfish	1,830,000,000	141,000,000	7
	Crabs	83,007,644	123,000,000	8
	Herring and Sardines	246,000,000	116,000,000	9
	Sablefish	37,219,618	93,005,247	10
	Total	7,950,000,000	3,500,000,000	55
2005	Groundfish	1,080,000,000	858,000,000	1
	All Other	3,130,000,000	764,000,000	2
	Salmon	554,000,000	711,000,000	3
	Fish NSPF	510,000,000	370,000,000	4
	Lobster	63,131,333	355,000,000	5
	Flatfish	256,000,000	155,000,000	6
	Other Shellfish	2,090,000,000	139,000,000	7
	Herring and Sardines	278,000,000	137,000,000	8
	Scallops	28,232,167	132,000,000	9
	Crabs	72,816,276	122,000,000	10
	Total	8,060,000,000	3,740,000,000	55
2006	Groundfish	1,180,000,000	946,000,000	1
	All Other	2,850,000,000	720,000,000	2
	Salmon	493,000,000	628,000,000	3
	Fish NSPF	548,000,000	387,000,000	4
	Lobster	62,743,148	347,000,000	5
	Flatfish	293,000,000	192,000,000	6
	Scallops	31,482,904	158,000,000	7
	Crabs	78,297,961	138,000,000	8
	Other Shellfish	1,450,000,000	110,000,000	9
	Herring and Sardines	263,000,000	95,439,066	10
	Total	7,250,000,000	3,720,000,000	55

Jumping over to the import side yields a vastly different story than that depicted by exports. The top 15 import commodities, in terms of dollar value of imports were edible and typically highly desired consumer products (Table 4.5). These 15 commodities accounted for 91.2 % of the total dollar value of all imported seafood and related products between 1989 and 2006. Shrimp has been, and still is, the major imported commodity. Groundfish typically ranked second in terms of the value of products imported. Over the entire period, tuna ranked third in value terms; lobster ranked fourth; and salmon ranked fifth. At the bottom of the list of all 30 products imported was frozen dogfish.

Table 4.5. Top 15 Imported Products (Based on Total Value between 1989-2006)

Product Group	Mean Annual Value	
	LIVE WEIGHT (LBS)	Constant Dollar Value--\$Millions
Shrimp	1,505.6	3,438.9
Groundfish	1,405.6	827.8
Tuna	1,050.0	827.8
Lobster	108.3	805.6
Salmon	433.9	744.4
Fish NSPF	872.2	716.7
All Other	544.4	605.6
Crabs	405.6	588.9
Flatfish	204.4	223.9
Scallops	37.8	178.3
Tilapia	164.4	92.2
Herring and Sardines	27.3	7.3
Other Shellfish	68.9	7.2
Total	6,833.3	9,055.6

Examination of the import commodities having the highest dollar values between 1989 and 2006 reveals a story of change (Table 4.6). Shrimp has consistently been the product with the highest dollar value in every year between 1989 and 2006. Five species, however, held the number two spot between 1989 and 2006—groundfish, tuna, lobster, crabs, and salmon. Up to six different products ranked 10<sup>th</sup> between 1989 and 2006; these included other shellfish, herring and sardines, crabs, flatfish, scallops, and tilapia.

Table 4.6. Top 15 Imported Products (Based on Dollar Value) Per Year, 1989-2006

YEAR	Product Group	LIVE WEIGHT (LBS)	Constant Dollar Value	Rank
1989	Shrimp	883,000,000	2,520,000,000	1
	Groundfish	1,800,000,000	1,160,000,000	2
	Tuna	1,190,000,000	998,000,000	3
	Fish NSPF	920,000,000	800,000,000	4
	Lobster	73,910,047	670,000,000	5
	All Other	246,000,000	443,000,000	6
	Salmon	128,000,000	379,000,000	7
	Flatfish	260,000,000	289,000,000	8
	Scallops	40,877,080	205,000,000	9
	Other Shellfish	1,240,000,000	130,000,000	10
	Total	6,780,000,000	7,580,000,000	55
1990	Shrimp	905,000,000	2,350,000,000	1
	Groundfish	1,670,000,000	1,100,000,000	2
	Tuna	1,010,000,000	811,000,000	3
	Fish NSPF	779,000,000	691,000,000	4
	Lobster	78,464,255	633,000,000	5
	All Other	301,000,000	450,000,000	6
	Salmon	134,000,000	394,000,000	7
	Flatfish	236,000,000	260,000,000	8
	Scallops	39,924,691	186,000,000	9
	Herring and Sardines	491,000,000	132,000,000	10
	Total	5,650,000,000	7,010,000,000	55
1991	Shrimp	987,000,000	2,540,000,000	1
	Groundfish	1,690,000,000	1,220,000,000	2
	Tuna	1,200,000,000	880,000,000	3
	Fish NSPF	814,000,000	696,000,000	4
	Lobster	89,772,736	637,000,000	5
	All Other	310,000,000	458,000,000	6
	Salmon	134,000,000	359,000,000	7
	Flatfish	204,000,000	247,000,000	8
	Scallops	29,603,515	152,000,000	9
	Crabs	136,000,000	128,000,000	10
	Total	5,600,000,000	7,320,000,000	55

Table 4.6. Continued

YEAR	Product Group	LIVE WEIGHT (LBS)	Constant Dollar Value	Rank
1992	Shrimp	1,080,000,000	2,700,000,000	1
	Groundfish	1,420,000,000	920,000,000	2
	Tuna	1,050,000,000	776,000,000	3
	Fish NSPF	777,000,000	708,000,000	4
	Lobster	82,356,750	647,000,000	5
	All Other	331,000,000	440,000,000	6
	Salmon	130,000,000	340,000,000	7
	Flatfish	196,000,000	225,000,000	8
	Scallops	38,783,576	214,000,000	9
	Crabs	158,000,000	158,000,000	10
	Total	5,260,000,000	7,130,000,000	55
1993	Shrimp	1,100,000,000	2,840,000,000	1
	Groundfish	1,360,000,000	796,000,000	2
	Fish NSPF	872,000,000	749,000,000	3
	Tuna	873,000,000	693,000,000	4
	Lobster	77,502,928	545,000,000	5
	All Other	346,000,000	427,000,000	6
	Salmon	144,000,000	349,000,000	7
	Scallops	52,017,257	287,000,000	8
	Flatfish	210,000,000	243,000,000	9
	Crabs	186,000,000	197,000,000	10
	Total	5,220,000,000	7,120,000,000	55
1994	Shrimp	1,170,000,000	3,420,000,000	1
	Tuna	928,000,000	801,000,000	2
	Fish NSPF	930,000,000	797,000,000	3
	Groundfish	1,310,000,000	748,000,000	4
	Lobster	86,366,182	637,000,000	5
	All Other	376,000,000	462,000,000	6
	Salmon	150,000,000	357,000,000	7
	Scallops	56,767,989	278,000,000	8
	Crabs	191,000,000	266,000,000	9
	Flatfish	178,000,000	220,000,000	10
	Total	5,370,000,000	7,990,000,000	55

Table 4.6. Continued

YEAR	Product Group	LIVE WEIGHT (LBS)	Constant Dollar Value	Rank
1995	Shrimp	1,110,000,000	3,240,000,000	1
	Groundfish	1,390,000,000	763,000,000	2
	Tuna	929,000,000	763,000,000	3
	Fish NSPF	841,000,000	723,000,000	4
	Lobster	89,448,650	689,000,000	5
	All Other	521,000,000	622,000,000	6
	Salmon	200,000,000	452,000,000	7
	Crabs	206,000,000	294,000,000	8
	Flatfish	196,000,000	229,000,000	9
	Scallops	48,436,229	220,000,000	10
	Total	5,540,000,000	8,000,000,000	55
1996	Shrimp	1,110,000,000	3,030,000,000	1
	Tuna	912,000,000	774,000,000	2
	Groundfish	1,440,000,000	736,000,000	3
	Fish NSPF	798,000,000	651,000,000	4
	All Other	617,000,000	649,000,000	5
	Lobster	87,783,040	623,000,000	6
	Salmon	251,000,000	508,000,000	7
	Crabs	219,000,000	295,000,000	8
	Scallops	58,811,272	245,000,000	9
	Flatfish	181,000,000	197,000,000	10
	Total	5,680,000,000	7,710,000,000	55
1997	Shrimp	1,240,000,000	3,590,000,000	1
	Groundfish	1,450,000,000	773,000,000	2
	Tuna	853,000,000	773,000,000	3
	All Other	680,000,000	684,000,000	4
	Lobster	94,097,737	669,000,000	5
	Salmon	332,000,000	634,000,000	6
	Fish NSPF	703,000,000	601,000,000	7
	Crabs	297,000,000	430,000,000	8
	Scallops	60,283,759	289,000,000	9
	Flatfish	196,000,000	212,000,000	10
	Total	5,910,000,000	8,650,000,000	55



Table 4.6. Continued

YEAR	Product Group	LIVE WEIGHT (LBS)	Constant Dollar Value	Rank
1998	Shrimp	1,360,000,000	3,740,000,000	1
	Tuna	1,020,000,000	863,000,000	2
	Groundfish	1,410,000,000	825,000,000	3
	Salmon	408,000,000	739,000,000	4
	Lobster	91,525,353	655,000,000	5
	All Other	575,000,000	644,000,000	6
	Fish NSPF	754,000,000	595,000,000	7
	Crabs	380,000,000	491,000,000	8
	Scallops	53,527,713	266,000,000	9
	Flatfish	219,000,000	224,000,000	10
	Total	6,270,000,000	9,040,000,000	55
1999	Shrimp	1,460,000,000	3,720,000,000	1
	Groundfish	1,500,000,000	942,000,000	2
	Tuna	1,160,000,000	892,000,000	3
	Salmon	449,000,000	860,000,000	4
	Lobster	116,000,000	850,000,000	5
	Crabs	461,000,000	696,000,000	6
	All Other	797,000,000	693,000,000	7
	Fish NSPF	780,000,000	637,000,000	8
	Flatfish	217,000,000	236,000,000	9
	Scallops	44,805,197	230,000,000	10
	Total	6,980,000,000	9,760,000,000	55
2000	Shrimp	1,540,000,000	4,360,000,000	1
	Lobster	134,000,000	1,020,000,000	2
	Salmon	530,000,000	970,000,000	3
	Crabs	506,000,000	841,000,000	4
	Groundfish	1,440,000,000	815,000,000	5
	Tuna	1,040,000,000	736,000,000	6
	Fish NSPF	827,000,000	704,000,000	7
	All Other	595,000,000	675,000,000	8
	Flatfish	235,000,000	259,000,000	9
	Scallops	54,262,994	249,000,000	10
	Total	6,900,000,000	10,600,000,000	55

Table 4.6. Continued

YEAR	Product Group	LIVE WEIGHT (LBS)	Constant Dollar Value	Rank	
2001	Shrimp	1,770,000,000	4,110,000,000	1	
	Crabs	647,000,000	1,010,000,000	2	
	Salmon	653,000,000	968,000,000	3	
	Lobster	133,000,000	936,000,000	4	
	Tuna	894,000,000	752,000,000	5	
	Fish NSPF	898,000,000	680,000,000	6	
	All Other	658,000,000	669,000,000	7	
	Groundfish	1,140,000,000	652,000,000	8	
	Flatfish	196,000,000	213,000,000	9	
	Scallops	40,177,705	147,000,000	10	
	Total	7,030,000,000	10,100,000,000	55	
	2002	Shrimp	1,940,000,000	3,810,000,000	1
		Crabs	685,000,000	1,070,000,000	2
Lobster		147,000,000	1,030,000,000	3	
Salmon		777,000,000	1,020,000,000	4	
Tuna		1,030,000,000	783,000,000	5	
Groundfish		1,250,000,000	719,000,000	6	
Fish NSPF		974,000,000	718,000,000	7	
All Other		682,000,000	668,000,000	8	
Flatfish		218,000,000	227,000,000	9	
Tilapia		301,000,000	194,000,000	10	
Total		8,000,000,000	10,200,000,000	55	
2003		Shrimp	2,230,000,000	4,100,000,000	1
		Salmon	825,000,000	1,160,000,000	2
	Crabs	706,000,000	1,140,000,000	3	
	Lobster	145,000,000	1,080,000,000	4	
	Tuna	1,230,000,000	875,000,000	5	
	Fish NSPF	1,010,000,000	734,000,000	6	
	All Other	715,000,000	702,000,000	7	
	Groundfish	1,200,000,000	654,000,000	8	
	Tilapia	436,000,000	263,000,000	9	
	Flatfish	228,000,000	254,000,000	10	
	Total	8,730,000,000	11,000,000,000	55	

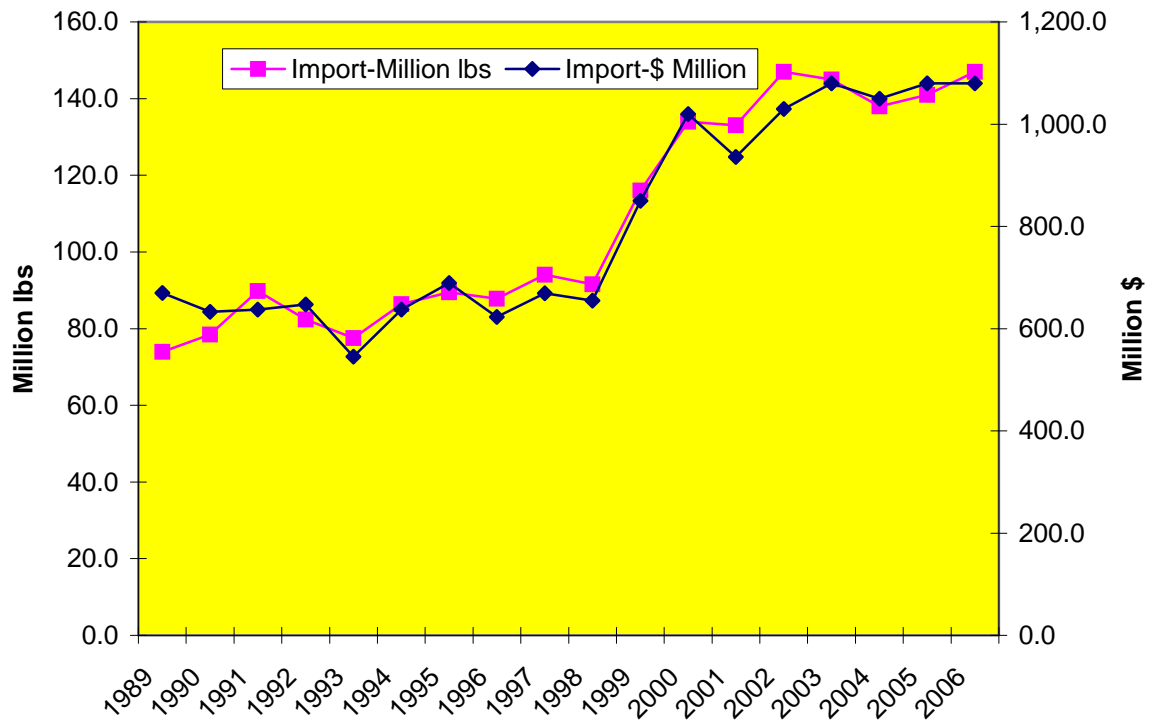
Table 4.6. Continued

YEAR	Product Group	LIVE WEIGHT (LBS)	Constant Dollar Value	Rank
2004	Shrimp	2,300,000,000	3,910,000,000	1
	Crabs	806,000,000	1,190,000,000	2
	Salmon	818,000,000	1,110,000,000	3
	Lobster	138,000,000	1,050,000,000	4
	Tuna	1,190,000,000	894,000,000	5
	All Other	734,000,000	758,000,000	6
	Fish NSPF	973,000,000	749,000,000	7
	Groundfish	1,270,000,000	668,000,000	8
	Tilapia	568,000,000	315,000,000	9
	Flatfish	258,000,000	261,000,000	10
	Total	9,060,000,000	10,900,000,000	55
2005	Shrimp	2,260,000,000	3,760,000,000	1
	Salmon	865,000,000	1,230,000,000	2
	Crabs	855,000,000	1,190,000,000	3
	Lobster	141,000,000	1,080,000,000	4
	Tuna	1,210,000,000	936,000,000	5
	Fish NSPF	990,000,000	802,000,000	6
	All Other	637,000,000	732,000,000	7
	Groundfish	1,310,000,000	699,000,000	8
	Tilapia	745,000,000	402,000,000	9
	Flatfish	255,000,000	238,000,000	10
	Total	9,270,000,000	11,100,000,000	55
2006	Shrimp	2,600,000,000	4,130,000,000	1
	Salmon	885,000,000	1,560,000,000	2
	Crabs	866,000,000	1,200,000,000	3
	Lobster	147,000,000	1,080,000,000	4
	Tuna	1,170,000,000	931,000,000	5
	Fish NSPF	1,030,000,000	865,000,000	6
	All Other	680,000,000	759,000,000	7
	Groundfish	1,220,000,000	712,000,000	8
	Tilapia	906,000,000	482,000,000	9
	Scallops	61,472,426	243,000,000	10
	Total	9,560,000,000	12,000,000,000	55

We also consider the trend in five major import commodities between 1989 and 2006. These products were selected based on consumer popularity; increasing trends; likelihood of some species being farm raised; and significant changes over time. We further examine trends in the imports of shrimp, tuna, lobster, salmon, and tilapia; the latter species, which is farm raised, has substantially increased its presence in the American Seafood market since 1992.

Shrimp has consistently been the major import commodity, but between 1989 and 1998, imports of shrimp were relatively flat. It was not until 1999 that the imports of shrimp began to increase (Figure 4.2). Between 1998 and 2006, imports increased from 91.5 to 147.0 million pounds, and the dollar value increased from \$0.7 to \$1.1 billion. During the period 1989 through 2006, the real price (price adjusted for inflation) actually decreased—from \$2.85 to \$1.59 per pound. The United States imports shrimp from up to 132 nations. Twenty-two nations accounted for approximately 95 % of both the quantity and value of imported shrimp between 1989 and 2006. Six nations—Thailand, Ecuador, Mexico, Vietnam, China, and India-- from which we import shrimp accounted for, on average, 70.8 and 72.1 % of the total quantity and dollar value of shrimp imports between 1989 and 2006. Thailand, alone, accounted for nearly 30.0 % of both the average annual quantity and value of shrimp imported to the United States between 1989 and 2006. Moreover, the price of shrimp imports from all nations, except India, declined over the 1989 to 2006 period; Thailand's price decreased from \$2.74 to \$1.32 per pound between 1989 and 2006; China's price decreased from \$2.31 to \$1.30 per pound; Ecuador's price decreased from \$3.50 to \$1.47; India's price increased from \$1.36 to \$2.17; Mexico's price decreased from \$4.19 to \$2.55; and the price of shrimp from Vietnam decreased from \$2.92 and \$2.59 per pound between 1994 (first year of imports) and 2006. In comparison, the average price received by the U.S. shrimp fishery decreased from \$2.19 to \$1.35 per pound between 1989 and 2006.

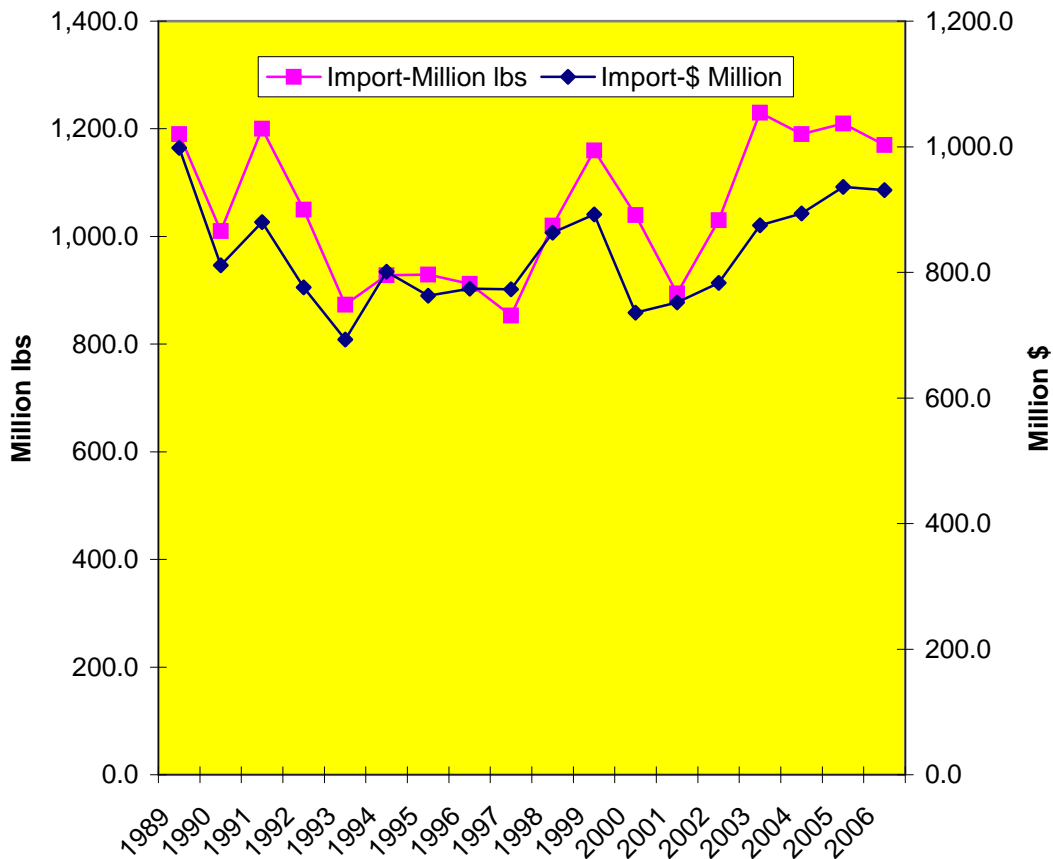
Figure 4.2. Imports of Shrimp, 1989-2006



Tuna was traditionally the seafood commodity most consumed by the U.S. consumer. In recent years, that has changed, particularly in response to various warnings about mercury content and consumption of tuna. And yet, imports are on the rise, particularly since 2001 (Figure 4.3). There is, however, no positive or negative trend in either import quantities or values over time. The United States imported tuna from 131 nations between 1989 and 2006. Twenty-four nations accounted for 95.2 % of the quantity imported and 73.9 % of the dollar value of tuna imports. The six major nations—Thailand, China-Taipei, Ecuador, Philippines, Indonesia, and Japan—accounted for 75.9 and 56.4 %, respectively, of the total quantity and dollar value of imports of tuna between 1989 and 2006.

The overall real price of imported tuna slightly decreased between 1989 and 2006—from \$0.84 to \$0.80 per pound. In comparison, the price received by U.S. harvesters (i.e., the ex-vessel price) decreased from \$2.02 to \$1.75 per pound. The average nominal retail price per pound of canned tuna in the United States declined from \$2.04 to \$1.93 between 1989 and 2005, which is the most recent period for which data are available.

Figure 4.3. Imports of Tuna, 1989-2006

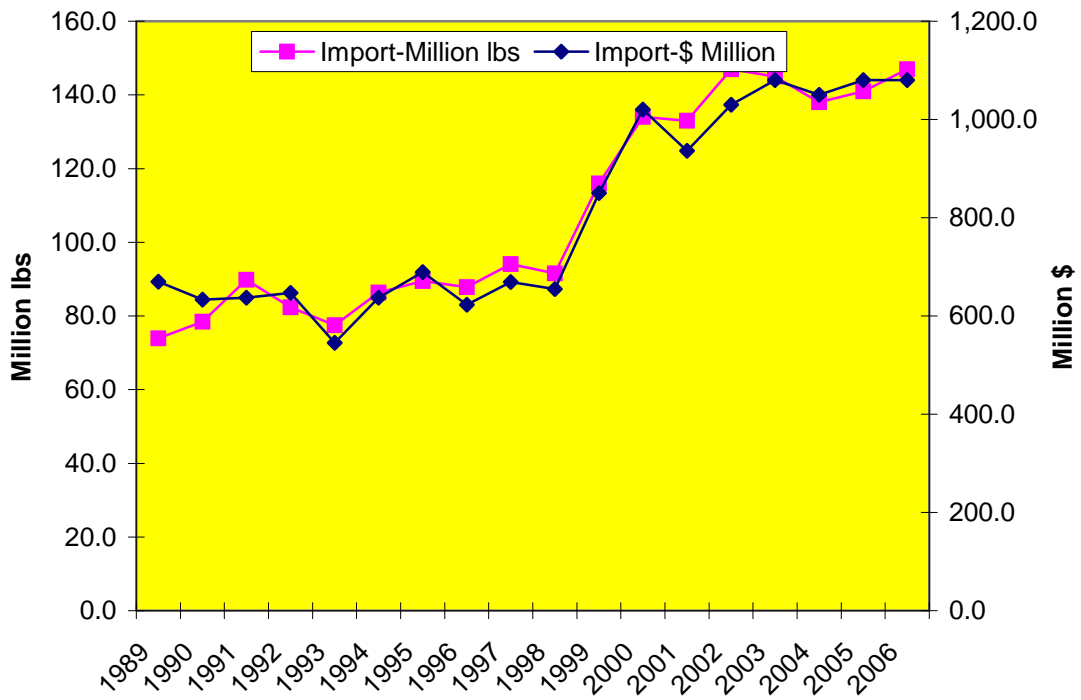


Lobster has typically been viewed as a luxury food commodity. It is also readily recognized as a product produced in American. The importation of lobster has, however, dramatically increased since 1989 (Figure 4.4). Between 1989 and 2006, the U.S. increased the imports of lobster from 73.9 to 147.0 million pounds and \$670.0 to \$1,080 million. Between 1989 and 2006, the United States imported some type of lobster from 119 nations, but 15 nations accounted for up to nearly 95.0 % of the volume and slightly over 95.0 % of the value of imported lobster. The 15 nations were Canada, Australia, Brazil, Bahamas, Honduras, Nicaragua, Mexico, South Africa, New Zealand, United Arab Emirates, Belize, Colombia, Oman, Cayman Islands, and Panama. Canada, however, accounted for 73.1 and 55.3 %, respectively, of the total imported volume and value.

Canada has consistently ranked number one in terms of value of lobsters exported to the United States. Australia, Brazil, and the Bahamas have held the number two spot over time. The third ranked level of imports has come from Australia, Honduras, Brazil, and the Bahamas. The United Arab Emirates has ranked between 8<sup>th</sup> and 10<sup>th</sup>, starting in 2000.

While the imports of lobster and related products have increased over time, the domestic landings of all types of lobsters also substantially increased—from 62.3 to 98.2 million pounds and from \$322.9 to \$430.2 million. The average price (price adjusted by producer price index for seafood and related products) received by U.S. fishermen decreased from \$5.18 to \$4.38 per pound between 1989 and 2006. In contrast, the average price per pound of imports decreased from \$9.06 to \$7.35 per pound; the average price of exports slightly increased from \$5.40 to \$5.53 per pound. Retail prices for lobster are not available, and thus, it is not possible to provide a comparative summary.

Figure 4.4. Imports of Lobster, 1989-2006



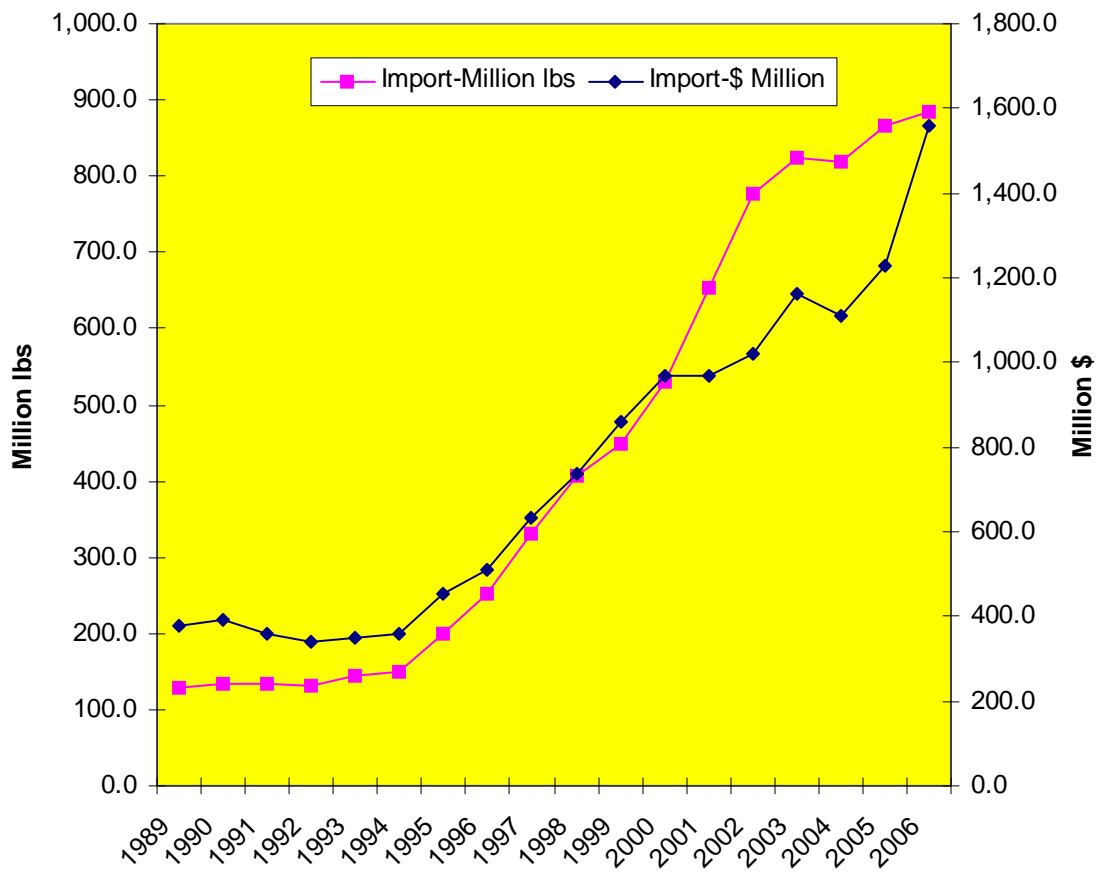


Salmon has been a highly desired seafood commodity in the United States. It is typically recognized for its health-smart Omega 3 content. Between 1989 and 2006, the imports of salmon increased from 128.0 to 885.0 million pounds (Figure 4.5); the dollar value of imports increased from \$379.0 to \$1,560.0 million. In comparison, domestic landings of all salmon decreased from 719.0 to 663.2 million; the corresponding ex-vessel value dramatically declined--\$1,154.1 to \$310.6 million. The United States imported salmon from 94 nations between 1989 and 2006. Four nations—Canada, Chile, Norway, and the United Kingdom--accounted for more than 90.0 % of both the volume and value of salmon imports. The two nations of Canada and Chile accounted for more than 80.0 % of both the volume and value of imports between 1989 and 2006.

Canada has traditionally been the major source of imports of salmon, but beginning in 2003, Chile became the major nation exporting salmon to the United States. China has been among the top 10 foreign suppliers of salmon since 1997. Between 1997 and 2006, China increased its exports of salmon to the United States from 2.1 (\$1.1) to 112.7 million pounds (\$97.5 million).

The price of imported salmon decreased from \$2.97 to \$1.76 per pound between 1989 and 2006. The average domestic ex-vessel price received by harvesters decreased from \$1.61 to \$0.47 per pound. The price of salmon from China increased from \$0.54 to \$0.87 per pound, but the price of salmon from Canada, a primary source of product, decreased from \$2.62 to \$2.03 per pound between 1989 and 2006. Similarly, the price of imported salmon from Chile, another major source of U.S. supply, dropped from \$2.88 to \$1.76 per pound.

Figure 4.5. Imports of Salmon, 1989-2006

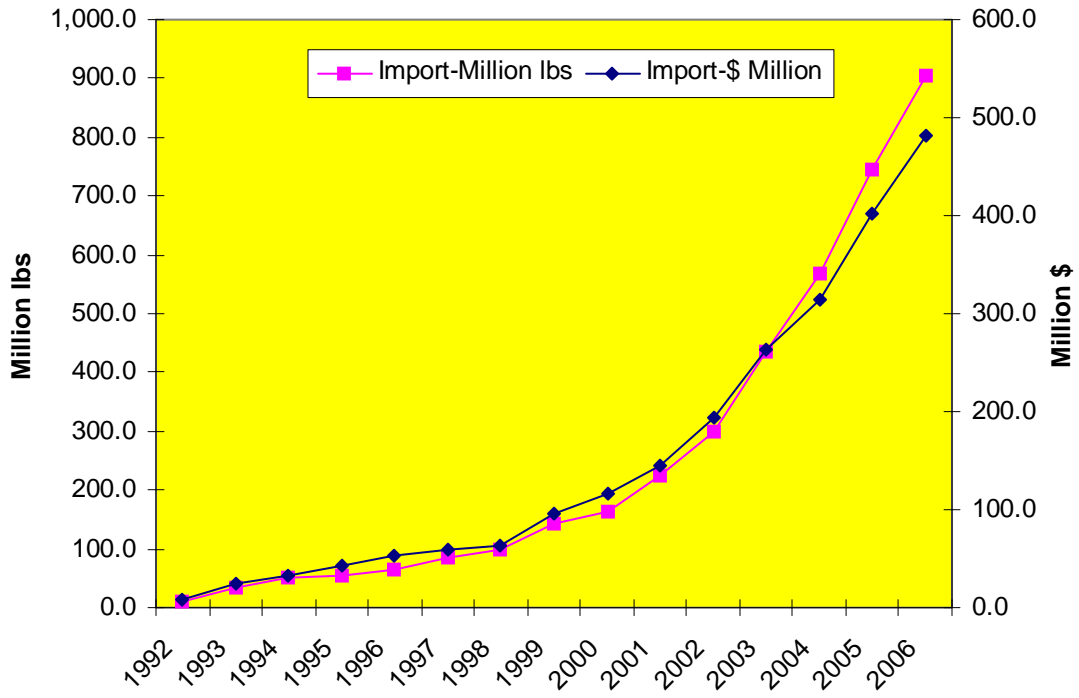


If there ever was a marketing and sales success story in seafood, it has to be for tilapia. Between 1992 and 2006, imports of tilapia increased from 9.8 to 906.0 million pounds and from \$8.1 to \$482.3 million (Figure 4.6). In contrast, the U.S. harvest of tilapia has been highly erratic. In 1989, the harvest equaled 3.1 million pounds (\$0.8 million); landings then increased to 6.2 million pounds and \$1.9 million in 1995; in 2006, landings and value equaled, respectively, 108.4 thousand pounds and \$78.0 thousand. Tilapia, however, are also farm raised in the United States. Between 2000 and 2005 (the most recent year for which data are available), domestic aquaculture production of tilapia decreased from 20.0 million pounds (\$30.0 million) to 17.2 million pounds (\$7.8 million).

The United States imported tilapia from 50 nations between 1992 and 2006. Seven nations accounted for approximately 95 % of the volume and value between 1992 and 2006. They were China, China-Taipei, Ecuador, Costa Rica, Honduras, Indonesia, and Thailand. Over the entire period of 1992 through 2005, either China or China-Taipei has been the top exporter of tilapia to the United States. China has ranked number one since 2002. In 2006, China accounted for 591.2 million pounds and \$255.0 million or 65.3 and 52.9 %, respectively, of the total imported volume and value.

The price of imports of tilapia decreased from \$0.83 in 1992 to \$0.53 per pound in 2006. Domestic ex-vessel prices for the same period increased from \$0.52 to \$0.72 per pound; prices of domestically farm-raised tilapia are not available. In 1994, the price of tilapia from China was \$0.64 per pound; between 2004 and 2006, the price of Chinese tilapia has remained relatively constant at \$0.43 per pound. In 2006, only the nations of China, China-Taipei, and Indonesia had prices below \$0.70 per pound for tilapia.

Figure 4.6. Imports of Tilapia, 1992-2006



## 4.7 Surpluses and Deficits and the Real Balance of Trade

Whether or not the U.S. is running a surplus or deficit in our balance of payments is often of considerable concern to U.S. policy makers. To many individuals, deficits represent dollars and jobs leaving the nation, while surpluses equate to jobs and dollars remaining in the nation. Such metrics, however, infer little about the quality of life or the social well being of our society. A major problem with assessing the balance of trade is when the assessment is done over time, we must have some metric to equate dollars or differences in trade in one period to dollars or differences in other periods. Depending upon how the nominal values are converted to constant dollar values, we may end up with a surplus and deficit balance of payment for a product in the same year.

Numerous indexes are available for converting nominal to constant dollar values. To reiterate, a constant dollar value equals the nominal dollar value in terms of a constant time period, which adjusts for inflation (e.g., what would we have to pay today for a candy bar valued at \$0.05 in 1950?). A review of various government reports, unfortunately, reveals that many deflators have often been used to convert the nominal values of exports and imports to constant dollar values. The consumer price index, the producer price index, the gross national product implicit price deflator, the import price deflator, and the export price deflator have all been used to convert nominal values to constant dollar values.

For some unknown reason, the official deflator of the U.S. Department of Commerce (USDOC) is seldom used by agencies not directly involved with trade statistics. The official USDOC approach to deflation is to deflate import and export values using, respectively, import and export price deflators. Dennison (1981) argued, however, that import and export values the balance of trade should be deflated using the import price series. Denison's logic was that since in the long run, exports pay for imports, the value of exports is really the quantity of imports, which can be purchased with our exports. Another frequently used index is the gross national product (GNP) implicit price deflator; the logic for using the implicit price deflator is that the trade balance is part of the gross national product, and thus, imports and exports should be deflated using the GNP implicit price deflator. Fabricant (1951) argued that the GNP implicit price deflator should be used to convert the nominal trade values to constant dollar values.

In this section, we examine the trade balance using the three basic methods of deflation: (1) GNP implicit price deflator, (2) the official USDOC method of deflating imports and exports using, respectively, import and export price deflators, and (3) the approach recommended by Denison (1981), which deflates both imports and exports by the import price deflator. Our assessment is done for all 30 products or product groupings and all values are converted to 2006 values.

Examination of the differences between import and export values, based on the different deflators, revealed some products showing as a deficit (imports – exports > 0) in some years and a surplus (imports – exports < 0) in the same years (Table 4.7). Using the

GNP implicit price deflator and the official DOC import and export deflators, we find that all other products, groundfish, flatfish, squid, salmon, squid, herring and sardines, and sharks varied were surplus and deficit commodities in the same years, depending upon the deflator used to convert to constant 2006 dollar values. In other cases in which the balance is consistent, regardless of the deflator, there are very large differences (e.g., the trade balance for shrimp in 1989 varies from \$2.057 to \$2.408 billion).

In 1989, the 10 products with the largest deficits (value of imports > value of exports) included shrimp, groundfish, tuna, lobster, various fish with no specific product form, scallops, flatfish, other shellfish, oysters, and swordfish. In 2006, the 10 species with the largest deficits were shrimp, crabs, salmon, tuna, lobster, various fish with no specific product form, tilapia, toothfish, squid, and catfish.

In 2006, the five products with the highest deficits included shrimp, crabs, salmon, tuna, and lobster. Examination of the constant dollar values of the difference between import and export values corresponding to the various deflators reveals the potential for a product to have either a surplus or deficit trade balance in a given year and varying levels of the trade balance in a given year (Figures 4.7-4.11). Note that between 1997 and 1998, the trade balance for salmon goes from a surplus to a deficit, where it has remained since 1998. Also note, however, that depending upon which deflator is used, the trade balance for salmon is both a surplus and a deficit in 1997.

Table 4.7. Trade Balance for 30 Seafood and Related Products, Using Different Deflators

YEAR	Product Group	Weight	GNP-Fabricant	Official	Denison
1989	Shrimp	829,246,285	2,408,473,427	2,057,970,254	2,063,447,874
1989	Groundfish	1,643,985,013	1,040,953,994	885,986,847	891,832,263
1989	Tuna	1,165,560,828	932,620,809	795,668,506	799,018,335
1989	Lobster	57,084,175	578,941,090	491,353,706	496,004,958
1989	Fish NSPF	440,632,284	395,965,547	318,558,127	339,241,553
1989	Scallops	38,838,938	195,005,622	166,556,175	167,070,116
1989	Flatfish	180,548,654	171,287,892	140,735,826	146,750,067
1989	Other Shellfish	636,308,971	73,329,708	59,945,073	62,824,870
1989	Oysters	36,647,904	60,743,343	51,772,973	52,041,563
1989	Swordfish <sup>a</sup>	21,028,203	57,366,518	49,148,485	49,148,485
1989	Molluscs	52,069,686	54,386,935	46,012,617	46,595,742
1989	Crustaceans	11,881,684	23,034,284	19,014,923	19,734,510
1989	Clams	11,172,547	20,587,950	17,235,865	17,638,626
1989	Catfish	14,792,643	7,755,216	6,644,243	6,644,243
1989	Mussels	1,918,885	6,910,158	5,876,916	5,920,244
1989	Shark (No Do	484,141	5,796,278	4,965,933	4,965,933
1989	Fresh Dogfish	6,790,127	3,868,062	3,298,505	3,313,943
1989	Grouper	4,839	12,258	10,502	10,502
1989	Snapper	2,799	6,335	5,428	5,428
1989	Frozen Dogfish	-622,268	-191,405	-225,912	-163,985
1989	Bass	-556,958	-734,907	-675,196	-629,628
1989	All Other	-152,995,184	-8,588,455	-30,472,621	-7,358,117
1989	Herring and	37,387,525	-12,424,648	-17,135,634	-10,644,757
1989	Squid	-26,034,875	-14,100,034	-14,921,640	-12,080,135
1989	Sticks	-129,831,307	-55,178,055	-51,028,524	-47,273,529
1989	Sablefish	-57,806,251	-122,035,177	-110,832,083	-104,553,044
1989	Crabs	-7,967,473	-265,609,583	-246,743,725	-227,559,717
1989	Salmon	-364,539,984	-967,536,309	-897,917,606	-828,932,018

<sup>a</sup>There are no reported exports for swordfish, and thus, the official deflation and Deninson's recommended approach yield the same constant dollar value.

Table 4.7. Continued

YEAR	Product Group	Weight	GNP-Fabricant	Official	Denison
1990	Shrimp	829,983,706	2,184,992,520	1,848,439,856	1,886,185,539
1990	Groundfish	1,339,543,842	862,424,956	690,514,931	744,484,691
1990	Tuna	975,955,819	732,244,811	614,449,158	632,107,232
1990	Lobster	60,033,095	526,706,596	430,938,023	454,677,238
1990	Scallops	33,440,219	157,894,878	130,040,174	136,302,084
1990	Flatfish	125,008,749	134,924,340	88,471,630	116,472,865
1990	Swordfish	23,050,664	55,381,964	47,808,246	47,808,246
1990	Oysters	26,501,551	47,478,778	40,281,221	40,985,854
1990	Clams	12,776,819	31,062,453	25,115,166	26,814,531
1990*	All Other	-123,905,815	25,866,908	-72,525,730	22,329,499
1990	Crustaceans	9,055,799	25,301,903	19,441,069	21,841,760
1990	Molluscs	15,185,162	19,242,894	12,260,979	16,611,347
1990	Mussels	2,062,810	7,603,791	6,097,477	6,563,941
1990	Shark (No Do	421,822	5,711,368	4,930,314	4,930,314
1990	Catfish	8,510,270	4,918,416	4,131,201	4,245,802
1990	Grouper	1,807,730	2,326,591	2,008,420	2,008,420
1990	Snapper	1,472,776	2,000,980	1,727,337	1,727,337
1990	Bass	1,375,557	1,821,627	1,476,056	1,572,512
1990	Fresh Dogfish	4,685,927	1,800,385	898,136	1,554,175
1990	Herring and	363,904,432	-563,770	-30,222,042	-486,672
1990	Squid	-23,736,456	-2,480,465	-10,208,061	-2,141,251
1990	Frozen Dogfish	-5,484,040	-4,856,547	-5,366,524	-4,192,394
1990	Other Shellfish	322,139,904	-13,123,538	-30,782,271	-11,328,839
1990	Sticks	-216,028,521	-73,651,621	-83,892,412	-63,579,450
1990	Sablefish	-50,584,952	-102,915,242	-111,943,988	-88,841,147
1990	Fish NSPF	-695,156,315	-107,314,610	-271,292,164	-92,638,883
1990	Crabs	-51,383,840	-397,205,239	-458,493,541	-342,885,740
1990	Salmon	-333,178,919	-827,258,200	-987,516,216	-714,127,137



Table 4.7. Continued

YEAR	Product Group	Weight	GNP-Fabricant	Official	Denison
1991	Shrimp	924,288,896	2,394,337,511	2,086,306,005	2,132,630,853
1991	Tuna	1,161,596,983	810,004,454	699,798,771	721,469,083
1991	Lobster	66,005,738	508,111,098	412,808,906	452,573,373
1991*	Groundfish	530,918,276	297,330,879	-19,262,816	264,831,923
1991	Fish NSPF	145,350,826	229,967,445	61,143,497	204,831,469
1991	Scallops	23,328,097	122,759,828	100,296,560	109,341,894
1991	Swordfish	22,113,293	57,755,146	51,442,375	51,442,375
1991*	Flatfish	-39,320,785	56,514,298	-8,427,415	50,337,154
1991	Oysters	29,507,784	56,408,223	49,212,052	50,242,673
1991	Molluscs	10,537,062	26,671,854	17,791,778	23,756,558
1991	Crustaceans	9,200,966	25,575,352	17,616,754	22,779,907
1991	Clams	9,150,542	23,879,713	18,284,396	21,269,605
1991	Snapper	9,571,055	16,627,507	14,810,082	14,810,082
1991	Grouper	8,573,159	10,814,976	9,632,874	9,632,874
1991	Catfish	11,137,568	7,219,048	6,281,952	6,429,989
1991	Shark (No Do	529,798	7,199,962	6,412,989	6,412,989
1991	Mussels	2,334,387	6,779,452	5,247,838	6,038,442
1991*	Squid	-16,081,168	3,426,490	-8,564,560	3,051,967
1991	Bass	1,126,043	1,482,373	1,262,985	1,320,346
1991	Fresh Dogfish	4,573,562	1,285,844	181,244	1,145,299
1991	Frozen Dogfish	-8,035,659	-8,650,218	-10,494,834	-7,704,729
1991	Herring and	235,426,486	-10,185,604	-50,114,396	-9,072,294
1991	All Other	-208,683,113	-41,615,868	-191,233,296	-37,067,157
1991	Sticks	-100,523,042	-53,065,752	-68,358,937	-47,265,542
1991	Other Shellfish	-418,779,840	-58,983,793	-88,677,989	-52,536,727
1991	Sablefish	-48,443,260	-134,279,310	-161,121,551	-119,602,269
1991	Crabs	-192,915,717	-464,280,778	-596,172,017	-413,533,809
1991	Salmon	-289,410,568	-522,740,951	-737,784,918	-465,604,149

Table 4.7. Continued

YEAR	Product Group	Weight	GNP-Fabricant	Official	Denison
1992	Shrimp	1,024,211,656	2,557,684,043	2,274,409,894	2,315,413,144
1992	Tuna	1,010,343,845	717,452,275	632,638,255	649,493,214
1992	Lobster	59,931,090	513,209,800	426,199,747	464,597,150
1992	Groundfish	1,060,994,187	442,239,773	263,519,667	400,349,600
1992	Fish NSPF	172,634,852	270,474,582	119,455,201	244,854,482
1992	Scallops	35,800,626	197,702,122	174,262,959	178,975,231
1992	Flatfish	7,502,118	95,858,454	49,902,687	86,778,476
1992	Oysters	25,487,508	58,282,606	51,832,814	52,761,916
1992	Swordfish	21,217,210	57,404,835	51,967,291	51,967,291
1992	Crustaceans	13,612,635	40,134,870	33,417,511	36,333,185
1992	Clams	11,135,352	33,211,473	27,720,674	30,065,591
1992	Snapper	15,802,312	28,368,069	25,680,967	25,680,967
1992	Molluscs	8,521,915	23,137,922	15,457,221	20,946,234
1992	Grouper	10,228,248	14,532,563	13,155,998	13,155,998
1992	Shark (No Do	617,936	11,164,020	10,106,533	10,106,533
1992	Tilapia	9,784,150	8,093,976	7,327,292	7,327,292
1992	Mussels	2,607,807	6,514,704	4,944,204	5,897,613
1992	Catfish	5,864,149	3,459,076	2,938,076	3,131,423
1992	Bass	1,175,009	1,777,758	1,594,782	1,609,364
1992	Fresh Dogfish	691,867	-3,246,310	-5,117,743	-2,938,811
1992	Squid	-22,079,219	-4,643,246	-17,949,850	-4,203,425
1992	Frozen Dogfish	-14,204,435	-14,857,251	-17,787,153	-13,449,931
1992	Herring and	229,260,568	-32,102,586	-70,555,936	-29,061,740
1992	Other Shellfish	-593,275,985	-47,614,059	-72,198,298	-43,103,924
1992	Sticks	-75,883,432	-49,830,461	-63,259,266	-45,110,382
1992	Sablefish	-39,778,277	-105,877,776	-126,420,105	-95,848,740
1992	Crabs	-203,228,873	-443,125,115	-573,320,020	-401,151,080
1992	All Other	-1,480,741,394	-520,187,464	-746,006,338	-470,913,870
1992	Salmon	-367,963,494	-908,175,100	-1,179,768,089	-822,150,246

Table 4.7. Continued

YEAR	Product Group	Weight	GNP-Fabricant	Official	Denison
1993	Shrimp	1,037,359,935	2,690,694,570	2,444,866,215	2,498,783,289
1993	Tuna	842,719,953	644,337,327	580,687,036	598,380,568
1993	Groundfish	1,160,463,619	535,970,389	403,186,708	497,742,801
1993	Lobster	57,118,139	428,468,698	355,636,302	397,908,567
1993	Fish NSPF	394,615,864	378,023,865	215,918,127	351,061,665
1993	Scallops	49,349,746	272,998,281	248,443,561	253,526,934
1993	Flatfish	-9,474,651	96,935,820	36,970,023	90,021,963
1993	Other Shellfish	2,866,788,324	67,101,959	34,147,188	62,315,974
1993	Oysters	26,658,334	55,613,192	49,591,380	51,646,633
1993	Swordfish	18,004,794	51,170,055	47,520,399	47,520,399
1993	Crustaceans	17,114,465	42,346,176	36,781,078	39,325,874
1993	Snapper	17,662,477	28,935,883	26,872,058	26,872,058
1993	Clams	9,943,707	28,198,910	23,184,839	26,187,649
1993	Tilapia	32,273,153	23,455,188	21,711,226	21,782,269
1993	Molluscs	4,318,316	17,984,174	7,910,771	16,701,469
1993	Grouper	9,412,396	13,865,951	12,876,975	12,876,975
1993	Shark (No Do	444,125	10,563,795	9,810,343	9,810,343
1993	Mussels	3,532,005	7,360,965	5,497,948	6,835,951
1993*	Squid	-16,164,870	4,865,649	-12,114,522	4,518,611
1993	Catfish	8,684,141	4,705,284	4,161,602	4,369,684
1993	Bass	2,111,352	3,678,657	3,351,075	3,416,280
1993	Herring and	451,156,629	-4,043,471	-48,208,032	-3,755,074
1993	Fresh Dogfish	-6,235,349	-8,265,015	-12,370,611	-7,675,521
1993	Frozen Dogfish	-9,143,493	-9,270,320	-12,156,500	-8,609,123
1993	Sticks	-81,315,244	-37,946,243	-53,898,990	-35,239,762
1993	Sablefish	-53,550,258	-119,465,647	-154,541,948	-110,944,871
1993	Crabs	-96,887,043	-350,686,644	-524,985,131	-325,674,247
1993	All Other	-2,004,895,842	-374,843,602	-639,923,972	-348,108,232
1993	Salmon	-406,804,902	-789,955,137	-1,148,278,897	-733,612,324

Table 4.7. Continued

YEAR	Product Group	Weight	GNP-Fabricant	Official	Denison
1994	Shrimp	1,100,193,486	3,277,730,801	3,019,733,994	3,056,151,013
1994	Tuna	889,260,963	733,890,073	667,395,189	684,277,943
1994	Groundfish	1,063,226,292	473,022,437	371,475,399	441,045,372
1994	Fish NSPF	471,827,921	465,633,782	350,156,719	434,156,202
1994	Lobster	53,969,627	461,326,843	385,583,704	430,140,418
1994	Scallops	53,205,530	260,810,527	238,838,127	243,179,323
1994	Oysters	22,320,761	41,661,365	36,539,846	38,844,991
1994	Swordfish	13,386,202	38,667,649	36,053,655	36,053,655
1994	Crustaceans	15,844,166	37,378,123	33,371,131	34,851,303
1994	Other Shellfish	2,020,911,301	36,237,860	15,084,873	33,788,123
1994	Clams	12,860,156	35,864,508	31,561,579	33,440,011
1994	Tilapia	50,872,053	32,532,693	30,287,699	30,333,432
1994	Snapper	15,328,266	25,829,650	24,083,525	24,083,525
1994	Molluscs	11,874,799	19,968,307	11,684,893	18,618,418
1994*	Flatfish	-96,458,533	15,756,533	-37,028,225	14,691,366
1994	Mussels	5,502,883	13,851,161	12,226,325	12,914,800
1994	Grouper	9,568,182	13,687,601	12,762,298	12,762,298
1994	Shark (No Do	250,895	5,535,902	5,161,666	5,161,666
1994	Catfish	7,168,091	4,552,350	4,148,714	4,244,604
1994	Bass	1,561,733	3,216,276	2,901,804	2,998,851
1994	Squid	-70,079,163	-10,051,666	-29,123,301	-9,372,157
1994	Fresh Dogfish	-5,805,191	-10,179,787	-13,538,322	-9,491,617
1994	Herring and	300,085,763	-12,494,180	-42,601,661	-11,649,554
1994	Frozen Dogfish	-10,655,545	-13,630,551	-16,374,923	-12,709,105
1994	Sticks	-61,794,484	-28,577,655	-36,415,101	-26,645,761
1994	Sablefish	-43,138,451	-114,315,372	-135,637,946	-106,587,472
1994	Crabs	-2,224,695	-180,454,692	-281,496,587	-168,255,669
1994	All Other	-1,933,036,965	-403,666,461	-595,833,252	-376,377,970
1994	Salmon	-351,647,397	-667,429,321	-881,880,673	-622,310,043

Table 4.7. Continued

YEAR	Product Group	Weight	GNP-Fabricant	Official	Denison
1995	Shrimp	1,051,862,278	3,090,049,529	2,797,183,882	2,812,937,289
1995	Tuna	888,246,346	701,176,891	631,964,977	638,296,119
1995	Lobster	52,711,860	473,338,291	408,759,160	430,889,834
1995	Fish NSPF	447,096,630	412,717,356	343,845,073	375,705,318
1995	Groundfish	1,118,200,458	392,467,996	319,147,625	357,271,898
1995	Scallops	44,888,519	203,454,259	183,547,873	185,208,705
1995	Crustaceans	19,723,469	53,345,322	47,808,495	48,561,373
1995	Oysters	21,959,150	44,905,398	40,018,656	40,878,331
1995	Tilapia	55,624,501	42,423,166	38,607,601	38,618,703
1995	Swordfish	14,135,247	39,718,240	36,156,352	36,156,352
1995	Crabs	110,915,199	32,034,307	2,210,161	29,161,506
1995	Snapper	18,800,119	31,617,586	28,782,156	28,782,156
1995	Clams	10,023,988	31,202,352	27,505,795	28,404,159
1995	Molluscs	11,034,922	23,131,977	18,613,703	21,057,526
1995*	Flatfish	-80,837,957	22,866,829	-348,821	20,816,157
1995	Mussels	6,609,908	17,380,887	15,530,353	15,822,188
1995	Grouper	13,118,757	16,510,506	15,029,862	15,029,862
1995	Shark (No Do	3,048,810	6,577,671	5,828,066	5,987,792
1995	Bass	1,158,990	3,656,970	3,065,620	3,329,017
1995	Catfish	4,532,083	2,023,936	1,714,899	1,842,431
1995	Fresh Dogfish	-7,436,181	-15,837,013	-16,139,783	-14,416,767
1995	Frozen Dogfish	-20,468,938	-23,610,896	-23,951,056	-21,493,497
1995	Squid	-85,112,503	-25,232,169	-31,696,345	-22,969,376
1995	Sticks	-66,107,772	-29,540,107	-32,353,882	-26,890,983
1995	Other Shellfish	-236,277,777	-56,932,231	-62,421,504	-51,826,611
1995	Herring and	59,242,878	-60,006,741	-71,088,145	-54,625,403
1995	Sablefish	-44,337,874	-126,490,630	-128,180,455	-115,147,089
1995	All Other	-1,750,810,004	-308,710,592	-376,717,944	-281,025,766
1995	Salmon	-368,180,618	-618,009,238	-672,607,854	-562,586,850

Table 4.7. Continued

YEAR	Product Group	Weight	GNP-Fabricant	Official	Denison
1996	Shrimp	1,046,474,529	2,901,785,168	2,637,561,726	2,664,582,021
1996	Tuna	865,090,853	714,208,050	643,340,061	655,825,921
1996	Lobster	45,964,087	386,462,850	305,115,597	354,871,881
1996	Groundfish	1,070,198,161	347,269,802	237,066,984	318,882,625
1996	Fish NSPF	306,787,995	326,557,975	231,730,243	299,863,862
1996	Scallops	55,353,664	228,151,570	205,970,901	209,501,578
1996	Crabs	119,445,571	87,616,935	36,761,667	80,454,788
1996	Tilapia	63,815,992	52,609,114	48,271,169	48,308,641
1996	Snapper	24,531,058	42,188,056	38,739,441	38,739,441
1996	Swordfish	15,608,544	40,282,547	36,989,696	36,989,696
1996	Oysters	21,000,925	39,377,494	34,603,135	36,158,625
1996	Crustaceans	13,540,971	35,723,498	30,635,243	32,803,321
1996	Clams	10,849,674	30,805,425	25,986,487	28,287,271
1996	Mussels	9,628,676	22,627,888	20,106,832	20,778,197
1996	Molluscs	8,632,598	20,215,779	11,933,044	18,563,263
1996*	Flatfish	-69,389,072	20,076,301	-18,849,943	18,435,186
1996	Grouper	12,201,540	14,985,804	13,760,806	13,760,806
1996	Bass	3,954,385	10,801,188	9,462,101	9,918,257
1996	Sticks	-14,347,741	10,294,070	1,858,915	9,452,593
1996	Shark (No Do	1,215,686	5,026,805	4,014,825	4,615,895
1996	Catfish	3,810,299	1,459,973	821,199	1,340,629
1996	Squid	-83,391,147	-7,439,083	-25,292,641	-6,830,983
1996	Fresh Dogfish	-6,742,307	-15,418,105	-17,548,469	-14,157,769
1996	Frozen Dogfish	-20,745,111	-21,565,425	-24,357,693	-19,802,584
1996	Herring and	76,089,612	-61,327,682	-89,880,848	-56,314,520
1996	Other Shellfish	-329,191,165	-79,952,353	-102,349,112	-73,416,738
1996	Sablefish	-43,761,958	-115,357,530	-130,199,391	-105,927,759
1996	All Other	-1,535,219,279	-155,879,601	-312,444,849	-143,137,399
1996	Salmon	-250,208,276	-375,586,656	-530,748,219	-344,884,749

Table 4.7. Continued

YEAR	Product Group	Weight	GNP-Fabricant	Official	Denison
1997	Shrimp	1,188,107,743	3,465,653,767	3,294,352,046	3,317,200,667
1997	Tuna	811,014,815	715,796,944	674,359,067	685,135,406
1997	Lobster	46,524,952	420,160,872	355,305,159	402,163,060
1997	Groundfish	1,130,994,090	417,636,074	332,721,487	399,746,414
1997	Crabs	198,738,533	288,588,119	249,586,608	276,226,295
1997	Fish NSPF	201,522,539	280,287,401	207,780,238	268,281,143
1997	Scallops	53,283,155	253,806,832	236,385,529	242,934,883
1997	Swordfish	77,344,488	115,622,216	110,669,477	110,669,477
1997	Tilapia	84,013,291	58,931,558	56,278,449	56,407,194
1997	Crustaceans	17,512,745	50,523,136	46,485,989	48,358,951
1997	Snapper	28,939,823	47,154,009	45,134,143	45,134,143
1997	Bass	15,786,802	38,041,024	36,155,338	36,411,517
1997	Oysters	20,092,229	36,278,477	33,300,752	34,724,470
1997	Clams	9,430,349	28,707,860	25,436,812	27,478,143
1997*	Flatfish	-137,655,051	28,020,229	-7,763,618	26,819,967
1997	Mussels	12,646,423	27,171,065	25,685,791	26,007,178
1997*	Salmon	-32,183,172	26,554,486	-89,066,661	25,417,011
1997	Grouper	16,199,436	21,744,574	20,813,134	20,813,134
1997	Molluscs	12,335,929	18,905,960	12,476,336	18,096,113
1997	Sticks	-8,205,303	17,156,060	9,316,362	16,421,171
1997	Shark (No Do	1,183,324	5,993,849	5,323,423	5,737,099
1997	Catfish	1,350,565	915,469	725,212	876,254
1997	Herring and	92,044,860	-2,441,375	-21,782,524	-2,336,798
1997	Frozen Dogfish	-12,943,115	-11,730,332	-13,441,607	-11,227,857
1997	Fresh Dogfish	-8,159,344	-13,717,871	-15,835,330	-13,130,258
1997	Squid	-102,423,871	-16,472,846	-36,746,787	-15,767,223
1997	Other Shellfish	-456,013,394	-52,614,812	-71,467,625	-50,361,029
1997	Sablefish	-33,346,459	-76,890,261	-88,332,561	-73,596,627
1997	All Other	-1,591,172,968	-126,570,756	-273,944,808	-121,149,032

Table 4.7. Continued

YEAR	Product Group	Weight	GNP-Fabricant	Official	Denison
1998	Shrimp	1,309,263,090	3,628,104,227	3,717,596,942	3,736,412,553
1998	Tuna	967,527,102	801,928,434	815,610,379	825,868,079
1998	Groundfish	1,020,702,701	545,805,076	515,425,962	562,098,774
1998	Lobster	47,667,735	432,010,244	407,586,465	444,906,871
1998	Crabs	270,870,392	354,366,803	342,050,694	364,945,572
1998	Fish NSPF	323,023,033	300,158,088	259,910,334	309,118,585
1998	Scallops	48,437,738	243,735,841	247,355,719	251,011,988
1998	Salmon	96,807,589	207,521,550	124,874,460	213,716,607
1998	Swordfish	80,455,889	98,175,279	101,106,066	101,106,066
1998	Flatfish	-11,608,355	97,503,088	79,206,516	100,413,808
1998	Tilapia	97,032,688	62,587,823	64,385,017	64,456,232
1998	Squid	45,374,321	57,184,452	53,186,547	58,891,556
1998	Crustaceans	23,075,250	51,634,166	52,399,420	53,175,580
1998	Snapper	27,348,663	45,052,111	46,397,033	46,397,033
1998	Clams	11,456,049	36,874,097	36,289,366	37,974,884
1998	Toothfish	21,301,453	35,549,307	36,610,546	36,610,546
1998	Mussels	16,184,958	35,462,578	36,207,773	36,521,228
1998	Oysters	27,450,632	34,910,364	34,703,594	35,952,529
1998	Herring and	190,750,310	30,816,704	17,387,645	31,736,663
1998	Grouper	16,116,330	23,680,665	24,387,594	24,387,594
1998	Molluscs	7,862,783	18,685,643	14,009,170	19,243,458
1998	Sticks	-9,458,769	12,517,720	6,885,709	12,891,406
1998	Shark (No Do	950,008	2,282,932	1,931,448	2,351,084
1998	Catfish	2,261,428	1,562,713	1,441,138	1,609,365
1998	Bass	438,227	928,025	695,039	955,729
1998	Frozen Dogfish	-9,436,421	-8,890,204	-10,650,929	-9,155,600
1998	Fresh Dogfish	-4,911,445	-11,902,739	-14,359,616	-12,258,066
1998	All Other	-1,342,521,967	-17,161,353	-128,128,979	-17,673,664
1998	Sablefish	-25,895,811	-56,421,588	-67,717,549	-58,105,918
1998	Other Shellfish	-582,676,878	-62,835,073	-84,156,246	-64,710,863



Table 4.7. Continued

YEAR	Product Group	Weight	GNP-Fabricant	Official	Denison
1999	Shrimp	1,402,639,719	3,607,970,550	3,739,232,933	3,737,823,808
1999	Tuna	1,125,249,684	849,372,872	880,468,473	879,942,366
1999	Groundfish	1,112,364,016	595,592,463	621,328,196	617,028,231
1999	Lobster	57,817,478	546,009,603	569,442,401	565,660,851
1999	Crabs	329,952,254	515,274,673	536,062,859	533,819,751
1999	Fish NSPF	265,002,649	301,840,516	316,869,003	312,703,957
1999	Scallops	39,387,476	207,535,497	215,289,863	215,004,837
1999	Salmon	9,696,118	104,388,996	117,538,348	108,146,025
1999	Tilapia	140,623,593	95,270,688	98,717,955	98,699,543
1999	Crustaceans	45,529,345	91,212,281	94,597,846	94,495,072
1999	Flatfish	46,913,486	87,009,661	91,990,580	90,141,196
1999	Swordfish	61,272,090	84,614,222	87,659,544	87,659,544
1999	Toothfish	27,001,395	70,871,751	73,422,473	73,422,473
1999	Snapper	27,836,362	44,216,585	45,807,970	45,807,970
1999	Clams	12,338,779	38,339,579	39,839,774	39,719,446
1999	Oysters	27,807,195	37,267,573	38,705,654	38,608,858
1999	Mussels	16,365,214	36,764,581	38,120,583	38,087,763
1999	Squid	-23,282,199	30,724,750	32,729,126	31,830,554
1999	Sticks	9,360,598	25,426,931	26,735,736	26,342,064
1999	Grouper	11,570,135	18,126,360	18,778,740	18,778,740
1999	Molluscs	6,714,939	10,489,584	11,415,915	10,867,111
1999	Catfish	7,092,316	6,109,037	6,336,591	6,328,906
1999	Bass	1,315,336	4,581,433	4,761,067	4,746,322
1999	Shark (No Do	2,205,945	3,184,477	3,324,580	3,299,089
1999	Herring and	205,648,226	-3,782,772	-2,368,216	-3,918,917
1999	Frozen Dogfish	-8,525,472	-8,457,995	-8,654,352	-8,762,404
1999	All Other	-1,310,995,627	-8,552,210	-145,751	-8,860,010
1999	Fresh Dogfish	-9,085,622	-12,918,759	-13,220,850	-13,383,713
1999	Other Shellfish	-844,578,099	-68,884,258	-70,077,489	-71,363,448
1999	Sablefish	-33,872,963	-71,108,251	-72,764,581	-73,667,484

Table 4.7. Continued

YEAR	Product Group	Weight	GNP-Fabricant	Official	Denison
2000	Shrimp	1,483,442,967	4,223,730,967	4,181,853,329	4,197,914,136
2000	Tuna	1,015,695,277	701,500,002	693,118,432	697,212,204
2000	Crabs	418,116,309	695,815,910	674,229,813	691,562,854
2000	Lobster	66,686,960	684,595,060	640,157,085	680,410,590
2000	Fish NSPF	410,955,948	411,674,993	374,225,055	409,158,700
2000	Groundfish	976,457,555	376,279,775	321,574,744	373,979,829
2000	Salmon	127,708,028	283,087,332	199,203,005	281,357,010
2000	Scallops	46,887,414	213,923,601	208,422,689	212,616,029
2000	Tilapia	159,468,688	115,106,382	114,150,910	114,402,814
2000	Flatfish	28,894,946	108,353,838	89,622,560	107,691,544
2000	Toothfish	38,481,309	107,174,876	106,443,079	106,519,788
2000	Swordfish	64,796,579	99,017,140	98,411,914	98,411,914
2000	Mussels	20,626,892	52,385,051	51,832,297	52,064,856
2000	Snapper	32,661,629	51,787,921	51,471,376	51,471,376
2000	Clams	14,082,013	46,222,019	44,894,935	45,939,495
2000	Herring and	294,784,075	42,057,686	30,145,396	41,800,616
2000	Oysters	30,176,971	38,587,950	37,346,297	38,352,087
2000	Crustaceans	24,617,776	38,338,705	37,148,898	38,104,366
2000	Molluscs	25,945,419	25,905,070	20,618,841	25,746,729
2000	Grouper	10,244,892	19,214,709	19,097,262	19,097,262
2000	Sticks	1,957,319	17,667,625	12,529,836	17,559,634
2000	Catfish	17,604,915	14,054,011	13,932,886	13,968,109
2000*	Squid	-106,375,189	7,621,522	-4,234,544	7,574,937
2000*	All Other	-1,759,998,800	5,304,683	-74,800,190	5,272,259
2000	Bass	1,121,368	2,622,911	2,523,814	2,606,879
2000*	Shark (No Do	528,558	131,283	-464,741	130,481
2000	Fresh Dogfish	-3,504,364	-8,157,068	-9,179,804	-8,107,209
2000	Frozen Dogfish	-9,469,057	-8,251,344	-9,195,355	-8,200,909
2000	Other Shellfish	-914,526,573	-82,920,469	-97,191,997	-82,413,632
2000	Sablefish	-42,976,040	-98,023,221	-109,299,218	-97,424,071

Table 4.7. Continued

YEAR	Product Group	Weight	GNP-Fabricant	Official	Denison
2001	Shrimp	1,713,910,468	3,988,884,625	4,189,069,808	4,210,250,786
2001	Crabs	568,871,276	892,645,657	922,204,683	942,183,701
2001	Tuna	860,681,371	710,263,556	742,423,600	749,680,167
2001	Lobster	70,333,638	640,265,455	624,048,367	675,797,469
2001	Fish NSPF	246,005,894	348,639,095	309,845,314	367,987,084
2001	Salmon	219,442,795	347,575,932	258,198,666	366,864,920
2001	Tilapia	221,653,956	141,429,995	148,770,264	149,278,760
2001	Toothfish	47,353,464	117,993,819	124,492,268	124,541,975
2001	Scallops	30,644,225	107,597,822	106,646,317	113,569,044
2001	Swordfish	58,388,439	92,065,915	97,175,182	97,175,182
2001	Flatfish	4,307,564	80,442,942	61,724,998	84,907,183
2001	Snapper	35,719,352	55,189,037	58,251,794	58,251,794
2001	Clams	16,000,188	50,142,306	51,340,502	52,924,991
2001	Mussels	19,081,584	47,081,456	49,377,539	49,694,277
2001	Oysters	25,288,034	32,131,862	32,263,822	33,915,044
2001	Molluscs	29,433,424	31,603,081	26,903,116	33,356,918
2001	Catfish	39,633,045	25,143,855	26,427,612	26,539,232
2001	Crustaceans	18,744,306	23,248,649	23,496,489	24,538,851
2001	Grouper	7,763,520	13,144,015	13,873,452	13,873,452
2001*	Herring and	136,130,872	10,540,424	-7,480,725	11,125,373
2001*	Squid	-134,719,497	8,990,450	-6,675,673	9,489,382
2001	Bass	1,662,309	3,916,953	4,101,187	4,134,327
2001*	Sticks	-46,483,392	1,143,057	-8,311,955	1,206,492
2001	Fresh Dogfish	2,801,399	-887,832	-1,291,996	-937,103
2001	Shark (No Do	-668,671	-2,383,679	-3,536,682	-2,515,963
2001	Frozen Dogfish	-6,375,717	-5,534,930	-6,878,493	-5,842,095
2001	All Other	-2,266,409,714	-6,097,656	-124,815,973	-6,436,050
2001	Sablefish	-23,966,168	-61,492,876	-75,880,945	-64,905,469
2001	Other Shellfish	-882,194,158	-77,467,327	-104,119,363	-81,766,435
2001	Groundfish	255,189,606	-174,782,261	-329,470,342	-184,481,934

Table 4.7. Continued

YEAR	Product Group	Weight	GNP-Fabricant	Official	Denison
2002	Shrimp	1,879,757,077	3,691,859,213	4,056,062,140	4,063,896,515
2002	Crabs	603,630,134	956,263,675	1,045,084,026	1,052,628,606
2002	Tuna	993,494,378	746,061,315	818,839,559	821,243,662
2002	Lobster	76,637,058	700,084,321	748,635,197	770,633,458
2002	Salmon	405,840,278	501,598,357	517,878,799	552,145,599
2002	Fish NSPF	520,119,248	444,004,433	470,758,584	488,747,799
2002	Tilapia	293,609,475	189,711,526	208,574,833	208,829,201
2002	Toothfish	46,078,518	123,621,810	136,060,567	136,079,469
2002	Scallops	38,923,637	119,869,993	129,108,476	131,949,573
2002	Swordfish	66,407,421	97,836,282	107,695,474	107,695,474
2002	Flatfish	8,415,468	87,973,476	87,688,296	96,838,769
2002	Snapper	36,982,509	58,238,258	64,107,064	64,107,064
2002	Mussels	22,049,764	55,865,218	61,391,643	61,494,887
2002	Squid	-50,102,551	52,618,064	53,439,814	57,920,510
2002	Clams	14,027,538	43,404,404	47,024,057	47,778,367
2002	Molluscs	30,927,150	35,503,636	36,630,401	39,081,421
2002	Oysters	27,421,978	29,768,504	32,048,807	32,768,346
2002	Crustaceans	17,110,723	22,768,754	24,630,928	25,063,214
2002	Grouper	10,031,382	16,782,010	18,473,173	18,473,173
2002	Catfish	22,183,497	14,016,860	15,396,482	15,429,372
2002	Herring and	19,212,332	7,027,222	1,644,994	7,735,372
2002	Sticks	-20,093,899	4,966,334	1,489,797	5,466,803
2002	Bass	2,198,429	3,054,312	3,345,846	3,362,102
2002	Fresh Dogfish	1,547,304	-1,188,293	-1,426,564	-1,308,040
2002	Frozen Dogfish	-3,371,201	-2,583,274	-3,064,227	-2,843,597
2002	Shark (No Do	-3,603,447	-4,622,815	-5,593,847	-5,088,667
2002	Groundfish	346,481,732	-38,518,009	-92,197,267	-42,399,559
2002	Sablefish	-20,700,668	-50,977,477	-59,537,436	-56,114,597
2002	Other Shellfish	-637,475,940	-62,212,637	-77,023,630	-68,481,950
2002	All Other	-2,280,751,875	-68,845,101	-124,201,957	-75,782,783

Table 4.7. Continued

YEAR	Product Group	Weight	GNP-Fabricant	Official	Denison
2003	Shrimp	2,168,365,217	3,981,568,360	4,348,487,013	4,347,580,598
2003	Crabs	640,175,122	1,016,361,710	1,110,757,676	1,109,792,436
2003	Tuna	1,183,708,059	821,071,237	896,964,932	896,549,564
2003	Lobster	79,308,980	739,824,317	810,470,201	807,833,888
2003	Salmon	407,559,858	599,376,979	658,739,180	654,475,697
2003	Fish NSPF	553,562,946	437,901,387	480,422,084	478,156,194
2003	Tilapia	424,387,535	256,380,842	279,997,897	279,949,074
2003	Toothfish	41,934,890	121,019,903	132,145,931	132,144,857
2003	Scallops	39,119,583	116,352,732	127,506,917	127,048,648
2003	Flatfish	15,026,707	113,893,285	125,436,589	124,363,113
2003	Squid	73,073,493	113,637,087	124,389,012	124,083,364
2003	Swordfish	57,462,634	82,328,180	89,896,334	89,896,334
2003	Molluscs	54,712,118	61,744,879	67,536,868	67,420,879
2003	Snapper	39,140,469	60,603,396	66,174,463	66,174,463
2003	Mussels	20,734,086	47,403,188	51,774,700	51,760,804
2003	Oysters	32,099,449	31,581,243	34,594,789	34,484,401
2003	Clams	15,388,932	29,546,833	32,486,119	32,262,975
2003	Sticks	26,656,926	24,426,803	27,069,198	26,672,277
2003	Crustaceans	14,223,228	17,769,545	19,449,288	19,403,040
2003	Grouper	9,798,645	16,582,528	18,106,904	18,106,904
2003	All Other	-2,027,814,351	12,819,382	19,276,097	13,997,824
2003	Herring and	12,457,474	11,644,450	13,450,441	12,714,886
2003	Catfish	7,779,165	3,241,844	3,571,843	3,539,856
2003	Bass	1,583,118	2,970,542	3,246,862	3,243,614
2003	Fresh Dogfish	-307,901	-1,140,300	-1,233,748	-1,245,124
2003	Frozen Dogfish	-3,452,567	-3,060,242	-3,315,773	-3,341,560
2003	Shark (No Do	-2,662,769	-4,440,870	-4,803,244	-4,849,105
2003	Groundfish	294,441,115	-60,887,734	-61,013,109	-66,484,939
2003	Other Shellfish	-736,385,733	-61,821,325	-66,561,508	-67,504,352
2003	Sablefish	-29,399,889	-71,694,711	-77,722,337	-78,285,366

Table 4.7. Continued

YEAR	Product Group	Weight	GNP-Fabricant	Official	Denison
2004	Shrimp	2,247,267,154	3,815,153,571	4,055,340,700	4,056,477,412
2004	Crabs	723,135,782	1,064,057,691	1,129,837,987	1,131,363,629
2004	Tuna	1,150,404,721	846,976,501	899,964,215	900,551,178
2004	Lobster	75,234,422	712,370,884	753,268,899	757,431,214
2004	Salmon	336,276,611	491,617,314	515,087,967	522,714,091
2004	Fish NSPF	345,270,583	380,724,819	400,251,019	404,807,198
2004	Tilapia	555,622,526	309,276,973	328,770,683	328,839,989
2004	Toothfish	37,658,854	111,918,471	118,992,425	118,997,765
2004	All Other	-2,319,907,733	101,630,144	99,936,618	108,058,661
2004	Flatfish	26,269,483	101,066,736	105,481,513	107,459,614
2004	Squid	21,541,089	88,095,832	92,917,099	93,668,249
2004	Scallops	27,311,976	80,127,942	84,230,538	85,196,357
2004	Swordfish	47,111,246	75,108,563	79,859,482	79,859,482
2004	Snapper	37,833,536	60,528,984	64,357,686	64,357,686
2004	Molluscs	51,747,923	58,764,245	62,247,742	62,481,320
2004	Mussels	24,751,013	57,639,659	61,271,331	61,285,599
2004	Sticks	72,231,280	43,518,780	45,611,453	46,271,519
2004	Oysters	34,578,498	29,257,046	30,855,579	31,107,672
2004	Grouper	9,756,864	17,511,437	18,619,106	18,619,106
2004	Crustaceans	14,558,080	17,232,895	18,230,413	18,322,945
2004	Clams	12,487,329	16,904,405	17,502,605	17,973,677
2004	Catfish	20,347,964	7,988,997	8,439,163	8,494,333
2004	Bass	1,993,049	6,311,947	6,703,526	6,711,203
2004	Fresh Dogfish	378,698	-808,440	-875,668	-859,577
2004	Frozen Dogfish	-2,956,907	-2,535,468	-2,728,132	-2,695,846
2004	Shark (No Do	-1,145,682	-3,239,787	-3,510,053	-3,444,716
2004	Herring and	-4,735,364	-6,437,915	-8,280,911	-6,845,139
2004	Other Shellfish	-922,181,350	-69,386,154	-75,518,542	-73,775,108
2004	Sablefish	-36,876,124	-91,776,878	-98,732,654	-97,582,136
2004	Groundfish	-19,410,971	-221,812,720	-246,847,488	-235,843,269

Table 4.7. Continued

YEAR	Product Group	Weight	GNP-Fabricant	Official	Denison
2005	Shrimp	2,216,855,380	3,688,709,061	3,776,797,778	3,776,148,567
2005	Crabs	782,172,834	1,070,990,541	1,097,474,891	1,096,377,982
2005	Tuna	1,187,030,303	900,302,594	921,960,292	921,643,940
2005	Lobster	78,348,972	728,605,034	749,060,999	745,876,351
2005	Salmon	310,959,306	518,747,144	537,424,490	531,043,857
2005	Fish NSPF	479,267,963	431,821,462	445,378,789	442,057,633
2005	Tilapia	730,412,330	395,843,515	405,283,191	405,226,842
2005	Toothfish	43,136,654	148,142,891	151,655,752	151,654,565
2005	Scallops	23,498,345	103,658,489	107,295,431	106,115,675
2005	Flatfish	-747,805	83,323,796	86,689,577	85,298,956
2005	Squid	-8,006,527	82,043,689	84,759,293	83,988,504
2005	Swordfish	44,259,790	79,052,163	80,926,066	80,926,066
2005	Snapper	44,105,833	71,896,115	73,600,386	73,600,386
2005	Molluscs	57,808,976	66,963,110	68,720,246	68,550,446
2005	Mussels	25,060,178	63,254,452	64,765,718	64,753,876
2005	Crustaceans	26,769,504	41,563,786	42,589,533	42,549,040
2005	Catfish	77,659,560	32,113,321	32,901,629	32,874,555
2005	Oysters	31,115,246	31,053,995	31,955,993	31,790,119
2005	Sticks	40,279,450	29,805,363	31,062,731	30,511,888
2005	Grouper	11,141,339	21,953,599	22,474,001	22,474,001
2005	Clams	14,646,563	19,377,207	20,151,902	19,836,537
2005	Bass	2,114,389	5,550,982	5,688,036	5,682,566
2005	Fresh Dogfish	-167,448	-1,035,551	-1,049,203	-1,060,099
2005	Shark (No Do	-994,539	-2,074,870	-2,083,054	-2,124,054
2005	Frozen Dogfish	-2,899,003	-2,441,408	-2,472,158	-2,499,280
2005	Herring and	-36,094,850	-22,758,738	-22,072,884	-23,298,225
2005	All Other	-2,496,242,505	-31,851,440	-25,757,271	-32,606,466
2005	Other Shellfish	-1,313,736,152	-67,334,656	-67,683,533	-68,930,799
2005	Sablefish	-32,254,094	-70,819,461	-71,838,790	-72,498,211
2005	Groundfish	232,201,100	-159,289,040	-155,368,020	-163,064,929

Table 4.7. Continued

YEAR	Product Group	Weight	GNP-Fabricant	Official	Denison
2006	Shrimp	2,560,334,898	4,074,063,529	4,074,063,529	4,074,063,529
2006	Crabs	787,666,117	1,066,099,417	1,066,099,417	1,066,099,417
2006	Salmon	391,802,466	930,992,927	930,992,927	930,992,927
2006	Tuna	1,132,720,287	896,028,300	896,028,300	896,028,300
2006	Lobster	83,785,979	733,851,647	733,851,647	733,851,647
2006	Fish NSPF	480,984,220	478,110,822	478,110,822	478,110,822
2006	Tilapia	891,249,408	472,295,531	472,295,531	472,295,531
2006	Toothfish	45,064,188	153,896,265	153,896,265	153,896,265
2006	Squid	15,369,184	124,521,159	124,521,159	124,521,159
2006	Catfish	201,215,807	108,797,607	108,797,607	108,797,607
2006	Scallops	29,989,522	84,535,367	84,535,367	84,535,367
2006	Swordfish	44,319,802	75,618,008	75,618,008	75,618,008
2006	Snapper	41,795,102	73,301,769	73,301,769	73,301,769
2006	Molluscs	63,246,385	67,604,895	67,604,895	67,604,895
2006	Mussels	23,918,891	58,724,989	58,724,989	58,724,989
2006	All Other	-2,174,931,833	39,585,999	39,585,999	39,585,999
2006	Oysters	32,022,920	38,076,877	38,076,877	38,076,877
2006	Sticks	66,197,062	36,183,366	36,183,366	36,183,366
2006	Flatfish	-76,886,822	33,412,488	33,412,488	33,412,488
2006	Crustaceans	22,819,406	29,820,758	29,820,758	29,820,758
2006	Grouper	12,021,436	26,473,376	26,473,376	26,473,376
2006	Herring and	-56,435,789	21,855,591	21,855,591	21,855,591
2006	Clams	14,257,533	20,204,244	20,204,244	20,204,244
2006	Bass	1,381,315	4,583,892	4,583,892	4,583,892
2006	Fresh Dogfish	1,886,934	-1,594,504	-1,594,504	-1,594,504
2006	Shark (No Do	-3,607,551	-1,771,692	-1,771,692	-1,771,692
2006	Frozen Dogfish	-3,124,055	-2,617,881	-2,617,881	-2,617,881
2006	Other Shellfish	-699,353,535	-47,157,134	-47,157,134	-47,157,134
2006	Sablefish	-25,650,827	-75,847,446	-75,847,446	-75,847,446
2006	Groundfish	38,734,721	-233,891,269	-233,891,269	-233,891,269



Figure 4.7. Trade Balance for Shrimp

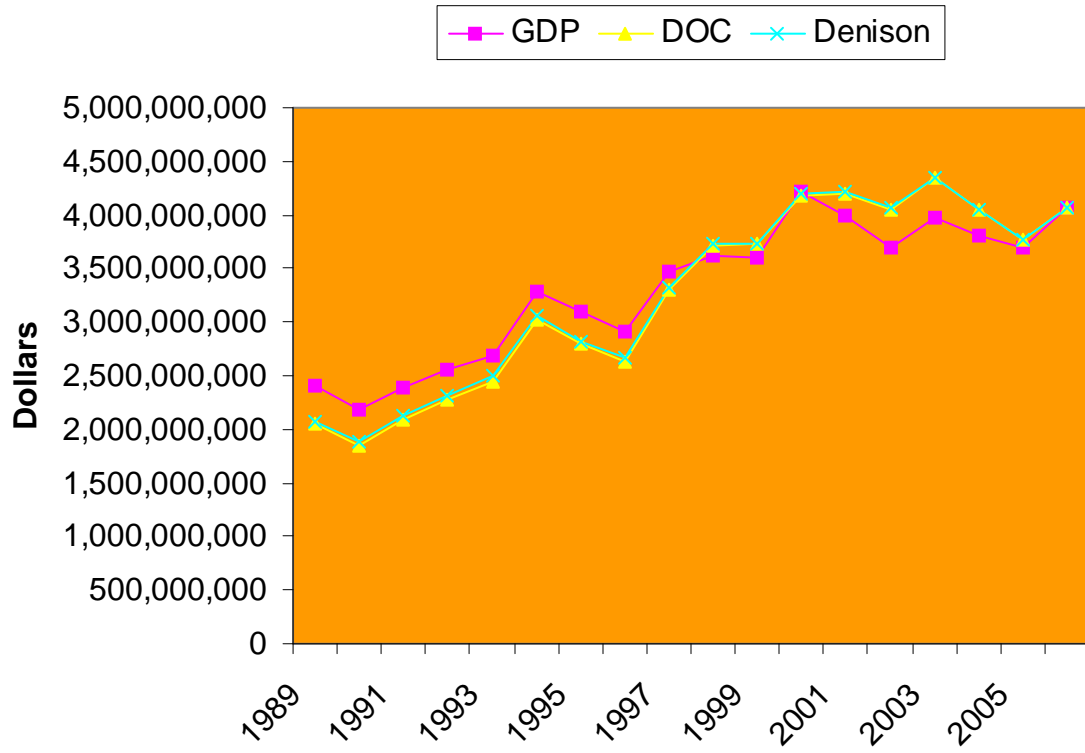


Figure 4.8. Trade Balance for Crabs

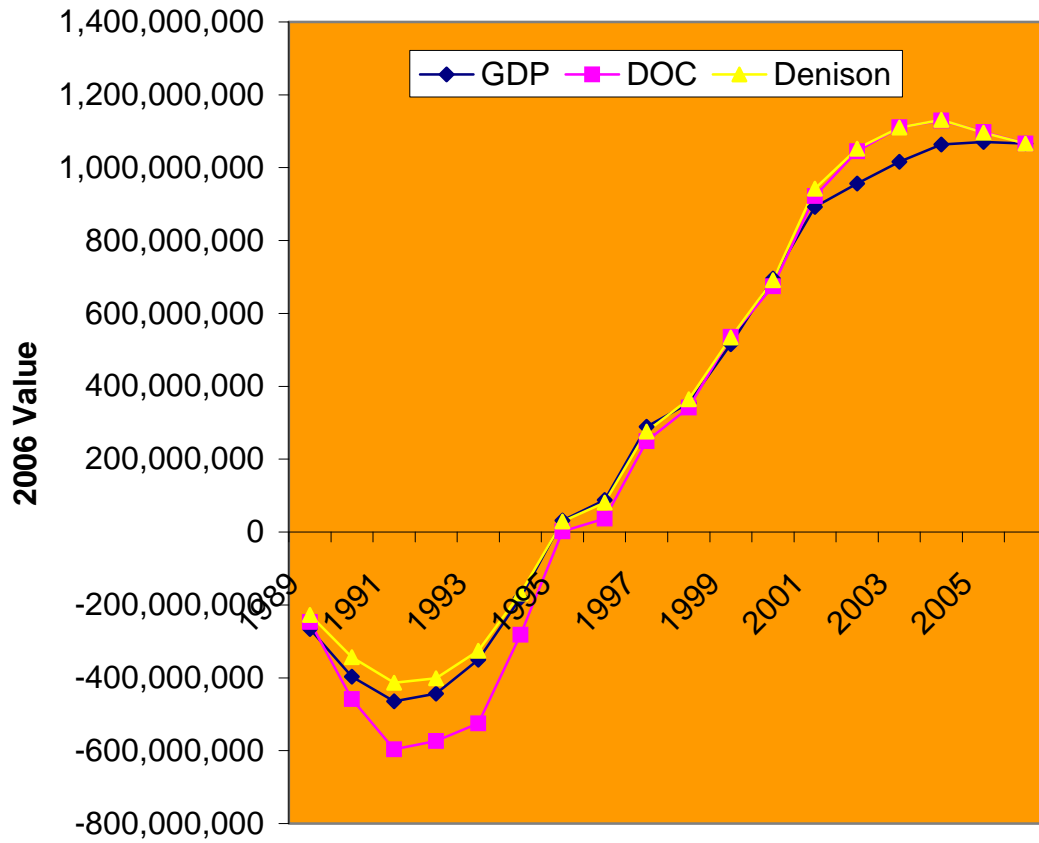


Figure 4.9. Trade Balance for Salmon

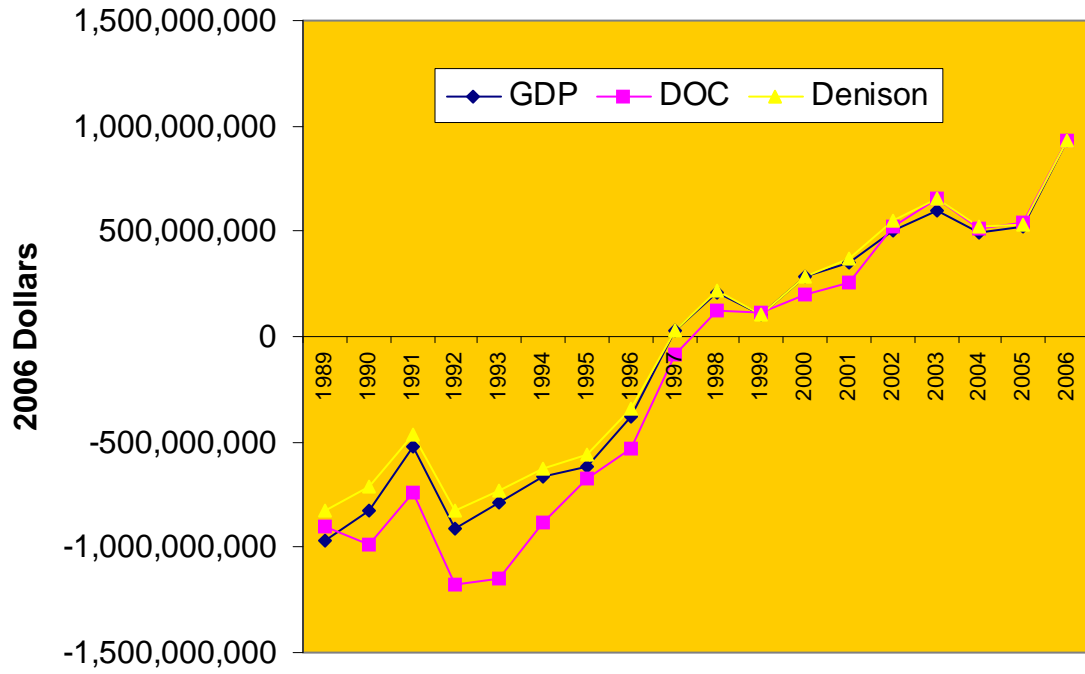


Figure 4.10. Trade Balance for Tuna

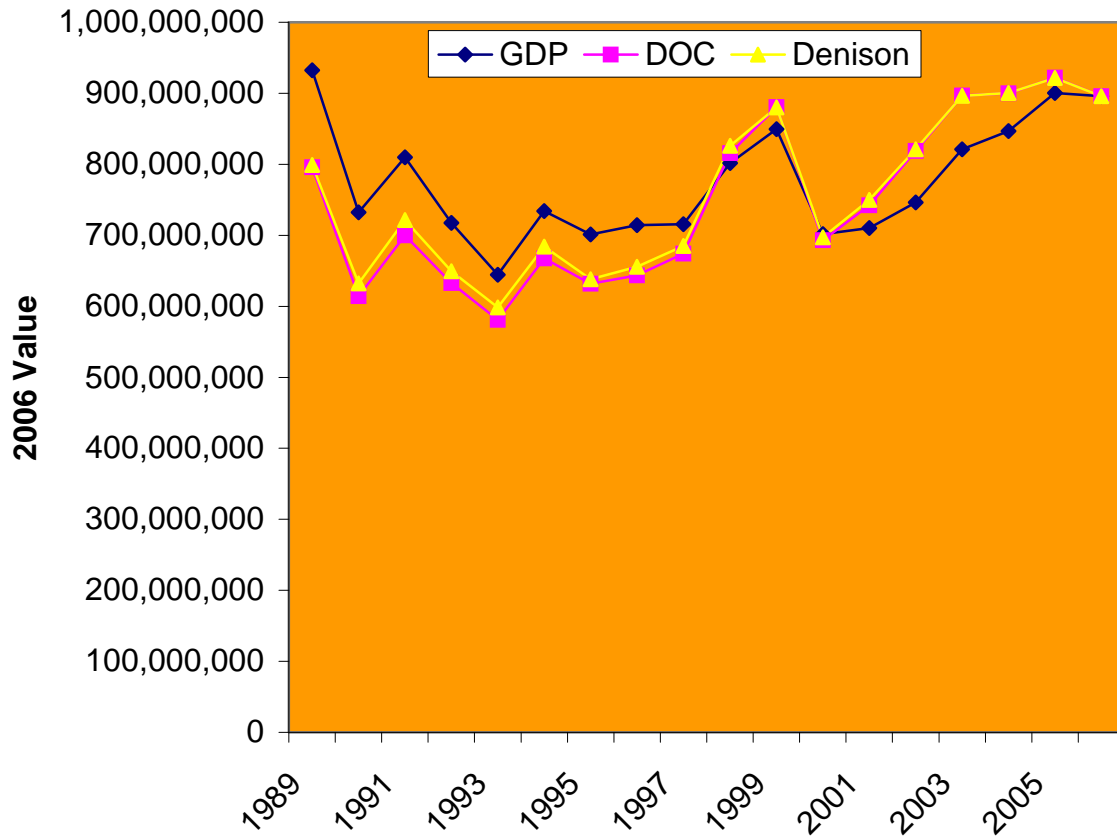
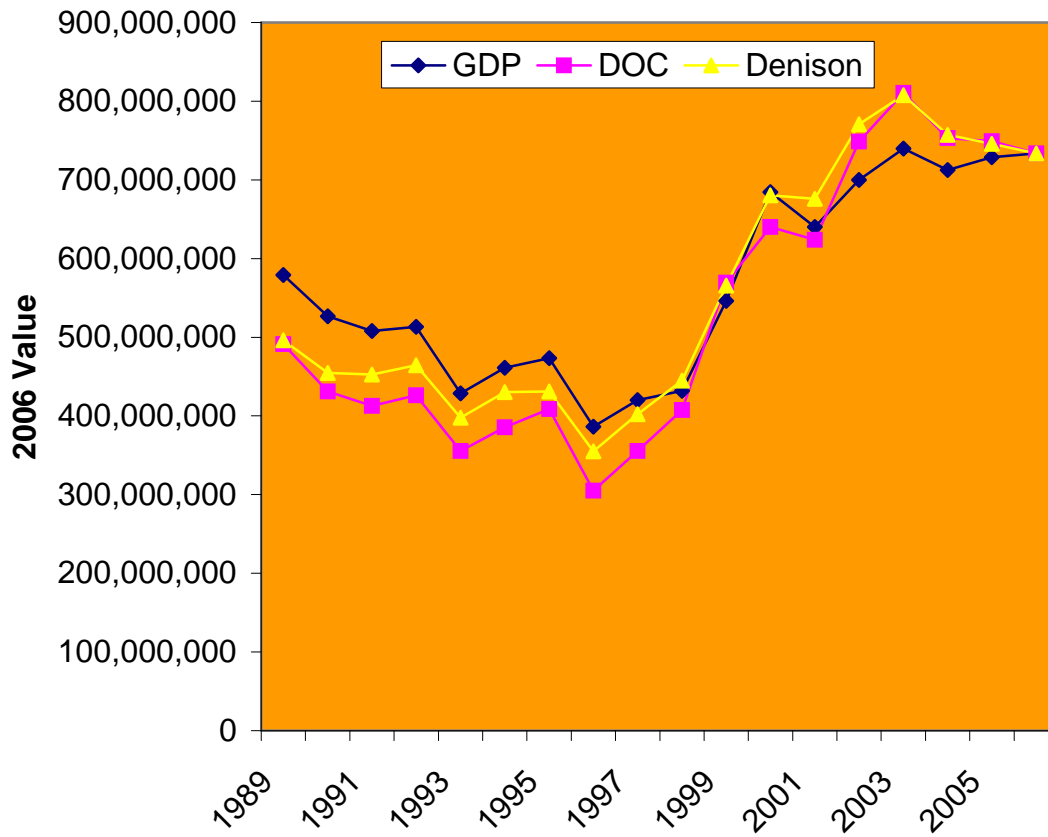


Figure 4.11. Trade Balance for Lobsters



## 4.8 Trends in Trade in Edible Seafood

Trade statistics on seafood imports and exports can be further disaggregated into edible and non-edible products. In this section, we examine the trade trends corresponding to imports and exports of edible products; we discuss the trade trends corresponding to non-edible products in the next section. For both products, we examine only general trends in the broad aggregate categories of total edible and non-edible product.

The United States imported 508 different edible products between 1989 and 2006, and it exported 242 different products (Tables 4.8 and 4.9). In terms of our broad product groupings of imports and exports, we import up to 30 out of the 30 product groups and export up to 27 out of the 30 product groups. Our top 10 edible export products are salmon, all other species, groundfish, various fish with no specific product form, crabs, lobster, flatfish, shrimp, herring and sardines, and sablefish. Our top 10 edible import products are shrimp, tuna, groundfish, lobster, salmon, various fish with no specific product form, crabs, all other products, flatfish, and scallops.

What has been the trend in the quantity and value of imports and exports of edible products? Between 1989 and 2006, the quantity of exports of edible product substantially increased; exports rose approximately 4.0 billion pounds, while the value only modestly increased from \$3.4 to \$3.9 billion. In contrast, the volume of imports of edible product increased from 6.0 to 10.7 billion pounds, while the value of edible imports nearly doubled—from \$7.9 to \$13.1 billion between 1989 and 2006. The value of imports of edible product has consistently been higher than the value of the exports of edible product, which implies that the U.S. has consistently maintained a deficit in the balance of trade between 1989 and 2006. In 1989, the deficit was \$4.6 million, and in 2006, the deficit equaled \$9.2 billion.

Table 4.8. Imports (Mean, 1989-2006) of Edible Seafood Products, by Product Form

PRODUCT NAME	LIVE WEIGHT (LBS)	Constant Dollar Value
LOBSTER (HOMARUS SPP.) LIVE	4,340,600	24,429,274
SALMON ATLANTIC FILLET FRESH FARMED	9,410,000	12,975,816
LOBSTER NSPF MEAT COOKED FROZEN	3,752,100	11,338,919
CRAB KING FROZEN	2,971,300	11,196,377
TUNA NSPF NOT IN ATC NOT IN OIL > 6.8KG	17,765,000	11,043,421
CRAB SNOW FROZEN	4,404,500	10,728,977
SHRIMP FROZEN OTHER PREPARATIONS	6,771,700	9,848,928
GROUNDFISH COD ATLANTIC FILLET FROZEN	9,745,100	9,613,771
LOBSTER (HOMARUS SPP.) LIVE/FRESH/DRIED/SALTED/BRINE	1,776,700	9,354,796
SHRIMP SHELL-ON FROZEN	2,844,900	9,323,046
FLATFISH HALIBUT PACIFIC FRESH	3,397,400	8,880,812
SALMON ATLANTIC FRESH FARMED	3,943,700	8,607,024
SHRIMP PEELED FROZEN	3,697,300	7,514,398
SALMON CHINOOK FRESH	2,396,000	7,162,972
SALMON CHINOOK FRESH FARMED	2,736,700	6,487,176
GROUNDFISH HADDOCK FRESH	6,765,900	6,369,679
CRABMEAT SWIMMING (CALLINECTES) IN ATC	5,872,900	5,797,225
TUNA ALBACORE FROZEN	4,288,000	5,748,766
GROUNDFISH COD ATLANTIC FILLET BLOCKS FROZEN > 4.5KG	7,207,100	5,231,456
LOBSTER (HOMARUS SPP.) FROZEN	411,406	5,107,640
PICKEREL FILLET FROZEN	1,886,700	4,545,416
GROUNDFISH POLLOCK ALASKA FILLET BLOCKS FROZEN > 4.5KG	16,078,000	4,470,068
SALMON ATLANTIC FILLET FROZEN	3,066,600	4,416,705
CRAWFISH FRESHWATER PEELED	8,290,600	4,396,510
TUNA NSPF IN ATC (OTHER) NOT IN OIL OVER QUOTA	7,612,700	4,202,199
SALMON ATLANTIC FILLET FRESH	2,836,600	4,170,813
ORANGE ROUGHY FILLET FROZEN	2,520,200	4,136,201
SCALLOPS LIVE/FRESH	637,357	3,923,090
GROUNDFISH HADDOCK FILLET FROZEN	3,309,200	3,577,063
GROUNDFISH CUSK HADDOCK HAKE POLLOCK FILLET FROZEN	4,142,100	3,550,728
LOBSTER ROCK FROZEN	259,801	3,433,822
SHRIMP SHELL-ON FROZEN 31/40	1,218,400	3,390,025
GROUNDFISH OCEAN PERCH ATLANTIC FILLET FROZEN	5,989,000	3,349,071
TUNA NSPF IN ATC (FOIL OR FLEXIBLE) NOT IN OIL OVER QUOTA	4,039,900	3,203,692
SCALLOPS FROZEN/DRIED/SALTED/BRINE	767,287	3,096,020
TILAPIA FILLET FRESH	3,767,700	3,049,296
SALMON ATLANTIC FRESH	909,189	3,043,160
GROUNDFISH COD NSPF FILLET FROZEN	3,691,900	2,973,713
SHRIMP SHELL-ON FROZEN 15/20	755,111	2,971,680
SHRIMP SHELL-ON FROZEN < 15	660,090	2,920,219
GROUNDFISH COD NSPF SALTED WHOLE/DRESSED	4,504,300	2,844,763
LOBSTER (HOMARUS SPP.) FROZEN IN BRINE	220,346	2,814,879
SALMON ATLANTIC DANUBE FRESH	815,110	2,809,153

Table 4.8. Continued

PRODUCT NAME	LIVE WEIGHT (LBS)	Constant Dollar Value
SHRIMP SHELL-ON FROZEN 26/30	844,420	2,666,247
GROUND FISH POLLOCK ALASKA FILLET FROZEN	8,105,000	2,642,244
SHRIMP SHELL-ON FROZEN 21/25	731,840	2,634,333
CRABMEAT SNOW (OPILIO) FROZEN	1,556,900	2,314,517
SALMON COHO FRESH	840,878	2,313,848
YELLOW PERCH FILLET FRESH	801,726	2,263,930
TUNA NSPF IN ATC (OTHER) NOT IN OIL IN QUOTA	3,673,600	2,257,249
PIKE PICKEREL PIKE PERCH YELLOW PIKE FILLET FROZEN	1,265,400	2,219,283
TILAPIA FILLET FROZEN	4,680,800	2,184,758
CATFISH (PANGASIU SPP.) FILLET FROZEN	4,752,400	2,179,028
SALMON SOCKEYE FRESH	1,008,400	2,169,502
MARINE FISH NSPF FILLET FROZEN	3,100,200	2,159,447
GROUND FISH COD NSPF FILLET BLOCKS FROZEN > 4.5KG	3,655,800	2,147,856
GROUND FISH OCEAN PERCH ATLANTIC FILLET FRESH	3,445,400	2,141,936
SHRIMP SHELL-ON FROZEN 41/50	856,727	2,090,545
TUNA SKIPJACK FROZEN	4,158,400	2,025,591
GROUND FISH HADDOCK FILLET FRESH	1,556,000	2,023,084
SHRIMP BREADED FROZEN	804,169	2,005,058
TUNA ALBACORE IN ATC (OTHER) NOT IN OIL OVER QUOTA	1,950,000	1,993,462
TUNA ALBACORE IN ATC (FOIL OR FLEXIBLE) NOT IN OIL OVER QUOTA	1,574,000	1,953,340
CRABMEAT NSPF IN ATC	2,840,500	1,951,694
GROUND FISH CUSK HADDOCK HAKE POLLOCK SALTED WHOLE/DRESS	3,391,700	1,928,200
WHITEFISH FRESH	1,869,500	1,911,152
OYSTERS CANNED SMOKED	1,655,300	1,874,006
SALMON CHUM FRESH	2,169,300	1,816,493
TILAPIA FROZEN	3,072,600	1,816,318
FLATFISH SOLE FILLET FROZEN	2,339,900	1,805,167
FLATFISH HALIBUT PACIFIC FROZEN	912,063	1,760,880
GROUND FISH COD NSPF SALTED MOISTURE CONTENT BET 45-50%	1,930,200	1,739,781
CLAM NSPF LIVE/FRESH	276,374	1,736,431
CRABMEAT SWIMMING (PORTUNIDAE) IN ATC	2,358,400	1,733,374
FLATFISH HALIBUT GREENLAND TURBOT FRESH	691,101	1,728,667
SWORDFISH FILLET FROZEN	1,912,900	1,727,953
GROUND FISH CUSK HADDOCK HAKE POLLOCK FILLET FRESH	1,816,400	1,713,976
GROUND FISH HADDOCK FROZEN	1,904,300	1,698,458
YELLOW PERCH FILLET FROZEN	582,635	1,695,026
SHRIMP SHELL-ON FROZEN 51/60	785,963	1,677,875
GROUND FISH COD ATLANTIC FILLET FRESH	1,599,500	1,662,642
MUSSELS LIVE/FRESH FARMED	871,293	1,646,157
PICKEREL FILLET FRESH	731,443	1,632,858
TOOTHFISH PATAGONIAN FROZEN	565,255	1,588,816
FLATFISH FLOUNDER FILLET FROZEN	1,642,300	1,570,633
GROUND FISH COD ATLANTIC FRESH	1,866,000	1,537,854



Table 4.8. Continued

PRODUCT NAME	LIVE WEIGHT (LBS)	Constant Dollar Value
GROUND FISH HADDOCK FILLET BLOCKS FROZEN > 4.5KG	2,387,100	1,523,250
SALMON CHINOOK FROZEN	609,578	1,502,177
PIKE PICKEREL PIKE PERCH YELLOW PIKE FRESH	746,199	1,474,869
PICKEREL FRESH	690,733	1,449,655
SALMON CHINOOK FRESH WILD	523,128	1,397,316
TOOTHFISH PATAGONIAN FILLET FROZEN	512,199	1,386,186
GROUND FISH POLLOCK ATLANTIC FRESH	2,219,300	1,326,173
ABALONE PREPARED/PRESERVED	75,092	1,317,117
SEA URCHIN LIVE/FRESH	548,383	1,310,631
GROUND FISH POLLOCK NSPF FILLET BLOCKS FROZEN > 4.5KG	4,566,200	1,290,305
GROUND FISH POLLOCK NSPF FILLET FROZEN	3,013,600	1,248,216
SHRIMP SHELL-ON FROZEN > 70	648,930	1,239,946
FISH NSPF MEAT/MINCED FROZEN > 6.8KG	4,544,100	1,228,968
CATFISH (ICTALURUS SPP.) FILLET FROZEN	1,406,000	1,147,267
CRAB NSPF FROZEN	498,586	1,137,095
PIKE PICKEREL PIKE PERCH YELLOW PIKE FILLET FRESH	643,372	1,102,221
TUNA YELLOWFIN FROZEN WHOLE	1,705,900	1,090,754
FLATFISH NSPF FILLET FROZEN	1,195,000	1,089,743
MARINE FISH NSPF FRESH	875,207	1,084,952
DOLPHIN FILLET FROZEN	1,780,800	1,081,502
LOBSTER NSPF MEAT COOKED IN ATC	406,131	1,057,942
SALMON CHUM FROZEN	1,303,100	1,042,074
CRABMEAT SNOW OTHER FROZEN	907,410	1,041,770
TOOTHFISH PATAGONIAN FRESH	316,847	1,041,346
TUNA ALBACORE IN ATC (OTHER) NOT IN OIL IN QUOTA	953,893	1,027,212
SHRIMP SHELL-ON FROZEN 61/70	544,799	1,019,268
FLATFISH HALIBUT ATLANTIC FRESH	306,247	1,013,795
SWORDFISH FRESH	426,597	1,008,143
FLATFISH TURBOT GREENLAND FILLET FROZEN	985,130	999,377
SALMONIDAE NSPF FILLET FROZEN	1,090,000	995,719
CRABMEAT NSPF OTHER PREPARATIONS	835,976	989,359
SALMON NSPF FRESH	419,384	983,343
CRABMEAT NSPF FROZEN	1,301,200	965,173
GROUND FISH COD NSPF FILLET DRIED/SALTED/BRINE > 6.8KG	1,198,200	953,095
GROUND FISH COD NSPF DRIED	1,334,800	905,880
LOBSTER (HOMARUS SPP.) FROZEN IN ATC IN BRINE	195,563	884,232
STICKS TYPE PRODUCTS COATED COOKED OR IN OIL NOT MINCED	1,478,600	883,578
FISH NSPF FILLET DRIED/SALTED/BRINE	560,840	868,313
CRABMEAT NSPF FRESH/DRIED/SALTED/BRINE	585,901	867,507
SALMON ATLANTIC DANUBE FROZEN	391,314	866,135
GROUND FISH HAKE FRESH	2,369,400	857,497
FLATFISH HALIBUT GREENLAND TURBOT FROZEN	419,617	853,766
MARINE FISH NSPF FILLET FRESH	801,452	851,561

Table 4.8. Continued

PRODUCT NAME	LIVE WEIGHT (LBS)	Constant Dollar Value
MUSSELS FROZEN/DRIED/SALTED/BRINE	301,408	848,885
HERRING KIPPERED	677,753	847,489
OYSTERS CANNED	389,631	842,118
CRAB NSPF LIVE/FRESH/SALTED/BRINE	445,035	837,821
SEA URCHIN ROE FRESH	863,242	837,107
GROUNDFISH COD NSPF FILLET SALTED MOISTURE CONTENT BET 43-45%	982,736	833,780
FLATFISH HALIBUT NSPF FILLET FROZEN	419,241	822,884
TUNA YELLOWFIN FRESH	274,498	808,365
TOOTHFISH ANTARCTIC FROZEN	259,248	783,055
SALMON PINK CANNED NOT IN OIL	712,936	773,848
GROUNDFISH CUSK HAKE FILLET FROZEN	1,004,600	771,223
SALMON SOCKEYE FROZEN	263,425	767,255
SQUID NSPF FROZEN/DRIED/SALTED/BRINE	682,792	766,608
LOBSTER (HOMARUS SPP.) FROZEN IN ATC	75,728	766,352
SNAPPER (LUTJANIDAE SPP.) FRESH	442,902	745,696
SHRIMP CANNED	865,571	742,443
CRAWFISH FRESHWATER FROZEN	2,290,200	718,487
GROUNDFISH WHITING FILLET BLOCKS FROZEN > 4.5KG	2,424,500	712,123
ANCHOVY CANNED IN OIL IN QUOTA	342,939	711,721
FLATFISH TURBOT NSPF FILLET FROZEN	665,817	710,165
SALMON COHO FRESH FARMED	349,244	695,821
FISH NSPF PREPARED DINNERS CONTAINING SHELLFISH	623,837	686,717
SURIMI NSPF	3,688,700	678,952
CRUSTACEANS NSPF PREPARED/PRESERVED	469,281	675,233
SQUID (LOLIGO NSPF) FROZEN/DRIED/SALTED/BRINE	518,189	672,574
GROUNDFISH CUSK HADDOCK HAKE POLLOCK SALTED PROCESSED	941,522	646,335
FROG LEGS FRESH/FROZEN	690,829	644,737
CRUSTACEANS NSPF FROZEN	294,610	644,687
SAUGER FILLET FROZEN	297,844	644,585
SALMON NSPF FILLET FRESH	441,946	622,519
GROUNDFISH CUSK HAKE POLLOCK FILLET FRESH	934,200	617,034
OYSTERS LIVE/FRESH/FROZEN/DRIED/SALTED/BRINE FARMED	235,735	614,232
OCTOPUS FROZEN/DRIED/SALTED/BRINE	405,963	612,624
ANCHOVY CANNED IN OIL	335,968	611,137
SALMON ATLANTIC FILLET FRESH WILD	341,227	610,965
SARDINE CANNED IN OIL SMOKED NOT SKIN/BONE VALUE > \$1/KG	441,300	606,772
TUNA YELLOWFIN FROZEN OTHER PREPARATIONS	250,494	599,469
TUNA BIGEYE FRESH	177,848	599,066
TUNA NSPF FRESH	245,152	588,282
CATFISH NSPF FILLET FROZEN	890,181	586,525
SURIMI ALASKA POLLOCK	4,572,000	569,097
PIKE PERCH YELLOW PIKE FRESH	250,992	568,913
MOLLUSCS NSPF PREPARED/PRESERVED	377,090	566,744

Table 4.8. Continued

PRODUCT NAME	LIVE WEIGHT (LBS)	Constant Dollar Value
FLATFISH FLOUNDER FILLET FRESH	497,542	564,653
CRABMEAT SWIMMING (PORTUNIDAE) FROZEN	1,669,200	557,571
MUSSELS LIVE/FRESH	174,107	556,796
SALMON SMOKED	146,324	554,504
MARINE FISH NSPF FROZEN	554,270	554,065
FISH BALLS CAKES PUDDING IN ATC NOT IN OIL NOT > 6.8KG	187,469	553,585
SABLEFISH FROZEN	163,057	544,176
SALMON SOCKEYE CANNED NOT IN OIL	161,745	534,522
CRABMEAT SWIMMING (CALLINECTES) FROZEN	782,585	530,667
GROUND FISH COD NSPF FILLET FRESH	652,746	524,995
STICKS TYPE PRODUCTS NOT COATED NOT MINCED NOT > 7KG	709,072	519,406
FLATFISH FLOUNDER FRESH	823,688	517,578
FLATFISH SOLE FILLET FRESH	448,682	516,414
GROUND FISH COD NSPF MEAT FROZEN > 6.8KG	1,162,100	516,158
GROUND FISH COD NSPF MINCED FROZEN > 6.8KG	2,229,500	510,587
CLAM GEODUCK LIVE/FRESH	50,835	507,202
OYSTERS LIVE/FRESH/FROZEN/DRIED/SALTED/BRINE	139,284	502,033
GROUND FISH OCEAN PERCH NSPF FILLET FROZEN	1,001,300	500,130
LOBSTER NSPF MEAT COOKED CHILLED	168,750	498,552
PIKE PERCH YELLOW PIKE FILLET FROZEN	306,367	481,691
SALMON NSPF CANNED NOT IN OIL	289,200	479,012
GROUND FISH POLLOCK NSPF SALTED WHOLE/DRESSED	870,346	474,557
GROUND FISH POLLOCK NSPF MINCED FROZEN > 6.8KG	1,894,700	469,354
GROUND FISH HAKE SALTED WHOLE/DRESSED	872,302	468,388
GROUPEL FRESH	291,960	468,181
SHRIMP PEELED FRESH/DRIED/SALTED/BRINE	127,284	465,098
CRB PRODUCTS PREPARED DINNERS CONTAINING FISH IN ATC	260,021	457,952
LOBSTER ROCK LIVE/FRESH/DRIED/SALTED/BRINE	49,499	456,225
FLATFISH TURBOT GREENLAND FILLET FRESH	369,458	451,792
TUNA YELLOWFIN FROZEN EVISCERATED HEAD-ON	145,598	450,439
SHRIMP SHELL-ON FRESH/DRIED/SALTED/BRINE	258,574	445,684
GROUND FISH POLLOCK NSPF FILLET SALTED	786,628	442,859
OYSTERS LIVE/FRESH/FROZEN/DRIED/SALTED/BRINE WILD	89,563	441,824
HERRING FRESH	2,200,200	438,747
SAUCES DERIVED OR PREPARED FROM FISH	381,302	437,773
FISH NSPF MINCED FROZEN > 6.8KG	2,448,500	435,911
STICKS TYPE PRODUCTS NOT COATED COOKED/FROZEN OF MINCED	554,095	435,240
FLATFISH SOLE NSPF FRESH	330,480	429,505
PERCH NSPF FILLET FROZEN	457,206	427,867
LOBSTER NSPF MEAT COOKED OTHER PREPARATIONS	331,435	427,101
STICKS TYPE PRODUCTS COATED COOKED/FROZEN OF MINCED	1,024,600	424,600
FLATFISH SOLE FILLET BLOCKS FROZEN > 4.5KG	803,815	423,491
CATFISH (ICTALURUS SPP.) FILLET FRESH	537,777	423,158

Table 4.8. Continued

PRODUCT NAME	LIVE WEIGHT (LBS)	Constant Dollar Value
FRESHWATER FISH NSPF FILLET FROZEN	518,714	418,940
SARDINE CANNED NOT IN OIL NOT > 225 GR	481,494	415,490
SHRIMP FROZEN IN ATC	408,935	411,480
SHRMP PRODUCTS PREPARED DINNERS CONTAINING FISH NOT IN ATC	306,907	406,028
CAVIAR	4,042	405,399
SALMON COHO FRESH WILD	227,288	399,037
FISH NSPF IN ATC NOT IN OIL	264,410	393,358
FLATFISH NSPF FILLET FRESH	271,102	390,530
SALMON PINK FROZEN	441,161	387,928
FLATFISH NSPF FRESH	618,948	387,870
HERRING FILLET DRIED/SALTED/BRINE > 6.8KG	1,529,900	386,172
CRABMEAT SNOW (OPILIO) IN ATC	360,484	385,203
LINGCOD FRESH	487,797	384,249
SWORDFISH STEAKS FROZEN	153,996	374,371
FLATFISH SOLE NSPF FROZEN	149,581	366,285
CRABMEAT KING FROZEN	282,945	364,700
CONCH LIVE/FRESH	400,485	364,529
TUNA BLUEFIN FRESH	54,156	361,883
SALMON COHO FROZEN	193,385	361,723
SQUID NSPF FILLET FROZEN	227,862	361,256
PERCH NSPF FRESH	190,846	357,780
SHRIMP OTHER PREPARATIONS	317,450	354,977
WHITEFISH MEAT FROZEN > 6.8KG	1,019,100	353,969
SALMON CHUM CANNED NOT IN OIL	253,543	352,400
ABALONE FROZEN/DRIED/SALTED/BRINE	24,849	351,055
FRESHWATER FISH NSPF FROZEN	399,541	350,885
CATFISH (PANGASIUS SPP.) FROZEN	391,722	350,400
SHRMP PRODUCTS PREPARED DINNERS CONTAINING FISH	437,312	348,884
CLAM NSPF BOILED CANNED WHETHER OR NOT MINCED/CHOP NOT >0.68KG	281,153	347,479
WHITEFISH FILLET FRESH	395,053	347,064
SEA BASS FROZEN	139,218	345,266
TUNA BLUEFIN SOUTHERN FRESH	118,307	341,271
FRESHWATER FISH NSPF FILLET FRESH	360,463	340,124
CATFISH (SILURIFORMES OTHER) FILLET FROZEN	623,054	325,354
TUNA NSPF NOT IN ATC NOT IN OIL NOT > 6.8KG	431,462	322,433
MOLLUSCS NSPF FROZEN/DRIED/SALTED/BRINE	323,396	321,877
FISH NSPF FILLET BLOCKS FROZEN > 4.5KG	570,336	318,730
TROUT FILLET FROZEN	481,794	318,245
PIKE FILLET FROZEN	324,062	316,743
GROUNDFISH CUSK POLLOCK FILLET FRESH	454,113	308,760
TUNA NSPF IN ATC (FOIL OR FLEXIBLE) IN OIL	278,630	305,964
STICKS TYPE PRODUCTS COATED NOT COOK NOT IN OIL NOT MINCED	456,570	305,561
TUNA BLUEFIN SOUTHERN FROZEN	74,006	303,729

Table 4.8. Continued

PRODUCT NAME	LIVE WEIGHT (LBS)	Constant Dollar Value
SMELTS NSPF FROZEN	394,941	303,580
CATFISH (PANGASIU SPP.) FILLET FRESH	612,444	301,486
SALMON PINK FRESH	381,688	300,541
GROUND FISH COD NSPF FILLET SALTED MOISTURE > 50%	319,445	298,562
GROUND FISH COD NSPF SALTED MOISTURE CONTENT NOT > 43%	303,914	296,920
CRAB DUNGENESS FROZEN	182,941	293,805
GROUND FISH COD NSPF FILLET SALTED MOISTURE CONTENT BET 45-50%	354,335	293,227
STICKS TYPE PRODUCTS NOT COATED OF MINCED	380,107	292,398
HERRING SMOKED FILLET BONELESS	340,510	291,012
MULLET ROE FROZEN	39,818	286,720
GROUND FISH HADDOCK MEAT FROZEN > 6.8KG	586,268	279,926
HERRING FROZEN	697,452	279,925
PIKE MEAT FROZEN > 6.8KG	703,627	278,307
GROUND FISH HAKE (UROPHYCIS SPP.) FILLET FROZEN	544,773	277,358
MACKEREL PREPARED/PRESERVED	848,614	275,133
FISH NSPF DRIED	478,939	271,840
HERRING PREPARED/PRESERVED	382,734	270,346
SALMON CHINOOK STEAKS FROZEN	78,582	268,332
FRESHWATER FISH NSPF MEAT FROZEN > 6.8KG	953,918	266,709
GROUND FISH COD NSPF SALTED MOISTURE CONTENT > 50%	374,397	263,357
MARINE FISH NSPF MEAT FROZEN > 6.8KG	593,023	263,024
PIKE FILLET FRESH	129,042	260,582
GROUND FISH CUSK HAKE POLLOCK FRESH	1,870,300	257,331
WOLFFISH FILLET FROZEN	312,101	252,983
LOBSTER (HOMARUS SPP.) FRESH/DRIED/SALTED/BRINE	36,422	249,804
GROUND FISH COD NSPF SALTED PROCESSED	288,902	249,333
GROUND FISH COD NSPF FRESH	376,679	248,566
SHARK DOGFISH FRESH	570,926	244,124
FLATFISH TURBOT NSPF FILLET BLOCKS FROZEN > 4.5KG	352,216	241,993
CLAM NSPF FROZEN/DRIED/SALTED/BRINE	39,562	240,320
CUTTLEFISH FROZEN/DRIED/SALTED/BRINE	128,211	239,130
EELS FROZEN	74,728	238,979
SARDINE CANNED IN OIL SKINNED/BONE	155,021	238,745
SARDINE CANNED IN TOMATO SAUCE BET 225 GR - 7KG	487,881	238,587
HERRING SALTED > 6.8KG	981,630	238,528
CLAM NSPF BOILED CANNED WHETHER OR NOT MINCED/CHOP > 0.68KG	148,725	237,851
CAVIAR SUBSTITUTE OTHER PREPARATIONS	43,331	237,267
SQUID (LOLIGO OPALESCENS) FROZEN/DRIED/SALTED/BRINE	158,369	237,086
SWORDFISH FROZEN	104,183	235,770
SALMON NSPF PREPARED/PRESERVED	89,812	235,418
SALMON ATLANTIC FRESH WILD	111,971	234,814
FLATFISH NSPF FROZEN	118,247	225,855
CRABMEAT SNOW OTHER IN ATC	314,799	224,746

Table 4.8. Continued

PRODUCT NAME	LIVE WEIGHT (LBS)	Constant Dollar Value
WHITEFISH FROZEN	251,164	223,958
SARDINE CANNED NOT IN OIL > 225 GR	559,098	222,647
MACKEREL FROZEN	254,207	221,887
GROUNDFISH POLLOCK NSPF MEAT FROZEN > 6.8KG	805,953	220,722
SALMON SOCKEYE CANNED IN OIL	54,661	219,536
PERCH NSPF FILLET FRESH	204,348	218,766
GROUNDFISH CUSK HADDOCK SALTED WHOLE/DRESSED	315,018	217,417
ANCHOVY CANNED IN OIL > QUOTA	104,518	217,253
GROUNDFISH OCEAN PERCH NSPF FRESH	493,629	216,318
FLATFISH NSPF FILLET BLOCKS FROZEN > 4.5KG	360,680	215,867
TROUT NSPF FRESH	134,561	213,837
SARDINE CANNED IN OIL NOT SKINNED/BONE	224,876	213,720
SMELTS NSPF FRESH	201,613	213,582
CRAB NSPF OTHER PREPARATIONS	294,993	212,516
CRAB NSPF OTHER PREPARATIONS IN ATC	253,339	210,011
FLATFISH FLOUNDER FILLET BLOCKS FROZEN > 4.5KG	372,669	209,449
FRESHWATER FISH NSPF FRESH	157,170	208,588
GROUNDFISH POLLOCK ATLANTIC FROZEN	308,715	207,588
FISH NSPF LIVER & ROE FROZEN	57,914	207,291
CAPELIN FROZEN	745,129	203,313
CLAM NSPF PREPARED/PRESERVED	49,108	202,680
STICKS TYPE PRODUCTS NOT COATED NOT COOKED OF MINCED	430,809	202,434
SOUPS BROTHS BASED ON FISH OR OTHER SEAFOOD	41,120	199,776
HERRING ROE CURED	30,783	198,249
GROUNDFISH OCEAN PERCH ATLANTIC FILLET BLOCKS FROZEN > 4.5KG	403,843	196,354
TUNA ALBACORE FRESH	108,278	196,131
SQUID NSPF PREPARED/PRESERVED	96,501	196,008
BASS FRESH	103,998	194,606
SNAPPER (LUTJANIDAE SPP.) FROZEN	135,076	193,329
TUNA SKIPJACK FRESH	359,552	190,974
HERRING PICKLED FILLET	415,672	188,530
TUNA BIGEYE FROZEN	177,655	185,444
FLATFISH TURBOT GREENLAND FRESH	65,110	185,016
FISH BALLS CAKES PUDDING NOT IN ATC NOT IN OIL NOT > 6.8KG	75,856	184,633
PIKE PICKEREL PIKE PERCH YELLOW PIKE FROZEN	86,098	182,809
FISH BALLS CAKES PUDDING NOT IN ATC NOT IN OIL > 6.8KG	64,589	182,736
FLATFISH HALIBUT NSPF FILLET BLOCKS FROZEN > 4.5KG	240,442	181,660
GROUNDFISH POLLOCK ALASKA ROE FROZEN	69,819	181,404
GROUNDFISH COD NSPF FROZEN	217,439	180,919
SNAIL OTHER THAN SEA SNAIL PREPARED/PRESERVED	77,390	180,407
FISH NSPF SMOKED	81,393	177,444
MONKFISH FRESH	295,551	177,274
GROUNDFISH POLLOCK NSPF FRESH	668,957	173,347

Table 4.8. Continued

PRODUCT NAME	LIVE WEIGHT (LBS)	Constant Dollar Value
CRABMEAT KING IN ATC	228,895	171,950
TROUT RAINBOW FRESH FARMED	108,198	170,795
TOOTHFISH ANTARCTIC FILLET FROZEN	80,846	168,039
SALMONIDAE NSPF FRESH	86,544	167,544
GROUND FISH POLLOCK ALASKA FROZEN	262,307	166,749
FISH MEAL FOR HUMAN CONSUMPTION > 6.8KG	48,083	164,074
HERRING PICKLED	497,827	163,393
STURGEON ROE CURED	1,677	161,945
TROUT NSPF FROZEN	126,957	160,554
TUNA BLUEFIN FROZEN	25,660	155,847
PERCH NSPF FILLET BLOCKS FROZEN > 4.5KG	323,518	154,552
TUNA NSPF IN ATC (OTHER) IN OIL	182,354	154,113
PERCH PIKE PERCH YELLOW PIKE FROZEN	72,677	151,172
MOLLUSCS/OTHER NSPF PRODUCTS PREPARED DINNERS CONTAIN FISH	219,471	149,141
FISH SHELLFISH NSPF JUICE	23,898	148,408
LOBSTER NSPF OTHER PREPARATIONS	94,155	147,071
SALMON CHUM STEAKS FROZEN	48,706	145,651
SCALLOPS PREPARED/PRESERVED	45,076	144,585
SALMON PACIFIC NSPF FROZEN	53,841	143,999
SHAD STURGEON FROZEN	68,168	143,923
CRABMEAT DUNGENESS IN ATC	133,581	143,880
GROUND FISH COD NSPF SALTED MOISTURE CONTENT BET 43-45%	184,944	143,815
GROUND FISH CUSK HADDOCK FILLET SALTED	198,214	143,573
CATFISH (ICTALURUS SPP.) FROZEN	129,195	143,263
SALMON SOCKEYE STEAKS FROZEN	42,517	142,384
FLATFISH TURBOT GREENLAND FROZEN	88,745	139,975
STICKS TYPE PRODUCTS COATED NOT COOKED NOT IN OIL OF MINCED	217,294	139,584
GROUND FISH HAKE WHITING FROZEN	266,881	139,091
MOLLUSCS NSPF LIVE/FRESH	218,510	139,074
CRABMEAT DUNGENESS FROZEN	79,063	138,279
ANALOG PRODUCTS CONTAINING SHELLFISH	218,814	137,450
FLATFISH SOLE ROCK FROZEN	119,518	136,133
PIKE FRESH	60,788	133,539
FLATFISH TURBOT GREENLAND FILLET BLOCKS FROZEN > 4.5KG	208,245	131,969
SALMON NSPF ROE CURED	19,951	130,982
SHARK NSPF FRESH	161,365	130,678
BUTTERFISH FROZEN	200,146	130,085
TUNA NSPF FROZEN	139,209	130,080
SMELTS SEA FROZEN	154,421	128,108
GROUND FISH COD ATLANTIC FROZEN	124,045	126,891
FISH NSPF LIVER & ROE FRESH	30,587	124,688
SHRMP PRODUCTS PREPARED DINNERS CONTAINING FISH IN ATC	164,011	124,465
CRB PRODUCTS PREPARED DINNERS CONTAINING FISH NOT IN ATC	81,338	122,552

Table 4.8. Continued

PRODUCT NAME	LIVE WEIGHT (LBS)	Constant Dollar Value
MUSSELS LIVE/FRESH WILD	48,895	120,047
SALMON ATLANTIC DANUBE STEAKS FRESH	47,984	119,095
PIKE PICKEREL FROZEN	62,381	117,276
BONITO YELLOWTAIL POLLOCK CANNED NOT IN OIL	157,256	116,523
GROUND FISH CUSK POLLOCK FROZEN	97,942	115,990
GROUND FISH HAKE FILLET SALTED	194,882	115,051
MACKEREL SALTED > 6.8KG	191,079	111,498
CLAM GEODUCK FROZEN/DRIED/SALTED/BRINE	8,682	111,052
GROUND FISH COD NSPF FILLET SALTED MOISTURE NOT > 43%	129,736	110,868
FISH NSPF MEAT FROZEN NOT > 6.8KG	244,021	109,010
SARDINE SARDINELLA BRISLING SPRAT FROZEN	251,003	107,635
SHARK FINS DRIED	6,611	107,631
SWORDFISH STEAKS FRESH	44,024	106,677
CRUSTACEANS NSPF PRODUCTS PREPARED DINNERS CONTAIN FISH	150,984	106,587
SALMON NSPF ROE FROZEN	11,585	103,387
MACKEREL FRESH	115,780	103,246
WOLFFISH FILLET BLOCKS FROZEN > 4.5KG	202,134	102,854
SQUID (LOLIGO PEALED) FROZEN/DRIED/SALTED/BRINE	63,655	101,343
SABLEFISH FRESH	65,052	99,924
FLATFISH PLAICE FROZEN	126,451	99,921
PIKE PERCH YELLOW PIKE FILLET FRESH	54,035	99,319
FLATFISH HALIBUT ATLANTIC FROZEN	43,051	99,048
SALMON NSPF CANNED IN OIL	57,019	97,765
BONITO CANNED IN OIL	178,348	96,934
TUNA ALBACORE IN ATC (OTHER) IN OIL	67,301	96,213
GROUND FISH CUSK FROZEN	128,371	95,831
HERRING SMOKED FILLET	129,474	95,214
GROUND FISH OCEAN PERCH NSPF FILLET BLOCKS FROZEN > 4.5KG	201,463	94,184
CRUSTACEANS NSPF LIVE/FRESH/DRIED/SALTED/BRINE	53,264	94,002
CLAM JUICE	35,666	92,358
SAUGER FILLET BLOCKS FROZEN > 4.5KG	288,581	92,084
HERRING IN ATC IN OIL	129,824	91,810
SARDINE CANNED IN TOMATO SAUCE > 7KG	171,847	90,584
SQUID (LOLIGO NSPF) PREPARED/PRESERVED	65,694	90,264
ANCHOVY SALTED > 6.8KG	122,064	89,091
SQUID NSPF LIVE/FRESH	87,382	87,479
FLATFISH FLOUNDER FROZEN	74,945	87,466
OCTOPUS LIVE/FRESH	51,073	85,612
GROUND FISH COD CUSK HADDOCK HAKE POLLOCK SMOKED	96,304	82,414
PICKEREL FILLET BLOCKS FROZEN > 4.5KG	71,771	81,889
CAVIAR SUBSTITUTE BOILED IN ATC	23,751	80,975
MARINE FISH NSPF MEAT FROZEN NOT > 6.8 KG	215,154	76,605
SALMONIDAE NSPF FROZEN	50,196	75,408



Table 4.8. Continued

PRODUCT NAME	LIVE WEIGHT (LBS)	Constant Dollar Value
FISH PASTES	18,196	75,232
CLAM STIMPSON FROZEN/DRIED/SALTED/BRINE	11,731	74,902
CRB PRODUCTS PREPARED DINNERS CONTAINING FISH	117,161	74,565
GROUND FISH HAKE (UROPHYCIS SPP.) FILLET FRESH	205,346	74,380
SALMON CHINOOK STEAKS FRESH	31,706	74,020
SHARK DOGFISH FROZEN	45,492	72,898
FLATFISH SOLE MEAT FROZEN > 6.8KG	145,521	71,712
STICKS TYPE PRODUCTS NOT COATED IN OIL NOT MINCED > 7KG	84,975	70,772
FISH NSPF LIVER ROE CURED	14,160	70,400
MARINE FISH NSPF SCALED WHETHER OR NOT DRESS FRESH	57,842	69,832
GROUPE FROZEN	53,859	69,112
SHAD STURGEON FRESH	35,760	68,597
FRESHWATER FISH NSPF MEAT FROZEN NOT > 6.8KG	125,094	67,829
MONKFISH FROZEN	107,434	67,446
FLATFISH TURBOT GREENLAND MEAT FROZEN > 6.8KG	168,945	66,867
REPTILE FRESH/FROZEN	36,017	65,833
SHARK NSPF FROZEN	14,314	64,913
EELS FRESH	18,575	62,783
FISH NSPF IN ATC IN OIL	76,004	62,539
ANCHOVY CANNED NOT IN OIL > 6.8KG	93,754	61,872
STURGEON ROE FROZEN	755	60,223
HERRING SMOKED WHOLE OR BEHEADED NOT OTHERWISE PROCESSED	109,124	60,191
GROUND FISH CUSK FILLET FROZEN	101,644	59,844
FLATFISH PLAICE FILLET FRESH	103,608	59,183
MULLET ROE FRESH	14,589	59,112
MACKEREL FILLET DRIED/SALTED/BRINE NOT > 6.8KG	119,450	57,563
FISH NSPF SALTED > 6.8KG	59,679	57,503
SNAIL OTHER THAN SEA SNAIL LIVE/FRESH/FROZEN/SALTED	68,857	57,490
ANCHOVY SALTED NOT IN ATC NOT > 6.8KG	33,014	56,780
LOBSTR NSPF PRODUCTS PREPARED DINNERS CONTAIN FISH NOT IN ATC	27,309	56,683
MULLET FROZEN	93,328	55,992
FISH NSPF SALTED NOT > 6.8KG	41,602	54,463
TUNA NSPF IN ATC (FOIL OR FLEXIBLE) NOT IN OIL IN QUOTA	108,469	54,174
SQUID (LOLIGO NSPF) LIVE/FRESH	42,575	53,197
HERRING ROE FROZEN	26,306	52,658
SALMON NSPF SALTED	14,572	51,410
CUTTLEFISH LIVE/FRESH	28,112	51,388
FISH BALLS CAKES PUDDING IN OIL	22,901	51,179
FISH MEAL FOR HUMAN CONSUMPTION NOT > 6.8KG	34,439	50,260
STURGEON ROE FRESH	1,194	49,031
STICKS TYPE PRODUCTS COATED NOT COOKED OF MINCED	63,267	48,871
ATKA MACKEREL FRESH	45,706	48,319
LOBSTR NSPF PRODUCTS PREPARED DINNERS CONTAINING FISH IN ATC	18,315	46,064

Table 4.8. Continued

PRODUCT NAME	LIVE WEIGHT (LBS)	Constant Dollar Value
SALMON PINK CANNED IN OIL	49,338	45,773
FLATFISH PLAICE FRESH	35,298	45,637
ANCHOVY CANNED NOT IN OIL NOT > 6.8KG	26,320	45,249
ATKA MACKEREL FROZEN	76,226	44,903
STICKS TYPE PRODUCTS COATED COOKED OR IN OIL OF MINCED	131,576	42,733
GROUNDFISH OCEAN PERCH NSPF FROZEN	47,302	42,335
HERRING IN TOMATO SAUCE/SMOKED/KIPPERED > 0.45KG	50,048	41,931
BONITO YELLOWTAIL POLLOCK CANNED IN OIL	79,947	40,537
MACKEREL SMOKED	29,030	39,619
GROUNDFISH CUSK FRESH	55,592	39,290
FLATFISH SOLE YELLOWFIN FROZEN	43,192	36,278
MACKEREL SALTED NOT > 6.8KG	78,488	34,102
SALMON COHO STEAKS FRESH	15,786	32,138
FROG MEAT	10,516	32,035
CLAM RAZOR CANNED	27,406	31,481
SARDINE SARDINELLA BRISLING SPRAT FRESH	77,022	31,414
BONITO CANNED NOT IN OIL	41,052	30,295
SABLEFISH SCALED WHETHER OR NOT DRESS FRESH NOT > 6.8KG	22,948	30,279
KRILL ANTARCTIC	363,685	29,715
GROUNDFISH OCEAN PERCH MEAT FROZEN > 6.8KG	97,152	29,667
TUNA ALBACORE IN ATC (FOIL OR FLEXIBLE) NOT IN OIL IN QUOTA	33,913	27,686
ANCHOVY SALTED IN ATC NOT > 6.8KG	11,637	24,151
SAUGER FROZEN	16,433	21,706
LOBSTR NSPF PRODUCTS PREPARED DINNERS CONTAINING FISH	16,160	19,866
HERRING FILLET DRIED/SALTED/BRINE NOT > 6.8KG	44,178	16,568
CLAM NSPF BOILED CANNED WHETHER OR NOT MINCED/CHOP NOT >0.68K	5,867	14,288
SALMON ATLANTIC DANUBE STEAKS FROZEN	1,037	9,786
SALMON SOCKEYE STEAKS FRESH	1,791	8,442
HERRING SALTED NOT > 6.8KG	15,979	8,342
REPTILE EDIBLE FLOURS/MEALS	3,724	7,901
SALMONIDAE NSPF STEAKS FROZEN	8,549	5,517
CATFISH (ICTALURUS SPP.) FRESH	3,780	4,162
SALMON CHUM STEAKS FRESH	3,682	4,158
CATFISH (PANGASIUS SPP.) FRESH	1,711	4,152
SALMON PACIFIC NSPF STEAKS FROZEN	977	2,068

Table 4.9. Exports (Mean, 1989-2006) of Edible Product, by Product Form

PRODUCT NAME	LIVE WEIGHT (LBS)	Constant Dollar Value
GROUNDFISH POLLOCK ALASKA ROE FROZEN	4,044,800	22,961,092
SALMON SOCKEYE FROZEN	6,017,900	13,523,223
SURIMI ALASKA POLLOCK	55,496,000	9,721,041
SEA URCHIN ROE FRESH	4,911,200	8,262,374
FLATFISH SOLE YELLOWFIN FROZEN	24,476,000	8,052,922
CRAB SNOW FROZEN	4,528,500	7,637,731
SURIMI NSPF	31,791,000	6,885,235
GROUNDFISH POLLOCK NSPF MINCED FROZEN	10,336,000	5,524,393
SABLEFISH FROZEN	2,249,600	5,501,770
GROUNDFISH COD NSPF FROZEN	6,207,600	5,107,505
SALMON SOCKEYE CANNED NOT IN OIL	2,583,200	4,346,068
ATKA MACKEREL FROZEN	6,146,900	3,538,499
HERRING FROZEN	4,372,200	3,512,649
SALMON SOCKEYE STEAKS FROZEN	1,832,900	3,507,567
HERRING ROE FROZEN	2,070,700	3,078,506
HERRING ROE CURED	1,363,700	3,002,318
LOBSTER (HOMARUS SPP.) LIVE/FRESH/DRIED/SALTED/BRINE	544,693	2,915,081
SALMON NSPF ROE FROZEN	607,599	2,906,784
FLATFISH SOLE ROCK FROZEN	4,865,700	2,898,030
FISH NSPF MEAT/MINCED FROZEN	8,738,100	2,873,745
SEA URCHIN LIVE/FRESH	575,446	2,422,637
SALMON ATLANTIC FRESH FARMED	1,175,600	2,409,129
CRAB NSPF FROZEN	901,927	2,401,799
FLATFISH SOLE NSPF FROZEN	4,773,900	2,344,017
SALMON NSPF ROE CURED	396,073	2,315,878
CLAM GEODUCK LIVE/FRESH	174,139	2,235,833
CRAB KING FROZEN	544,868	2,207,293
FLATFISH HALIBUT GREENLAND TURBOT FROZEN	1,299,500	2,193,556
ABALONE PREPARED/PRESERVED	102,004	2,155,678
GROUNDFISH POLLOCK ALASKA FILLET FROZEN	5,465,900	2,071,187
TUNA BLUEFIN FRESH	346,269	1,949,162
SALMON SOCKEYE FRESH	906,561	1,738,805
FISH NSPF FROZEN	2,130,300	1,707,050
SALMON PINK CANNED NOT IN OIL	1,639,900	1,676,614
SALMON COHO FROZEN	862,550	1,639,277
GROUNDFISH OCEAN PERCH PACIFIC FROZEN	2,551,900	1,369,275
FLATFISH HALIBUT ATLANTIC PACIFIC FROZEN	671,244	1,362,782
FLATFISH HALIBUT GREENLAND TURBOT FRESH	669,690	1,273,997
SALMON PINK FROZEN	1,362,100	1,245,756
MONKFISH FROZEN	1,617,100	1,237,547
CRAWFISH FRESHWATER FROZEN	472,748	1,200,756
FLATFISH TURBOT GREENLAND FROZEN	1,154,500	1,193,778
FISH NSPF MINCED FROZEN > 6.8KG	4,474,000	1,190,083

Table 4.9. Continued

PRODUCT NAME	LIVE WEIGHT (LBS)	Constant Dollar Value
FISH NSPF LIVER & ROE FROZEN	368,226	1,187,935
FISH NSPF FRESH	1,331,000	1,181,613
SALMON CHUM FROZEN	1,028,500	1,170,191
GROUND FISH COD NSPF FRESH	1,255,800	1,137,673
MULLET ROE FROZEN	128,329	1,115,905
STICKS TYPE PRODUCTS NOT COATED OF MINCED	2,224,000	1,093,304
FLATFISH NSPF FROZEN	1,858,100	1,044,083
GROUND FISH COD NSPF SALTED	2,446,200	1,030,568
CRAB NSPF LIVE/FRESH/SALTED/BRINE	961,135	1,009,109
999 FISH NSPF MEAT FROZEN	2,663,800	980,816
GROUND FISH HAKE WHITING FROZEN	1,825,700	941,314
MOLLUSCS NSPF LIVE/FRESH	990,574	930,277
MULLET ROE FRESH	130,847	910,849
SCORPIONFISH (SCORPAENIDAE) FROZEN	1,438,500	909,353
TUNA ALBACORE FROZEN	824,558	887,191
SABLEFISH FRESH	446,261	885,258
SALMON PINK FRESH	1,064,800	881,973
SALMON CHINOOK FROZEN	292,495	860,409
FISH BALLS CAKES PUDDING PREPARED/PRESERVED	289,382	783,715
SHRIMP OTHER PREPARATIONS	471,504	729,739
FISH NSPF LIVER & ROE FRESH	145,284	726,215
SQUID (LOLIGO OPALESCENS) FROZEN/DRIED/SALTED/BRINE	1,428,000	724,456
HERRING FRESH	1,934,000	713,467
SARDINE SARDINELLA BRISLING SPRAT FROZEN	2,179,200	712,440
GROUND FISH POLLOCK ATLANTIC FROZEN	1,464,200	682,940
MACKEREL FROZEN	1,401,700	673,707
SALMON NSPF CANNED NOT IN OIL	420,641	599,015
SHRIMP PEELED FROZEN	302,613	585,010
FISH MEAL FOR HUMAN CONSUMPTION	1,911,500	583,559
BUTTERFISH FROZEN	480,180	554,648
SCALLOPS LIVE/FRESH	123,461	541,523
SHRIMP SHELL-ON FROZEN 31/40	140,404	533,976
SHRIMP FROZEN	274,475	533,297
GROUND FISH COD NSPF FILLET FROZEN	1,082,100	517,533
SCALLOPS FROZEN/DRIED/SALTED/BRINE	98,767	492,450
FLATFISH NSPF FRESH	286,702	479,559
MONKFISH FRESH	458,397	468,039
FISH NSPF FILLET FROZEN	715,751	443,141
MOLLUSCS NSPF FROZEN/DRIED/SALTED/BRINE	423,699	431,857
SALMON CHUM FRESH	558,206	426,836
SHRIMP CANNED	165,276	422,733
FISH NSPF FILLET FRESH	552,709	421,426
FISH NSPF LIVER ROE CURED	90,422	421,091

Table 4.9. Continued

PRODUCT NAME	LIVE WEIGHT (LBS)	Constant Dollar Value
FLATFISH HALIBUT NSPF FILLET FROZEN	225,814	414,804
SALMON PACIFIC NSPF FROZEN	226,597	412,817
CRAB DUNGENESS FROZEN	143,684	409,094
SALMON COHO FRESH	204,781	406,201
CONCH LIVE/FRESH	354,295	405,435
SALMON COHO STEAKS FROZEN	258,504	393,749
SHARK DOGFISH FROZEN	381,658	389,834
FISH NSPF DRIED	387,454	387,554
SHARK DOGFISH FRESH	321,217	387,188
SQUID (LOLIGO PEALEI) FROZEN/DRIED/SALTED/BRINE	389,621	385,981
CRABMEAT SNOW (OPILIO) FROZEN	646,036	380,201
SALMON SOCKEYE STEAKS FRESH	194,991	376,924
SQUID (LOLIGO NSPF) PREPARED/PRESERVED	705,618	371,569
CLAM NSPF PREPARED/PRESERVED	171,685	366,887
SHRIMP SHELL-ON FROZEN < 15	86,500	361,578
TILAPIA FROZEN	479,085	348,548
GROUND FISH COD NSPF MINCED FROZEN > 6.8KG	1,256,400	343,773
EELS FROZEN	453,878	341,187
TUNA NSPF FRESH	190,247	340,597
SCALLOPS PREPARED/PRESERVED	89,175	333,023
SHRIMP LIVE/FRESH/DRIED/SALTED/BRINE	184,424	331,028
SALMON NSPF FRESH	142,526	330,371
SALMON ATLANTIC FRESH	81,627	323,634
SALMON CHUM CANNED NOT IN OIL	278,517	321,520
SALMON CHINOOK STEAKS FROZEN	197,156	314,423
CRUSTACEANS NSPF PRODUCTS PREPARED DINNERS CONTAIN FISH	276,082	312,396
LOBSTER (HOMARUS SPP.) FROZEN	41,396	309,689
SALMON CHINOOK FRESH	101,359	307,223
OYSTERS LIVE/FRESH/FROZEN/DRIED/SALTED/BRINE	83,933	302,272
FLATFISH PLAICE FRESH	169,080	300,966
SHRIMP SHELL-ON FROZEN 51/60	95,570	294,418
SHARK FINS DRIED	34,482	293,638
TUNA BLUEFIN FROZEN	123,932	283,423
FLATFISH SOLE NSPF FRESH	348,098	282,611
SQUID NSPF FILLET FROZEN	444,800	278,535
SARDINE SARDINELLA BRISLING SPRAT PREPARED/PRESERVED	626,681	277,460
SHRIMP SHELL-ON FROZEN > 70	74,844	276,102
SQUID (LOLIGO NSPF) LIVE/FRESH	369,006	269,442
HERRING PREPARED/PRESERVED	481,488	268,726
TROUT NSPF FROZEN	182,597	258,063
MACKEREL FRESH	453,367	254,634
SARDINE SARDINELLA BRISLING SPRAT FRESH	293,070	242,824
MULLET FROZEN	211,391	242,299

Table 4.9. Continued

PRODUCT NAME	LIVE WEIGHT (LBS)	Constant Dollar Value
SQUID NSPF PREPARED/PRESERVED	356,122	238,998
LOBSTER ROCK FROZEN	32,039	238,349
CRABMEAT SNOW (OPILIO) IN ATC	399,401	238,036
FLATFISH PLAICE FROZEN	434,467	236,003
SQUID (LOLIGO NSPF) FROZEN/DRIED/SALTED/BRINE	315,430	229,511
TILAPIA FILLET FROZEN	571,906	229,200
SOUPS BROTHS BASED ON FISH OR OTHER SEAFOOD	108,104	224,632
STICKS TYPE PRODUCTS NOT COATED NOT MINCED	508,655	222,218
GROUNDFISH POLLOCK ATLANTIC FRESH	783,796	221,453
FISH NSPF FILLET DRIED/SALTED/BRINE	176,672	221,137
CATFISH NSPF FILLET FRESH	246,910	218,553
TUNA NSPF PREPARED/PRESERVED	233,371	216,841
GROUNDFISH COD NSPF DRIED	811,216	216,361
CLAM NSPF LIVE/FRESH	52,162	208,457
SHRIMP SHELL-ON FROZEN 41/50	55,023	203,428
STICKS TYPE PRODUCTS COATED OF MINCED	410,877	203,134
SALMON ATLANTIC FRESH WILD	70,061	202,254
SQUID NSPF FROZEN/DRIED/SALTED/BRINE	283,718	199,690
SHRIMP SHELL-ON FROZEN 15/20	43,694	192,747
SHRIMP SHELL-ON FROZEN 21/25	46,853	189,085
CRUSTACEANS NSPF FROZEN	122,548	187,391
FISH NSPF PREPARED DINNERS CONTAINING SHELLFISH	506,532	187,321
MOLLUSCS NSPF PREPARED/PRESERVED	98,760	184,714
CLAM NSPF FROZEN/DRIED/SALTED/BRINE	34,763	184,222
SALMON CHUM STEAKS FROZEN	161,342	184,052
SALMON NSPF PREPARED/PRESERVED	168,755	183,762
TUNA YELLOWFIN FROZEN	226,564	183,601
SQUID NSPF LIVE/FRESH	150,193	183,589
MUSSELS LIVE/FRESH	64,088	181,275
SALMON NSPF CANNED IN OIL	159,075	179,757
CRABMEAT KING FROZEN	160,565	178,432
SALMON PINK STEAKS FROZEN	171,754	178,090
EELS FRESH	91,928	175,827
CLAM GEODUCK FROZEN/DRIED/SALTED/BRINE	19,588	172,359
TUNA YELLOWFIN FRESH	137,701	171,897
SHRIMP SHELL-ON FROZEN 26/30	40,485	167,557
CUTTLEFISH FROZEN/DRIED/SALTED/BRINE	100,932	166,853
CAVIAR SUBSTITUTE PREPARED/PRESERVED	34,296	166,045
CRABMEAT NSPF FROZEN	203,234	165,061
TROUT NSPF FRESH	114,821	161,706
SALMON PINK STEAKS FRESH	95,918	159,316
STICKS TYPE PRODUCTS COATED NOT MINCED	272,784	155,993
SALMON ATLANTIC DANUBE FRESH	56,404	154,161

Table 4.9. Continued

PRODUCT NAME	LIVE WEIGHT (LBS)	Constant Dollar Value
CRABMEAT NSPF IN ATC	287,168	151,686
TUNA ALBACORE FRESH	110,582	150,009
SHARK NSPF FRESH	211,612	145,672
TUNA SKIPJACK FROZEN	228,317	145,544
HERRING SALTED	309,901	144,064
SHRMP PRODUCTS PREPARED DINNERS CONTAINING FISH	199,587	140,606
CUTTLEFISH LIVE/FRESH	79,747	133,447
SHARK NSPF FROZEN	144,571	129,556
CATFISH NSPF FILLET FROZEN	113,932	127,945
LOBSTER NSPF OTHER PREPARATIONS	93,881	127,653
FISH NSPF SALTED	115,885	121,172
SHRIMP SHELL-ON FROZEN 61/70	39,135	119,138
OCTOPUS FROZEN/DRIED/SALTED/BRINE	66,734	118,249
TUNA NSPF FROZEN	120,150	114,218
MACKEREL PREPARED/PRESERVED	434,996	112,802
CRUSTACEANS NSPF LIVE/FRESH/DRIED/SALTED/BRINE	79,578	111,683
SALMONIDAE NSPF FROZEN	88,249	108,750
LOBSTR NSPF PRODUCTS PREPARED DINNERS CONTAINING FISH	75,320	105,629
CRUSTACEANS NSPF PREPARED/PRESERVED	44,427	104,690
SEA BASS FROZEN	64,004	104,678
MUSSELS LIVE/FRESH WILD	44,399	104,105
FISH SHELLFISH NSPF JUICE	22,066	100,667
SALMONIDAE NSPF FRESH	51,385	99,172
CRABMEAT KING IN ATC	144,143	99,067
MOLLUSCS/OTHER NSPF PRODUCTS PREPARED DINNERS CONTAIN FISH	149,048	98,133
SHRIMP FROZEN IN ATC	69,188	97,419
LOBSTER ROCK LIVE/FRESH/DRIED/SALTED/BRINE	16,266	93,484
SALMON COHO STEAKS FRESH	37,701	86,398
CRABMEAT NSPF OTHER PREPARATIONS	146,971	86,300
FROG LEGS FRESH/FROZEN	175,828	86,088
CRABMEAT SNOW OTHER FROZEN	188,064	86,085
SALMON SMOKED	21,601	84,206
STURGEON ROE FROZEN	10,200	83,439
CRB PRODUCTS PREPARED DINNERS CONTAINING FISH	107,815	83,266
GROUND FISH HADDOCK FROZEN	100,000	81,411
SALMON PACIFIC NSPF STEAKS FROZEN	45,524	80,096
SNAIL OTHER THAN SEA SNAIL LIVE/FRESH/FROZEN/SALTED	125,390	77,088
TUNA SKIPJACK FRESH	83,463	76,965
TROUT RAINBOW FRESH FARMED	42,035	75,271
ANCHOVY SALTED	74,032	74,958
MUSSELS FROZEN/DRIED/SALTED/BRINE	20,753	74,857
TUNA BIGEYE FRESH	46,993	71,344
SALMONIDAE NSPF STEAKS FROZEN	40,051	68,436

Table 4.9. Continued

PRODUCT NAME	LIVE WEIGHT (LBS)	Constant Dollar Value
CRAB NSPF OTHER PREPARATIONS	131,653	64,890
SALMON ATLANTIC DANUBE FROZEN	25,003	60,062
CRABMEAT DUNGENESS IN ATC	54,597	59,973
CRABMEAT SNOW OTHER IN ATC	91,934	59,817
TOOTHFISH PATAGONIAN FILLET FROZEN	50,958	59,769
LOBSTER NSPF MEAT COOKED IN ATC	62,580	59,417
SALMON CHINOOK STEAKS FRESH	31,234	57,039
OCTOPUS LIVE/FRESH	32,174	55,884
FISH NSPF SMOKED	36,070	54,208
SALMON CHUM STEAKS FRESH	43,736	53,347
TOOTHFISH PATAGONIAN FROZEN	67,107	51,799
ANCHOVY PREPARED/PRESERVED	90,307	51,193
CRABMEAT DUNGENESS FROZEN	46,246	50,513
HERRING SMOKED	60,757	50,254
MUSSELS LIVE/FRESH FARMED	20,589	50,087
GROUND FISH HADDOCK FRESH	38,670	41,131
TILAPIA FILLET FRESH	115,870	38,382
TUNA BIGEYE FROZEN	30,456	33,625
REPTILE FRESH/FROZEN	15,655	32,557
REPTILE EDIBLE FLOURS/MEALS	28,854	30,562
CRABMEAT NSPF FRESH/DRIED/SALTED/BRINE	39,631	28,926
SALMON ATLANTIC DANUBE STEAKS FRESH	13,716	25,063
LINGCOD FRESH	22,898	18,270
TUNA BLUEFIN SOUTHERN FROZEN	3,254	4,939
TUNA BLUEFIN SOUTHERN FRESH	2,362	4,247
SALMON ATLANTIC DANUBE STEAKS FROZEN	2,009	3,706
CETACEA SIRENIA FRESH/FROZEN	1,883	2,897



#### 4.8 Trends in Trade in Non Edible Fish and Related Products

The United States exported 13 specific non-edible products between 1989 and 2006, and imported 23 non-edible products between 1989 and 2006 (Tables 4.10 and 4.11). The product with the highest average annual export value was fish and shellfish meal (unfit for human consumption), and the product with the highest import value was thickeners derived from seaweed. In contrast to edible products, the U.S. has generally had a positive or surplus trade balance for non-edible products (Figure 4.12). On a mean annual basis, the U.S. has had a surplus of approximately \$20.3 million per year. Since 2004, however, the U.S. has run a deficit in the trade balance of non-edible products.

Table 4.10. U.S. Exports of Non-Edible Fish and Related Products, Annual Mean Values

PRODUCT NAME	LIVE WEIGHT (LBS)	Constant Dollar Value
FISH SHELLFISH MEAL UNFIT FOR HUMAN CONSUMPTION	1,184,900,000	71,026,000
THICKENERS DERIVED FROM SEAWEED CARAGEENAN	13,470,000	59,275,000
THICKENERS DERIVED FROM VEGETABLE PRODUCTS (KELP)	8,571,600	45,103,000
FISH SHELLFISH PRODUCTS UNFIT FOR HUMAN CONSUMPTION	45,323,000	31,888,000
MENHADEN OIL/FRACTIONS	160,290,000	31,888,000
CORAL SHELLS CUTTLEBONE CRUDE/SIMPLY PREPARED	45,869,000	30,943,000
SEAWEEDS AND OTHER ALGAE	3,317,500	13,589,000
FISH NSPF OIL/FRACTIONS	27,622,000	8,941,100
SPONGE NATURAL	1,350,200	4,952,100
FISH NSPF LIVER OIL/FRACTIONS	3,223,000	3,235,900
AGAR	492,165	1,129,900
MARINE ANIMAL NSPF OIL/FRACTIONS	550,247	319,353
OYSTERS SEED	39,736	268,259

Table 4.11. U.S. Imports of Non-Edible Fish and Related Products, Annual Mean Values

PRODUCT NAME	LIVE WEIGHT (LBS)	Constant Dollar Value
THICKENERS DERIVED FROM SEAWEED CARAGEENAN	22,157,000	61,985,000
SEAWEED CARAGEENAN	14,188,000	50,594,000
SEAWEEDS AND OTHER ALGAE	90,380,000	45,319,000
FISH SHELLFISH MEAL UNFIT FOR HUMAN CONSUMPTION	944,910,000	40,340,000
THICKENERS DERIVED FROM VEGETABLE PRODUCTS (KELP)	5,102,100	27,932,000
AGAR	2,462,800	25,036,000
FISH SHELLFISH PRODUCTS UNFIT FOR HUMAN CONSUMPTION	76,503,000	15,853,000
FISH NSPF OIL/FRACTIONS	13,104,000	11,069,000
CORAL SHELLS CUTTLEBONE CRUDE/SIMPLY PREPARED	8,920,100	10,149,000
HERRING PILCHARD MEAL UNFIT FOR HUMAN CONSUMPTION	164,280,000	8,393,100
WAXES NSPF MAY INCLUDE SPERMACETI	3,252,700	6,263,400
COD LIVER OIL/FRACTIONS	2,975,200	4,887,600
HERRING OIL/FRACTIONS	13,922,000	4,595,000
FISH NSPF LIVER OIL/FRACTIONS	1,008,400	3,574,500
FISH NSPF FERTILIZED EGGS	9,986,500	2,441,100
SPONGE NATURAL	159,143	1,755,400
FISH GLUE	629,902	691,452
KRILL ANTARCTIC FOR ANIMAL FEED	20,467,000	576,304
COD OIL/FRACTIONS	701,631	441,612
MENHADEN OIL/FRACTIONS	1,211,600	404,282
AMBERGRIS MAY INCLUDE CASTOREUM CIVET MUSK	1,094	174,769
OYSTERS SEED	44,942	68,064
MARINE ANIMAL NSPF OIL/FRACTIONS	39,311	51,932

Examination of the trends in the imports and exports of non-edible products, based on the 30 product groupings, indicates that the leading export product group is “all other.” The “all other” product group is also the leading import product group. In general, exports fall within one of four product groups—all other, no specific product form of fish, other shellfish, and oysters; imports fall within one of five product groups—all other, no specific product form of fish, other shellfish, herring and sardines, and oysters. Out of the five aggregate products traded, three—all other, herring and sardines, and fish of no specific product form—had deficits (imports > exports) in 2006 (Figure 4.13).

Figure 4.12. Imports and Exports of Non-Edible Products (2006 Values), 1989-2006

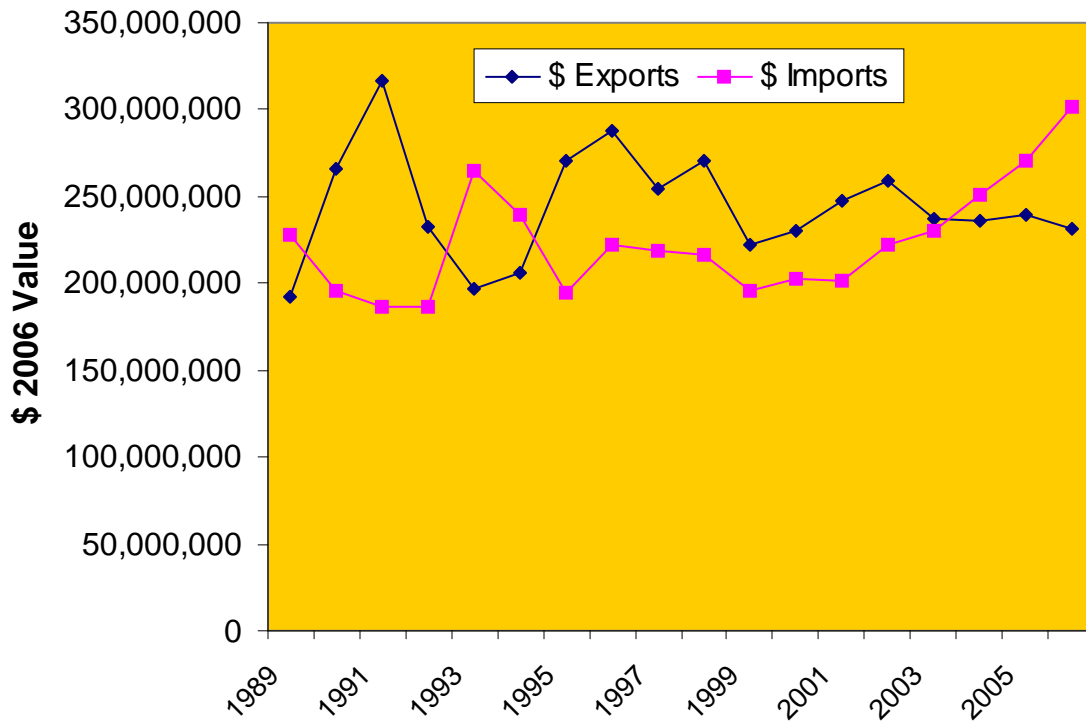
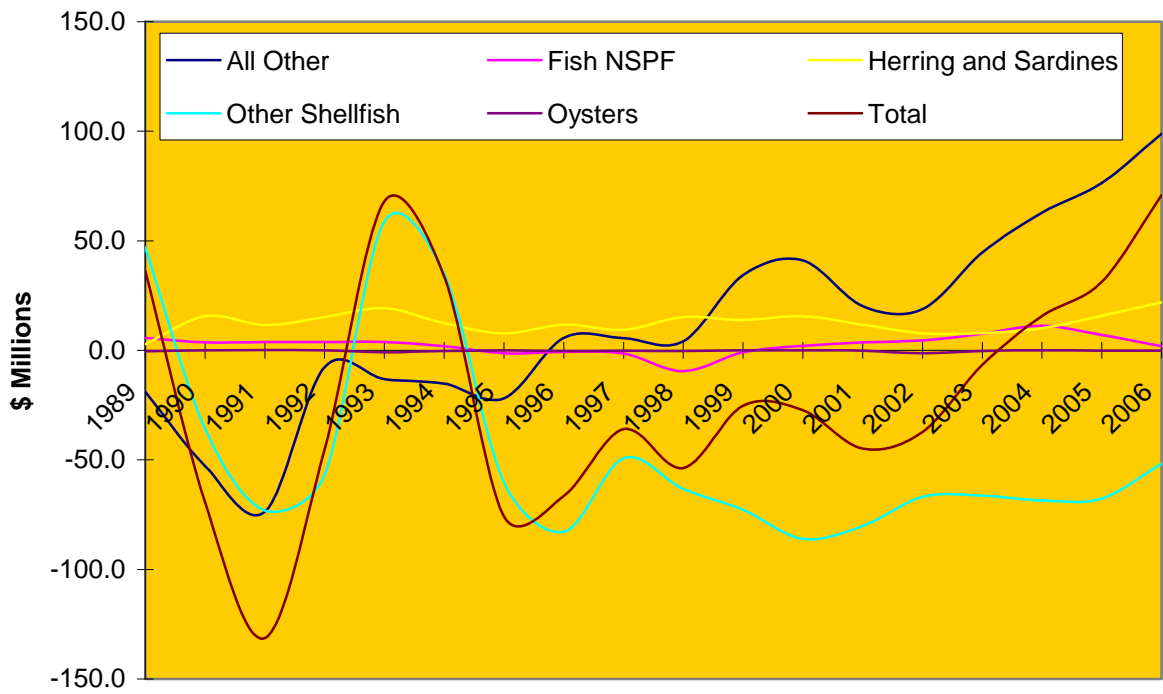


Figure 4.13. Trade Balance in non-Edible Products, by Product Group



## 5.0 Domestic Fisheries, International Trade, And Aquaculture

### 5.1 Our Fisheries, The Global Picture, and Aquaculture

It is no secret that the U.S. commercial fishing industry is in a state of decline. Since 1950, landings have increased by 92.2 %, but the value and prices received by commercial fishermen (ex-vessel value and ex-vessel price) have declined, respectively, by 23.0 and 59.9 percent. Moreover, increasingly restrictive management has been imposed on the industry since the passage of the Sustainable Fisheries Act of 1996. Since 1989, the initial period of our trade data, import quantities increased by 58.7 percent; the constant dollar value of imports increased by 64.7 percent; the average price of imported seafood and related products increased by only 3.75 percent; domestic landings increased by 9.2 percent; the domestic ex-vessel value declined by 28.8 percent; and the ex-vessel price declined by 34.8 percent.<sup>19</sup> The real price of diesel fuel, which is a major expense item for many commercial fisheries of the U.S., increased 67.2 % since 1989. Between 2006 and 2008, the real price of diesel has increased by 12.3 percent.

To a large extent, it is perceived that the large global increase in production of many seafood and related products, and in particular, the increased volume of imports to the United States was facilitated by global expansion of aquaculture. Unfortunately, data on aquaculture production are quite limited. The Food and Agriculture Report “State of World Fisheries and Aquaculture,” released in 2006, provides data only through 2004. It is, nevertheless, very illuminating. Between 2000 and 2005, total landings or production by capture fisheries, excluding China, declined from 78.6 to 76.7 million tonnes. Aquaculture production, however, increased from 10.9 to 15.4 million tonnes; this does not include farm raised aquatic products by China. In 2004, China accounted for 69.6 % of the global production of aquaculture products; China accounted for 51.2 % of the total global value of aquaculture products. According to statistics provided by the Food and Agriculture Organization, aquaculture accounted for only 3.9 % of global fish supplies in 1970; by 2004, aquaculture was reported by FAO to have accounted for 32.4 % of the global supply of fish and related products. FAO reports that total world production of aquaculture product equaled 59.4 million tons in 2004, which is more than 131 billion tons of product. The reported farm-gate value was estimated to equal approximately \$70.3 billion. The farm-gate value is approximately 11 times higher than the highest ex-vessel value reported for all U.S. fisheries, which occurred in 1981.

The top 10 aquaculture producing nations, as of 2004, were China, India, Vietnam, Thailand, Indonesia, Bangladesh, Japan, Chile, Norway, and the United States. These 10 nations produced 40.1 million tonnes of product in 2004, which was up from the 35.7 million tones produced in 2002 (Table 5.1). Although the production of freshwater finfish dominates aquaculture production, the highest average annual rate of growth for different species has been crustaceans. The growth rate for crustaceans between 1970 and 2004 equaled 18.9 %; it equaled 7.7 % for mollusks; it was 9.3 % for

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<sup>19</sup> A simple regression relating the annual ex-vessel price per pound to the annual quantity of total imports suggests that the ex-vessel price will decline by \$0.00003 per pound for each million pound increase in imports; the adjusted r-squared for this simple model equaled 0.71 and the t-statistic for the coefficient corresponding to import quantities was 3.98.

freshwater fish; 7.3 % for diadromous fish; 10.5 % for marine fish; and was 8.8 % overall (FAO, 2007). The top10 aquaculture products in 2004 included carps and other cyprinids, oysters, clams and cockles, miscellaneous freshwater fishes, shrimps and prawns, salmon and trout, mussels, tilapias and other cichlids, scallops, and miscellaneous marine mollusks (Table 5.2).

Table 5.1. Top 10 Aquaculture Producers of Food Fish

Nation	2002		2004	
	Tonnes	Percent of World	Tonnes	Percent of World
China	27,767,251	68.8	30,614,968	67.3
India	2,187,189	5.4	2,472,335	5.4
Vietnam	703,041	1.7	1,198,617	2.6
Thailand	954,567	2.4	1,172,866	2.6
Indonesia	914,071	2.3	1,045,051	2.3
Bangladesh	786,604	1.9	914,752	2.0
Japan	826,715	2.0	776,421	1.7
Chile	545,655	1.4	674,979	1.5
Norway	550,209	1.4	637,993	1.4
United States	497,346	1.2	606,549	1.3
Top 10 Nations	35,732,648	88.5	40,114,531	88.2
Rest of World	4,650,830	11.5	5,353,825	11.8
Total	40,383,478	100.0	45,468,356	100.0

Source of Data: The State of World Fisheries and Aquaculture, 2006, Food and Agriculture Organization.

Table 5.2. Top 10 Aquaculture Species, Tonnes

Species/Group	2002	2004	Growth Rate
Carps and Other Cyprinids	16,673,155	18,303,847	4.8
Oysters	4,332,357	4,603,717	3.1
Clams, Cockles, and Arkshells	3,457,510	4,116,839	9.1
Miscellaneous Freshwater Fishes	3,763,902	3,739,949	-0.3
Shrimps and Prawns	1,495,950	2,476,023	28.7
Salmons, Trouts, Smelts	1,791,061	1,978,109	501
Mussels	1,700,871	1,860,249	4.6
Tilapias and Other Cichlids	1,483,309	1,822,745	10.9
Scallops and Pectens	1,228,692	1,166,756	-2.6
Miscellaneous Marine Molluscs	1,389,586	1,065,191	-12.4

Source of Data: The State of World Fisheries and Aquaculture, 2006, Food and Agriculture Organization.

## 5.2 Consumption Habits, Domestic Production, and International Trade

According to a list prepared by H.M. Johnson and Associates for the National Fisheries Institute, shrimp was the most popular seafood item of U.S. consumers in 2006. Consumers purchased 4.4 pounds of shrimp per capita. At the same time, the U.S. imported 2.6 billion pounds of shrimp with a value of \$4.1 billion. The U.S. exported 36.3 million pounds of product with a value of \$59.7 million in 2006. Ex-vessel landings equaled 336.0 million pounds, with an ex-vessel value of \$465.9 million. After adjusting the total supply for exports, U.S. imports were responsible for nearly 90.0 % of the shrimp consumed in the United States.

In 2000 and going back to 1992, shrimp ranked number two in terms of the most consumed seafood item. Canned tuna ranked number one in all years between 1992 and 2000. In 2001, shrimp became the most consumed seafood product in the United States. What happened to cause this? We cannot provide a comprehensive explanation of why this happened. We note, however, that between 2000 and 2001, domestic landings of shrimp declined by 40.0 million pounds; imports increased by 230.0 million pounds; the domestic ex-vessel price fell from \$2.40 to \$2.07 per pound, while the price of imports decreased from \$2.83 to \$2.32 per pound.

Thailand has been the major exporter of shrimp to the United States. In 2000, the U.S. imported 638.0 million pounds of shrimp at the import price of \$2.72 per pound from Thailand. In 2001, the United States imported 696.0 million pounds of shrimp with a price of \$2.06 per pound. Between 2000 and 2001, China increased its exports to the U.S. by approximately 40.0 million pounds (Table 5.3).

The FAO (2007) reports that in 2006, aquaculture supplied the world with 2.5 million tonnes (approximately 4.95 billion pounds) of shrimp and prawns. A large portion of this came from aquacultured shrimp. In 2007, the total imports of shrimp by the European Union, the United States, and Japan, which were mostly aquacultured products, declined relative to levels in 2006. Imports by the EU, however, actually increased over 2006 levels, while imports by the U.S. and Japan were both down.

What happened to cause this trend? The European shrimp market was largely influenced by the U.S. shrimp market situation (Globefish, 2008). Major exporting countries to the USA such as Thailand, Indonesia, and Ecuador, experienced difficulties in exporting to the U.S. because of the devaluation of the dollar, a declining U.S. economy, and anti-dumping tariffs. The major producing nations, therefore, sought out new market opportunities, which were mostly available in Europe.

It is important to remember, however, that many factors can affect the domestic and global market for seafood. In 2008, the worsening economy of the U.S. and the further devaluation of the dollar will likely deter producers in many nations from exporting large quantities to the U.S.; this will particularly be the case if the Euro continues to appreciate relative to the dollar. This started showing in 2007, when U.S. imports of shrimp declined by approximately 150.0 million pounds, and the import price increased by approximately \$0.04 per pound. Of our nations typically ranking in the top six or so nations exporting shrimp to the U.S., four out of seven decreased the volume and value of exports to the United States between 2006 and 2007: (1) Thailand decreased the volume and value of exports by, respectively, 2.81 and 3.25 %; (2) Vietnam increased

the volume and value of exports to the U.S. by, respectively, 5.99 and 7.02 %; (3) Indonesia increased its volume and value by 0.6 and 3.95 %; (4) Mexico increased its volume and value of exports to the U.S. by, respectively, 14.69 and 11.39 %; (5) Ecuador decreased its volume and value of exports to the U.S. by, respectively, 0.69 and 4.74 %; (6) China decreased its volume and value of exports to the U.S. by, respectively, 28.95 and 28.83 %; and (7) India decreased its volume and value of exports to the U.S. by, respectively, 23.83 and 22.72 %.



Table 5.3. Imports of Shrimp by Top Six Nations, Based on Value of Imports

Year	Nation	Million lbs	\$ Millions	\$ per Pound
2000	THAILAND	638.0	1,735.9	2.72
	MEXICO	104.0	467.7	4.50
	INDIA	122.0	278.2	2.28
	VIETNAM	72.4	273.5	3.78
	INDONESIA	69.8	221.4	3.17
	ECUADOR	73.6	220.9	3.00
2001	THAILAND	696.0	1,434.6	2.06
	VIETNAM	154.0	432.4	2.81
	MEXICO	107.0	431.7	4.03
	INDIA	139.0	299.1	2.15
	ECUADOR	100.0	254.2	2.54
	CHINA	119.0	218.0	1.83
2002	THAILAND	628.0	1,087.7	1.73
	VIETNAM	214.0	536.2	2.51
	INDIA	178.0	402.8	2.26
	CHINA	230.0	332.5	1.45
	MEXICO	86.8	294.1	3.39
	ECUADOR	112.0	221.8	1.98
2003	THAILAND	689.0	1,087.6	1.58
	VIETNAM	267.0	648.9	2.43
	CHINA	365.0	482.5	1.32
	INDIA	187.0	443.6	2.37
	MEXICO	90.7	320.7	3.53
	ECUADOR	130.0	230.4	1.77
2004	THAILAND	685.0	925.7	1.35
	VIETNAM	183.0	409.4	2.24
	INDIA	170.0	380.4	2.24
	INDONESIA	200.0	360.3	1.80
	CHINA	290.0	358.8	1.24
	MEXICO	103.0	347.1	3.37
2005	THAILAND	784.0	1,007.2	1.28
	VIETNAM	199.0	452.5	2.27
	INDONESIA	228.0	382.8	1.68
	MEXICO	100.0	328.1	3.28
	INDIA	149.0	321.4	2.16
	ECUADOR	185.0	279.3	1.51
2006	THAILAND	970.0	1,278.9	1.32
	INDONESIA	264.0	430.5	1.63
	VIETNAM	176.0	429.1	2.44
	CHINA	255.0	331.9	1.30
	ECUADOR	220.0	324.2	1.47
	MEXICO	126.0	321.9	2.55

### 5.3 Our Indigenous Resources, International Trade, and Global Aquaculture

It is apparent that U.S. consumers heavily rely on imports and global aquaculture to satisfy the domestic seafood demand. With imports providing nearly 87.0 % of the total domestic supply, any disruptions in imports for whatever reason could seriously disrupt the supplies of seafood available to the United States. Who cares? Couldn't we just utilize our domestic wild resources or expand our aquaculture facilities? This appears to be a common response to our dependency on imports.

A simple answer to the question posed above is “no.” Our domestic resources are mostly fully utilized or overexploited. NOAA Fisheries in its annual Status of the Stocks report notes that 44 of 166 stocks are overfished. NOAA also reports that overfishing is occurring for 39 of 182 stocks. Unfortunately, resource or stock status for many stocks are unknown. Our highest reported levels of landings between 1980 and 2006 occurred in 1993; total domestic landings (live weight) equaled 10.5 billion pounds. The per capita utilization of the domestically caught fish equaled 40.2 pounds per person, but the per capita utilization from all sources (imports plus domestically caught fish) equaled 78.1 pounds per person. The lowest per capital utilization equaled 49.9 pounds per person in 1980, but the highest per capita utilization of domestic product only equaled 40.2 pounds, which occurred in 1993. If we assume that domestic production in 1993 represented some metric indicative of maximum sustainable level, which in reality is likely to be higher than the most appropriate maximum sustainable yield, we still have a shortage of product available to American consumers in 2006. We find we would have to import about 2.9 billion pounds of product. The bottom line is that it is highly unlikely the U.S. can produce enough wild product to satisfy domestic demand.

Recognizing that our domestic wild capture resources are insufficient to satisfy domestic demand, which leaves us with two options for satisfying our demand for seafood and related products: (1) we can import more, and/or (2) we can promote and expand domestic aquaculture. Unless new and highly efficient technology is introduced, it does not appear that domestic aquaculture will expand for many products in the near future. The aquaculture of catfish has often been referred to as a success story for finfish aquaculture. Commercial catfish production is responsible for more than 46 % of the total value of domestic aquaculture production (Mississippi State University, 2007). In 2003, which is recognized as the peak year in catfish aquaculture, production reached 660 million pounds; that 660 million pounds equaled nearly 10.0 % of the total domestic landings of all finfish in 2003. Both the number of operations and water surface area related to catfish production decreased between 2007 and 2008—the number of operations decreased from 1,240 to 1,064, and the water surface area decreased from 163,676 to 154,632 acres. Reasons cited for this decline in catfish production include rising inputs costs and increased competition with foreign suppliers of catfish. Alternatively, domestic producers are unable to realize adequate profit margins given the levels and prices of imports, particularly given the increased production by China. The U.S., however, has been quite successful in molluscan aquaculture production (e.g., hard clams and oysters). Despite apparent limitations to expanding U.S. aquaculture, NOAA Fisheries has developed, nevertheless, a national program to expand aquaculture.

## 5.4 The Changing Value of the U.S. Dollar and Trade Patterns

Given that U.S. is not likely to substantially expand its aquaculture production of finfish and domestic resources are unlikely to recover in the near future, that leaves imports to satisfy our domestic demand. One problem here is the declining value of the U.S. dollar against the currencies of both seafood exporting and importing nations.

Nations have substantial levels of international trade, which also have ramifications for U.S. trade in seafood, include Thailand, Indonesia, China, Spain, Argentina, Japan, India, Mexico, Canada, Ecuador, and Vietnam. Imports and exports by the European Union also have substantial ramifications for U.S. trade in seafood, particularly imports. The FAO report “Globefish” for February 2008 highlights the importance of the devaluation of the dollar. The report notes that the EU was the only market, on a global basis, to expand the importation of shrimp in 2007. Imports of shrimp by both the United States and Japan, two major shrimp importing nations, declined between 2006 and 2007.

The changes in trade in 2007 are perceived as being, at least, partially if not mostly, related to the devaluation of the U.S. dollar. In this section, we examine changes in the exchange rates of nations active in importing and exporting seafood. We include Thailand, Indonesia, China, Spain, Argentina, Japan, India, Mexico, Canada, Vietnam, and the European Union. We exclude Ecuador because they have converted to a dollar-based system, but the previous currency, the Sucres, converts at the rate of approximately 25,000 to the U.S. dollar.

Major exporting nations to the U.S. are Canada, China, Thailand, Chile, Indonesia, Vietnam, Ecuador, Mexico, Russian Federation, India, the Philippines, Japan, Bangladesh, Malaysia, Norway, Honduras, Iceland, Brazil, New Zealand, and China-Taipei. When we examine the exchange rates between 2000 and 2008 for nations trading in seafood, we find that the U.S. dollar weakened against all currencies between 2006 and 2007, except for Japan and Mexico (Table 5.4). Between 2007 and January 2008, the dollar further weakened for all currencies, except that for the Rupiah of Indonesia.

What does the weakening of the dollar imply? First, imports will become more expensive in 2008, but our exports will be cheaper. The U.S., however, does not export a high volume of high value edible seafood products, and thus, the likelihood that exports will become cheaper will not likely have a significant effect on the U.S. fishing industry. What is less clear, however, is that the U.S. dollar is dropping against all major fish consuming nations, and thus, those nations will likely bid foreign product away from the United States. Bottom line for the U.S. consumer will be reduced supplies and higher prices for seafood and related products in 2008.

Table 5.4. Summary of Exchange Rates (Foreign Currency Per U.S. Dollar) for Nations Trading in Seafood, 2000-2006

	Bangladesh	Russia	Chile	Malaysia	Philippines	Norway	Honduras	Brazil	New Zealand	Indonesia
	Taka	Rubles	Pesos	Ringgit	Pesos	Kroner	Lempiras	Reals	NZ\$	Rupiah
2000	52.12	28.13	538.99	3.80	44.07	8.79	14.84	1.83	2.19	8,387.9
2001	55.79	29.16	633.11	3.80	50.97	8.99	15.47	2.35	2.38	10,231.1
2002	57.89	31.35	688.38	3.80	51.59	7.96	16.43	2.87	2.16	9,297.0
2003	58.15	30.68	690.04	3.80	54.19	7.08	17.34	3.07	1.72	8,574.2
2004	59.51	28.81	608.93	3.80	56.04	6.74	18.20	2.92	1.51	8,932.7
2005	64.31	28.28	559.56	3.79	55.08	6.44	18.83	2.43	1.42	9,699.1
2006	68.92	27.18	530.23	3.67	51.30	6.41	18.90	2.17	1.54	9,158.3
2007	68.87	25.57	522.47	3.44	46.08	5.85	18.90	1.94	1.36	9,140.6
2008	68.48	24.36	494.23	3.32	40.80	5.42	18.90	1.76	1.30	9,407.6
						Real				
	European Union	Thailand	India	China	Japan	Vietnam	Mexico	Canada	South Korea	
	EURO	Baht	Rupees	Yuan	Yen	Dong	New Pesos	Canadian \$	Won	
2000	1.08	40.16	44.98	8.28	107.81	14,167.8	9.46	1.49	1,131.0	
2001	1.12	44.50	47.22	8.28	121.48	15,209.9	9.34	1.55	1,291.6	
2002	1.06	43.02	48.62	8.28	125.16	15,440.8	9.66	1.57	1,249.4	
2003	0.88	41.54	46.59	8.28	115.84	15,547.8	10.79	1.40	1,191.8	
2004	0.80	40.26	45.27	8.28	108.13	15,029.9	11.29	1.30	1,145.3	
2005	0.80	40.23	44.00	8.19	110.03	14,457.3	10.89	1.21	1,024.1	
2006	0.80	37.86	45.17	7.97	116.34	14,027.4	10.90	1.14	954.1	
2007	0.73	32.19	41.16	7.60	117.71	13,547.3	10.93	1.07	929.0	
2008	0.68	30.31	39.27	7.24	107.82	13,190.5	10.91	1.01	942.1	

## 6.0 Summary and Conclusions

Consumers of seafood and related products in the United States are heavily dependent upon foreign imports to satisfy their demand. Based on data available from the national Marine Fisheries Service, foreign imports accounted for approximately 87.0 % of the volume (live weight equivalent) of edible seafood consumed in America in 2006. The U.S. imported \$13.4 billion in seafood and related products in 2006.<sup>20</sup> The nation only exported \$4.1 billion worth of seafood and related products in 2006. The fact that we imported more than we exported means we had a deficit in our balance of trade or balance of payments; the deficit was approximately \$9.3 billion, which means the U.S. exported \$9.3 billion of U.S. currency to other nations. The deficit, in real dollar terms, has been increasing at an average annual rate of 6.02 % per year.

The United States engaged in some kind of trade in seafood with up to 228 nations in any given year between 1989 and 2006. In 1989, the U.S. imported seafood and related commodities from 138 nations and exported to 114 nations. Our top five major trading nations in terms of value of exports in 1989 were Japan (1.3 billion in pounds and \$2.4 billion), Canada (270.0 million in pounds and \$305.2 million), the United Kingdom (57.2 million pounds and \$111.2 million), South Korean (98.8 million pounds and \$103.3 million), and France (49.5 million pounds and \$80.6 million). Our top five importing nations were Canada (2.0 billion pounds and \$1.8 billion); Thailand (694.0 million pounds and \$743.6 million), Mexico (201.0 million and \$587.4 million), Ecuador (206.0 million and \$516.9 million), and China (217.0 million pounds and \$449.3 million). In 2006, the United States imported seafood and related products from 138 nations and exported to 157 nations. The top five nations to which we exported were Japan (1.8 billion pounds and \$947.6 million), Canada (706.0 million pounds and \$695.1 million), China (\$1.3 billion pounds and \$485.0 million), South Korea (1.2 billion pounds and \$415.2 million), and Germany (492.0 million pounds and \$263.3 million). The five nations from which we imported the most, in value terms, were Canada (1.3 billion pounds and \$2.2 billion), China (2.84 billion pounds and \$2.0 billion), Thailand (1.7 billion pounds and \$1.8 billion), Chile (678.0 million pounds and \$975.4 million), and Indonesia (640.0 million pounds and \$784.5 million). We also note that Vietnam, which ranked sixth in 2006 for exports to the U.S., began exporting seafood and related products to the U.S. in 1994. In 1994, Vietnam exported 3.2 million pounds to the U.S. with an import value of \$7.5 million. In 2006, Vietnam exported 483.0 million pounds of product to the U.S., which had an import value of \$652.7 million.

The United States engaged in trade of up to 563 products between 1989 and 2006. These are uniquely identified products for which there is some type of price discrimination (e.g., shell-on frozen shrimp of different sizes). Because summarizing trends in exports and imports of such a large number of different products would require a large number of pages, we elected to aggregate the unique products into groupings of products and/or species (e.g., all shrimp products are grouped as the composite output

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<sup>20</sup> All dollar values presented in section five are real or constant dollar values and expressed in terms of year 2006 values.

called shrimp). Between 1989 and 2006, the U.S. imported 531 products and exported 255 seafood and related products; these were unique products, such as 15 count frozen shell-on shrimp.

In terms of exports and imports of our major groups, shrimp has been the major import commodity in value terms, and salmon has been the major export commodity in value terms. Based on live weight levels, shrimp has also been the major import commodity, while the broad product group of all other has been the major export commodity. Tuna, groundfish, lobster, and salmon round out the top five import commodities, and all other, groundfish, no specific product form of fish, and crabs make up the remaining top five export commodities.

There are several major reasons why the U.S. has regularly incurred a trade deficit in seafood. First, the abundance and availability of our wild natural resources appear to be inadequate to satisfy our domestic demand. Both per capita and total consumption of seafood have increased; per capita consumption has increased at the rate of 1.32 % per year, while total consumption has increased at the rate of 2.92 % per year. Second, the value of the U.S. dollar was quite strong compared to the values of the currencies of other nations. Our strong U.S. dollar encouraged imports while discouraging exports. Second, many nations expanded aquaculture and enjoyed a comparative advantage over our wild harvesters and our emerging aquaculture industry. Then, there were several rounds of international trade negotiations, which attempted to remove subsidies, tariffs, and quotas or restrictions on trade. Unfortunately, the U.S. dollar weakened in 2007 and more so in 2008. Another reason for increasing imports by the U.S. has been restrictions on imports of farm-raised products imposed by other nations (e.g., in 1997, the EU banned imports of shrimp from Bangladesh, and in 2004, the EU restricted imports of shrimp raised in Southeast Asia), and the subsequent enhanced market opportunities in the United States.

There is an emerging trend, however, of declining supplies of foreign imports. In 2007, the U.S. imported less shrimp than in 2006; shrimp imports dropped from \$4.1 billion to \$3.8 billion. The total value of imports of all edible products, however, was marginally down relative to the value of imports in 2006—from \$13.4 billion in 2006 to \$13.45 billion (2006 constant dollar value) in 2007. It is anticipated that the weakened U.S. dollar combined with strengthening currencies of other nations will divert foreign supplies to other nations in 2008. This has already happened in early 2008 with EU nations increasing their imports of shrimp from Southeast Asian nations.

In addition to the weakening dollar, the U.S. is experiencing severe economic problems, which can be expected to affect the domestic demand for seafood. Although there is conflicting evidence to support the notion that fish is a luxury commodity compared to a necessity, there is strong evidence to suggest that the domestic consumption of seafood, at least on a per capita basis, will likely decline in 2008. Higher energy prices and a weakened U.S. dollar will cause a downward shift in the away from home demand for seafood in 2008, which is the primary market outlet for seafood consumption. The economic stimulus package of the current administration may offset reduced discretionary income in 2008, but it is not expected to substantially affect the

demand for seafood. Countering this potential outcome, however, are reports like those produced by H.M. Johnson Associates in 2001, which predicted U.S. supplies would increase by 40.5 % between 1999 and 2025. Similarly, reports by the United States Department of Agriculture and various private firms all forecast enhanced demand and sales in the future. And then we have the latest dire forecast published in Science by an international group of economists and ecologists that the world's supply of seafood will run out by 2048.

What will actually be the levels of trade in the near to intermediate future is highly uncertain. General trends suggest that the domestic demand for seafood will increase; the increasing demand will be increasingly satisfied from foreign produced aquacultured products; and domestic prices will modestly increase. In actuality, it is extremely difficult to predict the market demand and supply for seafood. Product movement within markets and between consumers and producers is determined by what consumers are willing to pay and what producers or suppliers are willing to accept. A simplistic regression relating the retail price index of seafood to the retail price index of fuel suggests that as fuel prices increase by 1.0 percent, retail seafood prices will increase by 0.91 percent. World events can influence the trade in seafood. The U.S. has initiated various programs to expand offshore aquaculture, and if successful, could drastically change our dependency on foreign imports. And while we may experience a drop in imports in 2008, we should experience an increase in our exports of seafood and related products.

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