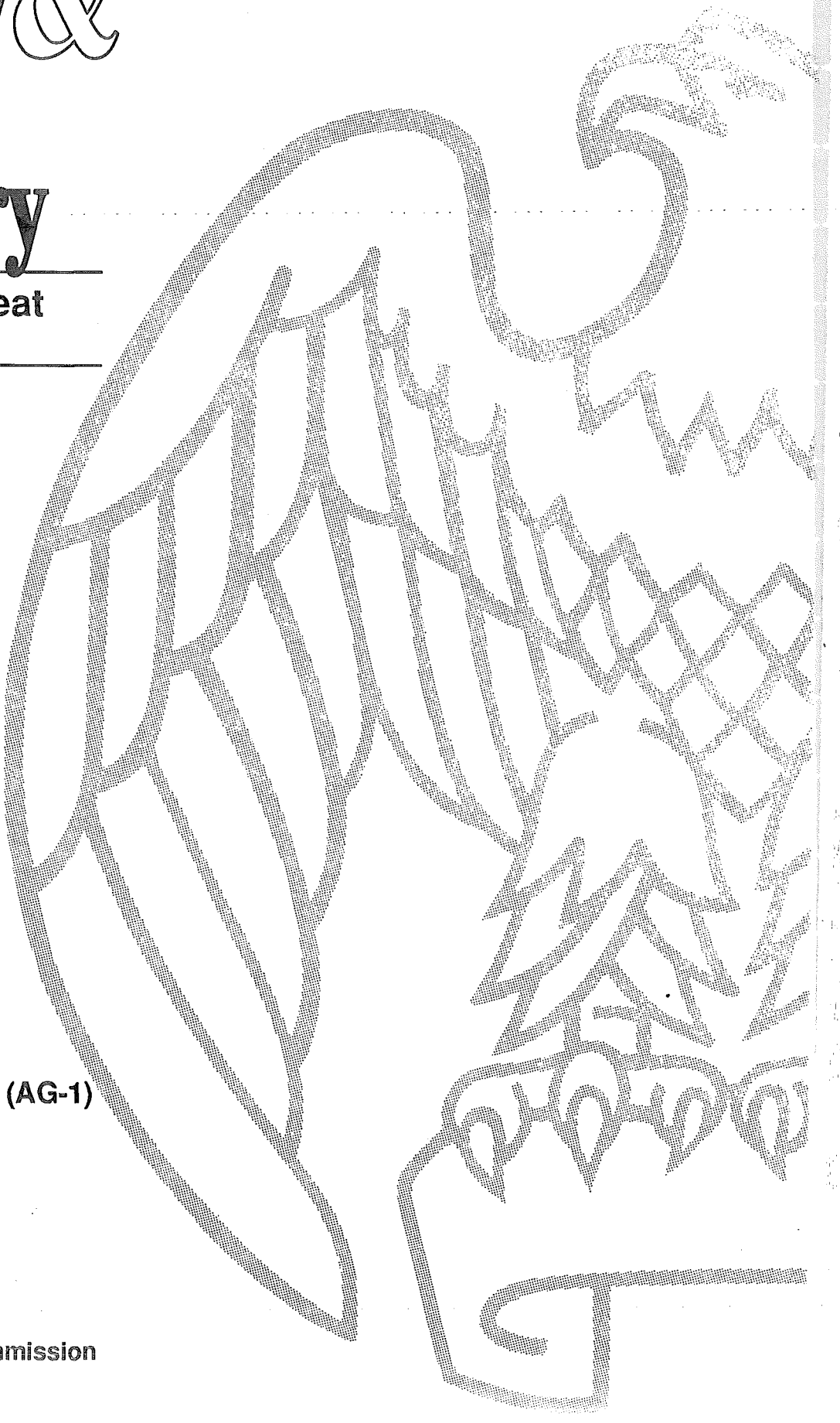
Industry & Trade Summary

Live Sheep and Meat of Sheep



USITC Publication 2459 (AG-1)
November 1991

OFFICE OF INDUSTRIES
U.S. International Trade Commission
Washington, DC 20436

UNITED STATES INTERNATIONAL TRADE COMMISSION

COMMISSIONERS

Anne E. Brunsdale, Acting Chairman

Seeley G. Lodwick

David B. Rohr

Don E. Newquist

Office of Operations
Charles W. Ervin, Director

Office of Industries
Robert A. Rogowsky, Director

This report was prepared principally by

Rose M. Steller

Animal and Forest Products Branch
Agriculture, Fisheries, and Forest Products Division

Address all communications to
Kenneth R. Mason, Secretary to the Commission
United States International Trade Commission
Washington, DC 20436

PREFACE

In 1991 the United States International Trade Commission initiated its current *Industry and Trade Summary* series of informational reports on the thousands of products imported into and exported from the United States. Each summary addresses a different commodity/industry area and contains information on product uses, U.S. and foreign producers, and customs treatment. Also included is an analysis of the basic factors affecting trends in consumption, production, and trade of the commodity, as well as those bearing on the competitiveness of U.S. industries in domestic and foreign markets.[1]

This report on live sheep and meat of sheep covers the period 1986 through 1990 and represents one of approximately 250 to 300 individual reports to be produced in this series during the first half of the 1990s. This is the first individual summary report published to date on the agricultural, animal, and vegetable products sector.

[1] The information and analysis provided in this report are for the purpose of this report only. Nothing in this report should be construed to indicate how the Commission would find in an investigation conducted under statutory authority covering the same or similar subject matter.

CONTENTS

CONTENTS—*Continued*

Introduction

This summary covers both live sheep and lambs and fresh, chilled, or frozen meat of sheep and lambs, but does not include meat preparations such as sausages, or offals. In this summary, the discussion of sheep refers to both mature animals and lambs unless otherwise specified. Information is provided herein on the structure of the U.S. industry (including lamb producers, feedlot operators, and meat packers) and certain foreign industries, domestic and foreign tariffs and nontariff measures, and the competitiveness of U.S. producers in both domestic and foreign markets. The report generally covers the period 1986 through 1990.

Sheep are ruminant animals that range in weight from 125 to 300 pounds at maturity, depending on breed and sex. In general usage, the term "sheep" refers to mature animals, and "lambs" to animals-usually under 14 months of age-that have not cut their first pair of permanent incisor teeth.

Lamb meat, derived from an immature sheep, is light red in color, compared with the dark red color of the meat of older sheep (mutton). Mutton is a low-value product and competes only on a limited basis with lamb meat. In 1990, lamb meat accounted for 94 percent of Federally inspected sheep slaughter. U.S. consumption of lamb meat and mutton totaled 391 million pounds, or about 1 percent of U.S. consumption of red meat in 1990.

U.S. imports of live sheep supplied less than 1 percent of U.S. consumption and/or production in 1990. Trade and industry sources report that the majority of imports were lambs for slaughter. Total mutton and lamb meat imports were valued at $38 million in 1990 and accounted for about 10 percent of U.S. consumption (by quantity). During 1986-90, the quantity of U.S. lamb-meat imports annually accounted for between 59 percent and 80 percent of total sheep-meat imports and averaged about 8 percent of U.S. lamb-meat consumption.

Lambs are raised by sheep growers who either maintain flocks of sheep for the production of lambs (including purebred and commercial flocks), or who maintain feedlots where lambs are fed on grain or other concentrates until they reach slaughter weight. Some growers engage in both activities, and not all lambs are placed in feedlots. Some lambs go to slaughter directly from pasture, where they may or may not have been provided with grains to supplement their diets of forage and ewe's milk.

In the United States, sheep are kept mainly for the production of lambs for meat; however, wool and pelts are important secondary byproducts, providing additional income to the grower. The official U.S. Department of Agriculture (USDA) grades for live sheep and for lamb and mutton are Prime, Choice, Good, Utility, and Cull. Most purchasers prefer cuts from carcasses that are Choice, and most of the lamb carcasses destined for table use are so graded. Mature sheep are usually sold only when farmers and ranchers cull their flock of animals no longer useful for breeding. As there is only a small demand for mutton for table cuts, most mutton is referred to as manufacturing meat and utilized mostly in the production of sausages and other comminuted products.

U.S. and Foreign Industry Profiles

U.S. Industry

Structure of Industry

The structure of the sheep industry in the United States is illustrated in figure 1. The Standard Industrial Classification (SIC) categories that pertain to the products in this summary are Sheep and Goats (0214 pt.), Meat Packing Plants (2011 pt.), and Wholesale Meats and Meat Products (5147 pt.).

Number of Firms, Geographic Distribution, and Concentration Among Firms

Growers

In 1990, the number of sheep-raising operations[1] in the United States totaled 109,690, down by 3 percent from 1986 (table 1). Although abundant resources are available for sheep production in the United States, most producers have chosen to raise livestock other than sheep. Industry sources indicate two factors that contribute to this situation are (1) U.S. demand levels for lamb and mutton (many other meats, like beef, are in greater demand) and (2) the economic return to the farmer or rancher for sheep in relation to that for other crops or livestock. Hence, the U.S. sheep population is relatively small.

Sheep growing is not highly concentrated; many operations consist of only a few sheep and belong to part-time or hobby farmers. Table 2 shows the U.S. sheep population by geographic regions as of January 1, 1986, to January 1, 1991. The U.S. sheep population rose by 10 percent from January 1, 1986, to January 1, 1991. Although the Corn Belt[2] region had the greatest number of sheep-raising operations (42 percent), the Western States[3] accounted for over 75 percent of the sheep population annually during 1986-91 (tables 1 and 2).

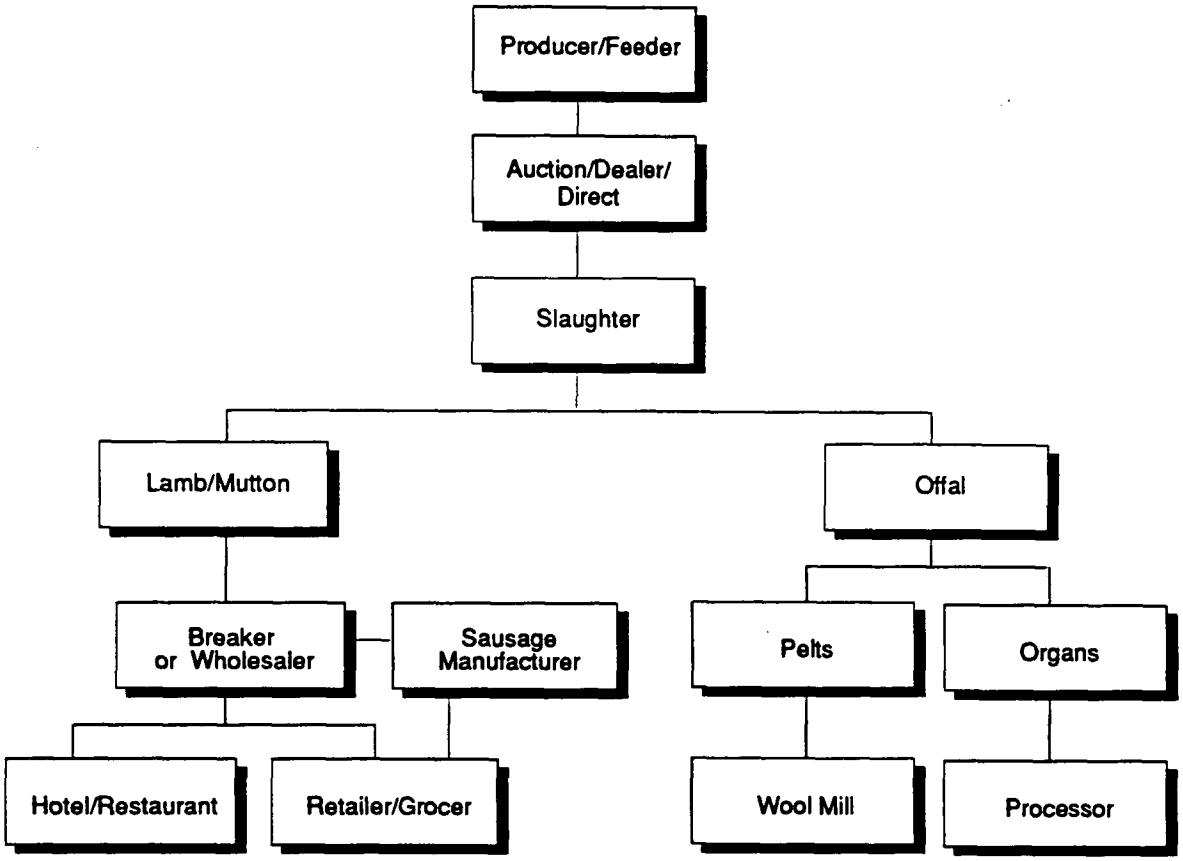
In 1990, 45,800 operations with sheep were located in the Corn Belt. These operations averaged only 19 animals each and accounted for only 18 percent of the total U.S. sheep population as of January 1, 1991. In

[1] The USDA defines a sheep-raising operation as an operation having one or more sheep on hand at any time during the year.

[2] The Corn Belt consists of the States of Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, Ohio, and Wisconsin.

[3] The Western States consist of Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming.

Figure 1
Sheep and meat of sheep: Structure of the U.S. Industry



Source: American Sheep Producers Council and USITC staff.

the Corn Belt, sheep are frequently kept on land not suitable for raising grain or for other farming activities. The Western States accounted for 42,450 U.S. sheep operations in 1990. These operations averaged 197 animals each and accounted for 75 percent of the total U.S. sheep population as of January 1, 1991. In the Western States, sheep are often the primary or only source of income for the operator, although sheep are also frequently part of diversified farming operations. Most of the remaining 20 percent of U.S. sheep-raising operations are located in the northeastern United States and border regions of the southeastern United States. These sheep accounted for 7 percent of the total U.S. sheep population on January 1, 1991.

Officials of the American Sheep Industry Association (ASIA) contend that the number of payments under the Federal Wool Incentive Program is a better measure of the number of growers than that of the number of operations with sheep.[4] These payments, as reported by the USDA are shown in the following tabulation:

Year	*Number of payments*
1986	74,371
1987	76,906
1988	88,322
1989	82,072
1990[1]	72,540

[1] Preliminary.

[4] The number of operations with sheep includes sheep owned by hobbyists and others who are not generally motivated by profit.

Table 1
Operations with sheep, by region, 1986-90

Region	1986	1987	1988	1989	1990
Corn Belt	48,100	47,400	46,400	46,100	45,800
Western States	45,000	44,150	44,500	43,050	42,450
Other	19,480	22,090	22,540	21,890	21,440
Total	112,580	113,640	113,440	111,040	109,690

Source: Compiled from official statistics of the U.S. Department of Agriculture.

Table 2
U.S. sheep population, by region, 1986-91

(1,000 animals)

Region	January 1— 1986	1987	1988	1989	1990	1991
Western States	7,843	8,079	8,363	8,188	8,494	8,373
Corn Belt	1,751	1,873	1,904	1,951	2,122	2,045
Other	551	620	678	719	752	782
Total	10,145	10,572	10,945	10,858	11,368	11,200

Source: Compiled from official statistics of the U.S. Department of Agriculture.

Employment in the sheep-raising operation is difficult to measure because of several factors. In some areas, such as the Corn Belt, sheep are most commonly kept as components of diversified farming operations, thus sheep raising constitutes only part-time employment. Also, many of the sheep-raising operations are family-run businesses, wherein much of the labor is performed by family members at little or no out-of-pocket cost (unpaid labor).

The number of man-hours required to manage the stock ewes on farms as of January 1 of a calendar year can indicate employment trends in the sheep-raising industry. During 1986-90, an average of 3.50 man-hours (based on USDA estimates) was required to raise one ewe. The following tabulation shows the number of ewes on farms during 1986-90 and the total man-hours required to manage the ewes (in thousands of animals and thousands of man-hours):

Year	Number of ewes[1]	Man-hours
1986	6,958	24,353
1987	7,087	24,805
1988	7,348	25,718
1989	7,187	25,155
1990	7,609	26,632

[1] Ewes 1 year old and older kept for breeding purposes.

Employment, as implied by the number of man-hours required to manage ewes, generally increased during 1986-90.

Feedlot operators

Lambs are the only common farm animals that can be grown to the Choice grade without supplemental feed, and when pastures are good, they are frequently so managed. Alternatively, at about 6 months of age and about 55 to 90 pounds in weight, they are shipped to feedlots for about 2 to 3 months of intensive feeding and finishing on grain (primarily corn) prior to slaughter. During this period, lambs are generally referred to as feeder lambs; when ready for slaughter, they are called fed lambs, slaughter lambs, or fat lambs.

Officials of the National Lamb Feeders Association report that there are about 100 large-volume lamb feedlots in the United States, although there are many small-volume feedlots. Feedlot operators may feed lambs they own or may feed lambs for other people on a fee-for-service or some type of partnership basis. As shown in table 3, lamb feeding tends to be concentrated in a few States.

Packers

In 1990, there were 815 Federally inspected (FI) sheep-and lamb-slaughtering plants in the United States, down by 15 percent from 1986. Factors reported to contribute to the decline include labor difficulties, industry concentration, packer/grower contractual arrangements, and competition from imports of lamb

Table 3
Lamb: Feedlots, by principal State, 1987-91

(1,000 animals)

State	January 1— 1987	1988	1989	1990	1991
California	185	170	160	225	280
Colorado	310	360	380	385	250
Texas	150	150	170	200	180
Wyoming	85	115	117	100	110
Oregon	90	90	125	110	106
Kansas	70	95	98	102	63
All other	623	601	596	640	741
Total	1,513	1,581	1,646	1,762	1,730

Source: USDA, *Sheep and Goats*, Feb. 4, 1991.

meat. USDA reports that of the FI plants, only 30 (4 percent) had the capacity to slaughter 10,000 or more sheep and lambs annually; these plants accounted for 95 percent of the slaughter in 1990. Four Western States (Colorado, Texas, California, and Washington) accounted for 56 percent of sheep and lambs slaughtered in 1989, and four States in the Corn Belt (Kansas, Iowa, Illinois, and Michigan) accounted for 26 percent in 1989.

Labor Skill Levels and Productivity

Sheep raising, as well as the processing of lamb meat, generally requires good management skills and an attentive labor force. Death losses of sheep and lambs are generally higher than those of other livestock, primarily because sheep are highly susceptible to disease and death from predators.[5] As a result, sheep production requires more labor per animal unit than most other livestock enterprises.[6] Processing of the meat at the plant level involves the health and sanitary practices, or skills associated with handling perishable foods.

Productivity in the live sheep industry (as measured in terms of the annual lamb crop per 100 ewes) fluctuated from 98 in 1988 to 107 in 1989 and showed no discernable trend (table 4). Adverse weather, during the breeding season or when the lambs are born, often contributes to a reduced lambing rate and a lower lamb crop. However, if increasing numbers of ewes are kept for breeding purposes, as occurred in 1990, the lamb crop may be larger even if the lambing rate declines.

Productivity in the lamb meat and mutton industry (as measured by the output of lamb and mutton per slaughter plant) increased by about 27 percent during the period 1986-90, as shown in the following tabulation:

Year	Lamb and mutton production (million pounds)	Number of Federally inspected plants	Output per plant (1,000 pounds)
1986	330	954	346
1987	310	906	342
1988	329	877	375
1989	342	869	394
1990	357	815	438

The increase in output per plant was due, in part, to the 15-percent decline in the number of Federally inspected slaughter plants coupled with an increase in total number of lambs slaughtered and an increase in their average carcass weight.

Vertical and Horizontal Integration

There is some vertical integration in the sheep industry. Certain large-volume lamb packers are known to own sheep operations. In addition, some of them

[5] USDA reports that in 1990, 11 percent of the inventory of sheep were lost, compared with 4 percent for cattle. In 1990, a total of 490,000 sheep and lambs, valued at $21.7 million were killed by predators.

[6] USDA defines an animal unit as one cow or five sheep.

Table 4
Sheep and lambs: U.S. ewes kept, lambing rate, and lamb crop, 1986-90

Year	Ewes kept	Lambing rate[1]	Lamb crop
	1,000 animals	(per 100 ewes)	1,000 animals
1986	6,958	106	7,396
1987	7,087	103	7,289
1988	7,348	98	7,206
1989	7,187	107	7,725
1990	7,609	101	7,704

[1] Number of lambs born per ewe.

Source: Data compiled from official statistics of the U.S. Department of Agriculture.

also are owners, contractors, or both of feeder lambs for slaughter and then distribute the meat through their established marketing channels. The *Packers and Stockyards' Administration Statistical Report 1989 Reporting Year* shows that during 1989, packers fed 1.4 million lambs, equal to 28 percent of lamb slaughter.[7] Industry sources report there has been limited movement by a few lamb feeders into the lamb packing business. Trade and industry sources report little integration with foreign suppliers and no significant domestic/foreign ventures. There is also a limited degree of horizontal integration in the packing sector, as some of the larger packers also slaughter and distribute various livestock.

Special Considerations

Growers have for many years expressed concern about packer feeding of lambs. Growers contend that packers can time the slaughtering of the lambs they feed to exert maximum price influence. Thus, when market prices for live lambs rise, packers who feed lambs can temporarily reduce purchases but continue to operate their slaughter plants using lambs they have fed. Packers contend that they try to obtain an adequate supply of lambs at what they believe to be competitive prices in order to continue operating their plants efficiently.

Many sheep growers report that they are unable to hire competent native U.S. sheepherders but could hire very good sheepherders from foreign countries, including Mexico, Peru, Spain, and Greece. Growers report that recent modifications in migrant labor laws and regulations have improved the labor situation somewhat; however, nearly all express dissatisfaction with the difficulty in satisfying the requirements of the laws and regulations.

Certain growers in the Western States expressed their concerns about the administration of public lands for sheep grazing as well as the rates charged for grazing public lands. They contend that wildlife and recreational concerns are addressed at the expense of livestock concerns. For example, certain poisons formerly used to control coyotes are now banned, as they have been determined to threaten endangered species. The use of pesticides by sheep growers has been a major component in controlling predator damage; however, recent Federal and State laws severely restrict pesticide use. All pesticides used in the United States must be registered with the Environmental Protection Agency (EPA), and use is generally limited to certified pesticide applicators. According to the ASIA, the net result of increasingly restrictive regulations has been the near elimination of toxicants legally available for predator damage control.[8]

[7] USDA's Packers and Stockyards' Administration reports that these statistics include sheep and lambs fed by or for meat packers and transferred from feedlot for slaughter during the reporting year.

[8] Sheep Industry Development Program, Inc., *Sheep Production Handbook*, 1988, p. PRED.CNTL-38.

Capital Investment

Maintaining sheep and raising live lambs usually requires limited generation of capital. Sheep are grazing animals and spend the greater part of their lives in pastures or on range lands, rather than in confinement. Some growers, however, confine their ewes at the times their lambs are born, especially during inclement weather, because newly born lambs require protection. Such confinement is limited, and facilities so used are basic and require limited capital expenditures for modernization. Similarly, feedlots for lambs raised to slaughter weights typically require limited generation of capital to finance after they are operative. Whereas feedlots generally require more generation of capital to finance facilities such as those used for storing, mixing, and dispensing feed and altering facilities, such capital requirements are, for the most part, one-time startup costs that subsequently require limited modernization.

Growers consider their flocks of breeding animals, especially females, as being their productive facilities that ultimately require replacement and, ideally, genetic improvement. In recent years, consumers have demanded leaner meat and growers have responded by breeding animals that are genetically predisposed to being leaner and more muscular. Each year, growers retain their most desirable female lambs as replacements for less desirable older females. To the extent that growers experience an opportunity cost by retaining these desirable animals that could otherwise be sold for cash, they incur a capital expenditure. Also, growers typically purchase male animals, or rams, from unrelated flocks in order to preclude undesirable inbreeding and to speed genetic improvements. Growers justify large expenditures for rams by noting that they contribute half of the genetic makeup of each lamb they sire (which may be 50 or more per year) whereas females contribute half of the genetic makeup of lambs they bear (usually only one or two per year).

Officials of lamb packing and processing plants report that only periodically are they required to generate capital to finance the modernization of their domestic plants and equipment. Many major lamb packers and processors are subsidiaries of large agribusiness corporations whose lamb packing and processing activities account for only a small share of their total operation, and the generation of capital to finance modernization, when needed, is usually part of an overall corporate strategy.

Grower Profitability

Data concerning costs of production and gross value of production for sheep growers are published annually by the USDA. The costs of production include expenses assumed to be cash costs (feed, hired labor, machinery and building repairs, taxes, interest, and various other expenses). The gross value of production consists of the value of lambs raised, wool sold, income from the Federal wool incentive and unshorn-lamb payment programs, and income from sales of cull ewes. Along with the costs and value of

production, the USDA publishes a capital-replacement cost. The value of production less cash costs and capital-replacement costs (i.e. grower profitability) during 1985-89 is shown in the following tabulation (per ewe):

Year	Grower profitability
1985	$17.21
1986	18.20
1987	25.12
1988	17.79
1989	14.51

The decline in grower profitability in 1988 and in 1989 was caused primarily by lower returns because of lower prices for live animals and, to a lesser extent, higher costs, principally rising feed costs.

Marketing Methods

Growers have several methods available for selling their animals, though some methods are more prevalent than others in certain areas of the country. Factors such as transportation costs, marketing fees and services, and other factors of competition are important considerations for producers when selecting a marketing strategy.

Live lambs in the United States, whether feeders or slaughter lambs, may be sold at auction markets, terminal markets, or nonpublic markets. Nonpublic markets include mostly direct sales to packers, usually negotiated by growers or middlemen.[9] There has been a long-term trend toward sales of lambs through nonpublic markets, and in recent years, slightly more than 80 percent of lambs sold for slaughter have been sold that way.

Direct marketing incorporates a number of different methods with one common element: lamb being sold without a middleman. Large packers usually purchase their lambs directly from lamb feeders.[10] Direct marketing has the advantage of reducing the high costs associated with hauling, unloading, standing, and reloading of lamb at assembly points or public markets.[11]

Small-volume producers usually sell their lambs through public auctions or electronic markets. Electronic markets (teleauctions and computer auctions) were developed because they allow producers to expose their product to a greater number of buyers. Electronic markets are particularly beneficial for producers that do not have sufficient volume to sell lambs in truckload quantities. Buyers bid on a certain type or grade of lamb, with price differences specified for lambs that differ from the type or grade being offered. Producers then send the lambs to nearby assembly locations where they are loaded into trucks and shipped to the buyers. The electronic market allows a smaller volume producer to reduce costs somewhat, because lambs from various producers are combined and sold in truckload quantities.

Almost all firms that slaughter lambs process at least some of their carcasses into primal[12] and subprimal cuts, and some firms produce retail cuts as well. According to an American Sheep Industry Association publication, about 65 percent of lamb received by retailers is in carcass form.[13] Some carcasses move to a type of wholesaler called a breaker. Breakers divide carcasses into primal, subprimal, or retail cuts for resale to retail outlets. Some lamb cuts are used for processing into controlled portions for food service outlets. According to industry sources, an increasing share of lamb, including lamb carcasses, has been sold as boxed lamb. Boxed lamb is lamb meat that has been divided into primal or subprimal cuts and sealed in air-tight plastic material. The net revenues for the slaughter animal are determined by the wholesale carcass price, pelt and organ prices, slaughter and processing costs, and freight costs. The most valuable byproduct of the lamb is the pelt, which accounts for approximately 5 percent of the live lamb value. The bulk of lamb meat processed in the United States is distributed, through the wholesaling branches of the meat packers or through brokers to retail food stores, hotels, restaurants, and institutions. The pelts and organs are sold through different channels.

Restaurant managers prefer frozen meat because of the increased shelf life. Frozen meat can be stored up to a year or even longer, although most is purchased by the retail consumer within 6 months of the time the lamb is slaughtered. Retail food outlet managers generally prefer fresh cuts, because most retail consumers prefer fresh meat. Competition from imported lamb meat occurs at the wholesale and retail levels. Imported meat is sold to grocers and to wholesalers, who then sell to grocers or to hotels, restaurants, and institutions.

Pricing Practices

A number of methods are used to determine a price for feeder or slaughter lambs, the most popular of which are pricing on the basis of live weight, sliding scale, stop weight, guaranteed yield, and dressed weight.[14] The use of a particular pricing method depends on the location of the seller and upon the packer's familiarity with the seller or marketing agents.[15] Invariably, packers use one or a combination

[9] USDA, *Slaughter Lamb Marketing: A Study of the Lamb Industry*, January 1987.

[10] Sheep Industry Development Program, Inc., *Sheep Production Handbook*, 1988.

[11] Ibid.

[12] Wholesale cuts such as the shoulder, rib, breast, loin, and leg.

[13] Sheep Industry Development Program, Inc., *Sheep Production Handbook*, 1988, p. MKT-8.

[14] For additional information on pricing methods see U.S. International Trade Commission, *U.S. Imports of Lamb Meat: Final Monitoring Report*, investigation No. 332-264, USITC publication 2345, December 1990, pp. 4-1 and 4-4.

[15] USDA, *Slaughter Lamb Marketing: A Study of the Lamb Industry*, January 1987.

of the above-mentioned pricing methods to encourage sales of high-quality lambs, to discourage production of excessively fat lambs (which are less preferred by consumers), and to reduce their risks regarding quality and yield.

The price of most of the meat sold by packers to wholesalers is negotiated; however, some prices are derived according to a formula often based on the National Provisioner's Yellow Sheet.[16] For example, the packer and the wholesaler may agree on a premium the same as or different from the Yellow Sheet price. This difference may reflect location, quality factors, or both. Packers prefer to sell on a carlot basis, but because the quantity of lamb demanded is small, they often take less-than-carlot orders.

Information obtained during the USITC's recent lamb-meat investigation[17] on pricing practices at the retail level indicates that most prices paid by retailers are negotiated. In addition, the most important factors affecting prices paid by retailers include the leadtime from the date of purchase to the date the grocers receive the fresh or chilled lamb meat, quality, size of cuts, and country of origin.

Research and Development Expenditures

The Cooperative State Research Service (CSRS) of USDA collects data on public research expenditures for sheep and wool. The funding includes expenditures from all sources (Federal, State, and private) and is used to research such areas as genetics, nutrition, reproduction, animal health, marketing, and promotion. CSRS reports that public research expenditures for sheep and wool increased steadily, from $27.9 million in 1986 to $35.5 million in 1989.[18]

U.S. Government Programs

The National Wool Act of 1954, as amended, which was extended through Dec. 31, 1995, by the 1990 Farm Bill (Public Law 101624), provides for, among other things, incentive payments directly to sheep growers for wool their animals produce. The incentive payments, which are administered by USDA, are made to encourage wool production and wool quality. The money available to sheep growers is limited to a portion of the funds derived from the tariffs on imported wool. During 1986-90, such payments ranged from $39.4 million in 1988 to an estimated $105 million in 1990.

[16] The National Provisioner is a private price reporting service, and the Yellow Sheet is one of its publications.

[17] USITC, *U.S. Imports of Lamb Meat: Final Monitoring Report*, investigation No. 332-264, USITC publication 2345, December 1990.

[18] Larry R. Miller, principal animal scientist, USDA, CSRS, letter to USITC staff, Mar. 22, 1991.

Consumer Characteristics and Factors Affecting Demand

U.S. lamb-meat consumption is concentrated on the east and west coasts; according to an ASIA publication, the northeast and mid-Atlantic States account for more than 50 percent of lamb-meat consumption, with New York State alone accounting for 30 percent. California is estimated to account for another 17 percent. Other significant locations for lamb-meat consumption include Chicago, IL, and Miami, FL. Lamb-meat consumption traditionally is more common to people of Mediterranean background and to certain religious groups, notably those persons of the Jewish and Islamic faiths.

The demand for lamb meat is influenced by such factors as the prices of substitute meats—e.g., beef, pork, and poultry—consumer income, and consumer attitudes. Lamb-meat prices are generally higher than those of substitute meats, and per capita consumption of lamb meat is significantly less than consumption of beef, pork, and poultry. Also, the demand for lamb is greatest in the spring and early summer, responding to holiday traditions and consumer taste preferences for spring lamb.[19] Some consumers contend that meat derived from grain-fed lambs has a more mild and flavorful taste and a more subtle aroma than meat derived from grass-fed lambs. Industry sources maintain that health perceptions among some consumers, especially perceptions about cholesterol, may lower demand for lamb meat. The demand for mutton is influenced by the price of other manufacturing meats, such as beef.

Foreign Industry

The following tabulation[20] shows sheep inventories for major sheep-producing countries and the United States for 1989 (in million head):

Area	*Number of sheep*
Australia	166.0
Soviet Union	140.7
China	111.4
New Zealand	60.6
Turkey	49.0
United Kingdom	42.9
Eastern Europe	39.2
India	39.0
Argentina	29.3
South Africa	24.9
Spain	24.2
United States	10.9

Australia is the largest sheep-producing country in the world, followed by the Soviet Union, China, and New Zealand. The European Community (EC) (primarily the United Kingdom and Spain) is also a large sheep-producing region. Sheep kept for the production

[19] Sheep Industry Development Program, Inc., *Sheep Production Handbook*, 1988, p. MKT 3-4.

[20] *U.S. Sheep Industry Market Situation Report 90-91*, p. 1; (based on Commonwealth Secretariat data).

of wool are common in Argentina, Australia, the Union of South Africa, and China. Some sheep are kept in European countries and in the Middle East (Turkey and Saudi Arabia) for the production of milk, as well as for meat. Sheep's milk is usually used in the production of cheese in these areas. In some parts of the Middle East and the Soviet Union, specific breeds of sheep, such as Karakul and Astrakhan, are raised primarily for the production of pelts. The majority of sheep in Australia are of the Merino breed, known for its fine wool. New Zealand's sheep are dual-purpose breeds, producing both high-quality wool and meat.

New Zealand and Australia are the major lamb-meat and mutton exporters, accounting for approximately 80 percent of world exports during 1986-90. These two countries are also major world suppliers of live sheep and lambs. The EC is also a major lamb-meat and mutton exporter; however, the majority of such exports consist of intra-EC trade.

New Zealand

Sheep are raised throughout New Zealand, and producers benefit from ideal climatic and grazing conditions. In addition, much of the land is too steep for row crops. Sheep in New Zealand generally require no shelter and little or no supplemental feed (grain), as grazing in most of the country is available nearly year round. Sheep on New Zealand farms decreased from 67 million in 1986 to 58 million in 1990 (calendar year ending June 30). In recent years, the number of lambs produced in New Zealand has declined irregularly, reflecting a downward trend in the total sheep flock and a reduction in the number of ewes kept for breeding purposes. The removal of certain New Zealand support programs for sheep reportedly contributed to these reductions, as some sheep producers moved to alternative sources of income, including cattle.

Meat processing is handled mainly by a number of private-sector companies, some of which are owned by producer cooperatives. A significant development in the New Zealand processing sector is the decline of large plants and the rise of the single-chain killing plants using modern technology and shift work. The single-chain processing plants can slaughter up to 900,000 lambs a year and require lower labor input than larger works but are more capital intensive.

The New Zealand Meat Producers Board (Meat Board) oversees the marketing of meat for export and attempts to create an environment that ensures the highest returns to the New Zealand producer for meat exported. The New Zealand Lamb Company (owned by the Meat Board and a number of meat processors) was established by the Board to market lamb-meat exports in North America. The Meat Board issues licenses to other meat exporters who can devote the necessary resources to develop markets overseas. There are approximately 50 exporters licensed by the Meat Board in New Zealand, many of whom are also processors.

New Zealand's sheep-meat production declined from 695,000 tons in 1986 to 597,000 tons in 1990 (table 5). The decline in sheep-meat production reflects the continued decline in sheep farming and severe drought during much of the period, which not only resulted in low lambing rates but also in low lamb-slaughter weights. Lamb meat accounted for approximately 67 percent of total sheep-meat production annually during 1986-90, and mutton accounted for the remainder. New Zealand's production of lamb meat generally declined from 513,000 tons in 1986 to 391,000 tons in 1990, or by 24 percent, reflecting a decline in the number of lambs slaughtered (table 5). Mutton production fluctuated during the period from a low of 182,000 tons in 1986 to a high of 241,000 tons in 1989, indicating higher slaughter rates of adult sheep during periods of drought.

In 1990, New Zealand accounted for approximately 56 percent of world exports of sheep meat and was the major world exporter. Exports of New Zealand sheep meat declined from 582,000 tons in 1986 to 479,000 tons in 1990, or by 18 percent, reflecting the trend of decreasing sheep numbers (table 5). New Zealand lamb-meat exports declined by 25 percent during 1986-90, totaling 367,000 tons in 1990 (table 5). During 1986-90, exports accounted for about 95 percent of New Zealand's lamb-meat production. About half of New Zealand's lamb meat is exported in frozen carcass form. Increasing amounts are now being processed into frozen cuts by New Zealand processors, thus adding value for the meat processors. Industry sources report some headway has been made in exporting chilled lamb-meat products (but from a very small base). New Zealand's major lamb-meat export markets include the EC (primarily the United Kingdom), the Middle East (primarily Saudi Arabia and Iran), and Japan. The United States annually accounted for only about 2 percent of New Zealand's lamb-meat exports during 1986-90.

Exports of mutton from New Zealand ranged from 91,000 tons in 1986 to 141,000 tons in 1989 (table 5) and accounted for an annual average of 55 percent of production. The bulk of New Zealand's mutton is exported in frozen carcass and frozen boneless form. The largest markets for New Zealand mutton are the EC (primarily the United Kingdom), the Soviet Union, and Japan. Much of the exports to Japan include reexports via South Korea. South Korea processes the mutton to meet strict Japanese manufacturing requirements before reexporting.[21]

[21] New Zealand Meat Producers Board, *Annual Report 1990*, p. 25.

Table 5
Sheep meat: New Zealand production, exports, and exports as a share of production, by type, 1986-90

Type	Production[1]	Exports	Exports as a share of production
	— 1,000 tons, carcass weight —		Percent
Lamb:			
1986	513	491	96
1987	449	433	97
1988	461	435	95
1989	433	412	95
1990[2]	391	367	94
Mutton:			
1986	182	91	50
1987	235	136	58
1988	217	119	55
1989	241	141	59
1990[2]	206	112	54
Total sheep meat:			
1986	695	582	84
1987	684	569	83
1988	678	554	82
1989	674	553	82
1990[2]	597	479	80

[1] Includes inspected slaughter for local and export markets.

[2] Estimated.

Source: Data compiled from New Zealand Meat and Wool Board's Economic Service, *Annual Review of the New Zealand Sheep and Beef Industry, 1989-90*, p. 21.

New Zealand is also a significant exporter of live sheep and lambs. New Zealand's exports of live sheep and lambs increased from approximately 416,000 animals in marketing year 1985/86 to about 1.1 million animals in 1988/89, with the Middle East accounting for the bulk of the export growth. During 1988/89, New Zealand's live sheep exports to the Middle East amounted to 952,000 animals, or 87 percent of total live sheep exports. Shipments to Saudi Arabia totaled 593,000 animals, or 54 percent of total exports. Much of the live sheep exported to Saudi Arabia consists of young animals to supply the Haj religious slaughter market. The United States accounted for the bulk of the remaining exports, some 109,500 animals, or about 10 percent of total exports.

Australia

The number of sheep in Australia, the world's largest sheep producer, increased by 18 percent during 1986-90, totaling 173 million in the latter year. Australian production of live lambs increased from 34 million animals in 1986 to 41 million animals in 1990, or by 18 percent. Sheep production is widely distributed throughout Australia, with most large operations located in Queensland, South Australia, Western Australia, and New South Wales. Industry sources report that the growth in sheep production has occurred largely because of the demand for wool and favorable weather conditions. Live lamb production (the lamb crop) in Australia is less dependent on the total sheep inventory than is such production in the United States and New Zealand, because many sheep in Australia are maintained solely for the production of wool. In recent years, approximately 50 percent of the Australian lamb crop was retained, instead of going for slaughter, as compared with about 28 percent in New Zealand and 30 percent in the United States.[22] During 1986-90, over 84 percent of Australia's lamb-meat production was consumed domestically, and mutton exports accounted for over 50 percent of mutton production.

According to members of the Australian sheep industry, most Australian slaughter plants are privately owned and operate 52 weeks of the year. However, industry sources report there is considerable excess capacity in the slaughter plants.

The Australian Meat and Live-stock Corporation (AMLC) is a statutory authority whose main responsibility is to facilitate the marketing of Australian meat and livestock, both domestically and in foreign markets. The AMLC has administrative responsibility for the licensing and quality-assurance programs of exporters. In 1987, the Authority for

[22] Data compiled from USITC *U.S. Imports of Lamb Meat: Final Monitoring Report*, investigation No. 332-264, USITC publication 2345, December 1990, pp. 5-7, 5-8, 8-4, 9-3.

Uniform Specification for Meat and Livestock (AUS-MEAT) was established under AMLC to initiate a uniform product description and to maintain quality control and meat standards. Since then, export slaughter plants have been required to be accredited by AUS-MEAT. Accreditation of plants that slaughter for domestic consumption remains voluntary.[23]

Australian production of sheep meat generally increased, from 629,000 tons in 1986 (year ended June 30) to 683,000 tons in 1990, or by 9 percent (table 6). Mutton production fluctuated from a low of 280,000 tons in 1986 and 1989 to a high of 358,000 tons in 1990. Mutton production is strongly influenced by seasonal conditions and wool prices. Sheep producers will retain sheep for wool production if wool prices are favorable rather than send them to slaughter. For example, the 28-percent increase in mutton production that occurred in 1990 over 1989 reflects, in part, the unfavorable outlook for wool, thus an increase in adult sheep slaughtering. Australian production of lamb meat decreased from 349,000 tons in 1986 to 319,000 tons in 1989, or by 9 percent, as sheep producers concentrated on wool production. Such production increased to 325,000 tons, or by 2 percent in 1990. Lamb-meat production as a share of total sheep-meat production declined from 55 percent in 1986 to 48 percent in 1990; whereas mutton production increased from 45 percent to 52 percent during the period.

Australia accounted for approximately 32 percent of world exports of sheep meat in 1990. Australian sheep-meat exports fluctuated during 1986-90, totaling 240,000 tons in 1990 (table 6). During the period, about 67 percent of annual average sheep-meat exports was made up of mutton. The Middle East is Australia's largest export market for mutton; other leading markets include Japan, the Soviet Union, and New Guinea. Australian exports of mutton to the United States have increased in recent years (from 2.6 million tons in 1986 to 5.5 million tons in 1990), because of the availability of inexpensive supplies. Mutton competes with other meats, such as beef, in the manufacturing sector; thus higher beef prices should result in greater mutton sales.

Australian lamb-meat exports ranged from a low of 44,000 tons in 1989 to a high of 60,000 tons in 1987 (table 6). Exports as a share of production totaled 14 percent in 1990. Major markets for Australian lamb meat include the Middle East, New Guinea, the United States, and Japan. The United States accounted for 17 percent of Australian lamb-meat exports in 1990. In recent years, Australia has experienced significant growth in exports of chilled lamb-meat exports versus frozen lamb meat.

Australia is also a significant exporter of live sheep and lambs. Australian exports of live sheep and lamb, primarily destined for slaughter, decreased from a high of 7.9 million animals in 1987 to 6.3 million animals in 1989. Exports in 1990 further declined to 4.5 million animals. The Middle East (primarily Saudi Arabia and Kuwait) is the largest market and accounted for nearly all of Australia's live sheep exports during the period 1986-90. Twelve Australian shipments, or parts thereof, of live sheep to Saudi Arabia were rejected during 1989-90 because of disease and age. These shipments largely accounted for the decline in total Australian live sheep exports. As a result of the trade disruption, the AMLC has set new guidelines requiring exporters to undertake rigorous selection procedures to ensure that only fit and healthy sheep are exported to the Middle East. In addition, the Saudi Arabian Ministry of Agriculture and Water has stipulated that only sheep under 3 years of age are acceptable for their market.[24]

U.S. Trade Measures

Tariff Measures

The provisions for live sheep in the Harmonized Tariff Schedule of the United States (HTS) apply to all animals regardless of age, sex, or size. The provisions for meat (fresh, chilled, or frozen) specify whether the meat is from sheep or from lambs. All imports are subject to health and sanitary regulations administered by the USDA. In addition, imports from New Zealand have been subject to countervailing duties.[25]

Table 7 shows the general and special pre-Uruguay Round of Multilateral Trade Negotiations (MTN) column 1 rates of duty applicable to U.S. imports of live sheep and meat of sheep, fresh, chilled, or frozen, for 1990 and U.S. exports and U.S. imports of the articles. The aggregate trade-weighted average rate of duty for all products included in this summary averaged 0.07 percent in 1990. The ad valorem equivalent for imports of fresh, chilled, or frozen lamb meat and mutton averaged 0.4 percent and 3.5 percent, respectively, for 1990. Appendix A contains an explanation of tariff and trade agreement terms.

Nontariff Measures

Health and Sanitary Regulations

Certain health and sanitary regulations with respect to U.S. imports of live sheep and lambs, as well as lamb meat and mutton, fresh, chilled, or frozen are administered by the USDA to protect the U.S. livestock industry and to ensure an adequate supply of safe meat for consumers. For example, sources of imports of the aforementioned articles are limited to those from countries that have been declared free of rinderpest and

[23] Australian Meat & Live-stock Corporation, *Annual Report, July 1987-June 1988*, p.7.

[24] Australian Meat & Live-stock Corporation, *Annual Report July 1989-June 1990*, p. 26.

[25] "Lamb Meat From New Zealand; Final Results of Countervailing Duty Administration Review," 55 F.R. 42750, Oct. 23, 1990.

Table 6
Sheep meat: Australian production, exports, and exports as a share of production, by type, 1986-90[1]

Type	Production	Exports	Exports as a share of production
	1,000 tons, carcass weight		Percent
Lamb:			
1986	349	56	16
1987	327	60	18
1988	325	57	18
1989	319	44	14
1990	325	45	14
Mutton:			
1986	280	163	58
1987	315	189	60
1988	325	182	56
1989	280	156	56
1990	358	195	54
Total sheep meat:			
1986	629	219	35
1987	642	249	39
1988	650	239	37
1989	599	200	33
1990	683	240	35

[1] Data are reported on crop-year basis July 1-June 30.

Source: Data compiled from *Australian Meat and Live-Stock Statistical Review, July 1989-90*, p. 26.

foot-and-mouth diseases[26] by the U.S. Secretary of Agriculture.[27] The general effect of such prohibitions has been to allow imports only from Australia, New Zealand, North America, and certain areas of Europe.

The USDA administers section 20 of the Federal Meat Inspection Act,[28] which provides, among other things, that meat and meat products prepared or produced in foreign countries may not be imported into the United States ". . . unless they comply with all the inspection, building construction standards, and all other provisions of this chapter [ch. 12, Meat Inspection] and regulations issued thereunder applicable to such articles in commerce in the United States." Section 20 further provides that "all such imported articles shall, upon entry into the United States, be deemed and treated as domestic articles subject to the provisions of this chapter [ch. 12, Meat Inspection] and the Federal Food, Drug, and Cosmetic Act [12 U.S.C. 301]. . . ." Thus, section 20 requires that foreign meat-exporting countries enforce inspection and other requirements with respect to the preparation of the products covered that are at least equal to those applicable to the preparation of like products at Federally inspected establishments in the United States. It also requires that the imported products be subject to inspection and other requirements upon arrival in the United States to identify them and further ensure their freedom from adulteration and misbranding at the time of entry.[29] However, section 20 does not provide that the imported products be inspected by U.S. inspectors during their preparation in the foreign country.

The U.S. Secretary of Agriculture has assigned responsibility for the administration of the Department's section 20 functions to the Foreign Programs Division, Meat and Poultry Inspection Program, Food Safety and Inspection Service (FSIS). By the end of 1990, the FSIS had certified 29 countries as having meat inspection systems with standards equal to those of the U.S. program and had certified 1,370 foreign plants, including 134 in Australia and 89 in New Zealand. However, some of these plants ship only beef to the United States. The FSIS has veterinarians stationed outside the United States.[30] Plants exporting large volumes and other plants of special concern are visited at least once a year.

Pursuant to the 1981 Farm Bill,[31] the FSIS has placed increasing emphasis on review of a country's regulatory system as a whole, rather than on review of individual plants. FSIS now evaluates country controls

[26] Rinderpest and foot-and-mouth diseases are highly contagious, infectious diseases that can afflict cloven-footed animals (such as cattle, sheep, swine, and deer). Because the diseases are easily transmitted and debilitating, they are an ever-present threat to the U.S. livestock industry. The diseases do not present a direct threat to human health.

[27] Pursuant to sec. 306 of the Tariff Act of 1930 (19 U.S.C. 1306).

[28] 21 U.S.C. 620.

[29] See U.S. Senate, Agriculture and Forestry Committee, Report on S. 2147, S. Rep. No. 799 (90th Cong. 2d sess.) 1967, as published in 2 *U.S. Code Congressional and Administrative News*, 1967, p. 2,200. S. 2147, as modified, ultimately became Public Law 90-201 (the Wholesome Meat Act), approved Dec. 15, 1967.

[30] The number of certifications refer to all meat, including beef and veal. See USDA, *Meat and Poultry Inspection, 1990, Report of the Secretary of Agriculture to the U.S. Congress*, Mar. 1, 1991, p. 39 (hereinafter, *Meat and Poultry Inspection, 1990*).

[31] Sec. 1122 of Public Law 97-98, dated Dec. 22, 1981.

Table 7
Live sheep and meat of sheep and lamb; fresh, chilled or frozen: Harmonized Tariff Schedule subheading; description; U.S. col. 1 rate of duty as of Jan. 1, 1991; U.S. exports, 1990; and U.S. imports, 1990

HTS subheading	Brief description	Col. 1 rate of duty as of Jan. 1, 1991		U.S. exports 1990	U.S. imports 1990
		General	Special[1]		
				Million dollars	
0104.10.00	Live sheep	Free		16	2
	Meat of sheep, fresh, chilled, or frozen:				
0204.10.00	Carcasses and half-carcasses of lamb, fresh or chilled	1.1¢/kg	Free (CA,E,IL)	2	1
	Other meat of sheep, fresh or chilled:				
0204.21.00	Carcasses and half-carcasses	3.3¢/kg	Free (CA,E,IL)	(2)	(2)
	Other cuts with bone in:				
0204.22.20	Lamb	1.1¢/kg	Free (E,IL) 0.4¢/kg (CA)	(3)	10
0204.22.40	Other	3.3¢/kg	Free (E,IL) 2.3¢/kg (CA)	(3)	(2)
	Boneless:				
0204.23.20	Lamb	1.1¢/kg	Free (E,IL) 0.4¢/kg (CA)	(4)	2
0204.23.40	Other	3.3¢/kg	Free (E,IL) 2.3¢/kg (CA)	(4)	(2)
0204.30.00	Carcasses and half-carcasses of lamb, frozen	1.1¢/kg	Free (E,IL) 0.4¢/kg (CA)	(2)	(2)
	Other meat of sheep, frozen:				
0204.41.00	Carcasses and half-carcasses	3.3¢/kg	Free (E,IL) 2.3¢/kg (CA)	(2)	2
	Other cuts with bone in:				
0204.42.20	Lamb	1.1¢/kg	Free (E,IL) 0.4¢/kg (CA)	(5)	16
0204.42.40	Other	3.3¢/kg	Free (E,IL) 2.3¢/kg (CA)	(5)	4
	Boneless:				
0204.43.20	Lamb	1.1¢/kg	Free (E,IL) 0.4¢/kg (CA)	(6)	3
0204.43.40	Other	3.3¢/kg	Free (E,IL) 2.3¢/kg (CA)	(6)	(2)

[1] Programs under which special tariff treatment may be provided and the corresponding symbols for such programs as they are indicated in the "Special" subcolumn are as follows: Generalized System of Preferences (A); Automotive Products Trade Act (B); Agreement of Trade in Civil Aircraft (C); United States–Canada Free–Trade Agreement (CA); Caribbean Basin Economic Recovery Act (E); and United States–Israel Free Trade Area (IL).
[2] Less than $500,000.
[3] The value of U.S. exports is not available for this individual HTS subheading. However, total exports of fresh or chilled lamb and mutton cuts, with bone in was $3 million for 1990.
[4] The value of U.S. exports is not available for this individual HTS subheading. However, total exports of fresh or chilled boneless lamb and mutton did not exceed $500,000 for 1990.
[5] The value of U.S. exports is not available for this individual HTS subheading. However, total exports of frozen lamb and mutton cuts, with bone in was $2 million for 1990.
[6] The value of U.S. exports is not available for this individual HTS subheading. However, total exports of frozen boneless lamb and mutton did not exceed $500,000 for 1990.

Source: U.S. exports and imports compiled from data of the U.S. Department of Commerce.

in seven basic risk areas: residues, diseases, misuse of food additives, gross contamination, microscopic contamination, economic fraud, and product integrity.[32] As required by the 1981 Farm Bill, FSIS also vigorously carries on a species identification program under which the FSIS assures that meat is properly identified by origin or species.

Under the Federal Meat Inspection Act, all imported meat being offered for entry into the United States must be accompanied by a meat inspection certificate issued by a responsible official of the exporting country. The certificate must identify the product by origin, destination, shipping marks, and amounts. It must certify that the meat comes from animals that received veterinary antemortem and postmortem inspections; that it is wholesome, not adulterated or misbranded; and that it is otherwise in compliance with U.S. requirements. Imported meat is also subject to the same labeling requirements as domestically processed meats, i.e., the label must be informative, truthful, and not misleading.

Under the Federal Meat Inspection Act, U.S. inspectors at the port of entry inspect part of each shipment of meat. Representative sampling plans similar to those used in inspecting domestic meat are applied to each import shipment. Samples of frozen products are defrosted, canned meat containers are opened, and labels are verified for prior U.S. approval and stated weight accuracy. Specimens are routinely submitted to meat inspection laboratories to check compliance with compositional standards. Sample cans are also subjected to periods of incubation for signs of spoilage. Meat imports are also monitored for residues, such as pesticides, hormones, heavy metals, and antibiotics, by selecting representative samples for laboratory analysis. Special control measures are in effect for handling meat from countries when excessive amounts of residues are detected. These measures include refusing or withholding entry of the product from countries with a history of problems until results of laboratory analysis are received.

During 1990, 995,522 pounds of fresh, chilled, or frozen mutton and lamb meat constituting roughly 2.5 percent of the fresh, chilled, or frozen mutton and lamb meat offered for entry to the United States, was condemned or refused entry.[33] Australia accounted for 87 percent of the mutton and lamb meat condemned or refused entry to the United States and New Zealand accounted for the remainder.

Meat Import Act of 1979

By virtue of certain conditions set forth in the Meat Import Act of 1979,[34] which amended the Meat Import Act of 1964,[35] meat of sheep (except lambs), provided for in HTS subheadings 0204.21.00, 0204.22.40, 0204.23.40, 0204.41.00, 0204.42.40, and 0204.43.40 is subject to an absolute quota by Presidential proclamation; however, quotas have been imposed only once—late in 1976. Also, meat of sheep is subject to voluntary restraint agreements negotiated with major exporting countries under section 204 of the Agricultural Act of 1956. In addition to meat of sheep, the quotas and voluntary restraint agreements cover U.S. imports of fresh, chilled, or frozen meat of cattle and goats. Imports of meat of cattle account for virtually all such imports.

U.S. Government Trade-Related Investigations

On March 26, 1985, the American Lamb Co., the Denver Lamb Co., and the Iowa Lamb Corp. filed a petition with the International Trade Administration (ITA) of the U.S. Department of Commerce alleging that producers, processors, or exporters of lamb meat in New Zealand received benefits that constitute bounties or grants within the meaning of section 303 of the Tariff Act of 1930. Imports of such lamb meat from New Zealand were found by the ITA to be subsidized and have been subject to countervailing duties since June 25, 1985. On October 23, 1990, the ITA published final results of a fourth administrative review of the countervailing-duty order. Among other things, the ITA reported the termination of a New Zealand program that reduced the total estimated bounty or grant to 0.38 percent ad valorem, a rate that is considered to be de minimis. Therefore, ITA announced that it would instruct the U.S. Customs Service not to collect cash deposits of estimated countervailing duties until after publication of final results of the next administrative review. Because New Zealand's status as a "country under the Agreement" with respect to the GATT countervailing-duty code was terminated April 11, 1985, the U.S. International Trade Commission (ITC) did not conduct a so-called injury test.[36]

In December 1990, the ITC completed an investigation conducted under section 332(g) of the Tariff Act of 1930[37] for the purpose of monitoring and investigating U.S. imports of fresh, chilled, or frozen lamb meat.[38] The investigation was instituted October 20, 1988, pursuant to section 1937 of the Omnibus Trade and Competitiveness Act of 1988.

Foreign Trade Measures

Tariff Measures

Sheep-meat imports into the European Community are subject to a 10-percent ad valorem tariff, whereas imports of live sheep enter duty free. Imports of

[32] *Meat and Poultry Inspection*, 1984, p. 50.

[33] USDA, Food Safety and Inspection Service, *Meat and Poultry Inspection, 1990 Report of the Secretary of Agriculture to the U.S. Congress*, Mar 1, 1991, p. 47.

[34] Public Law 96-177, approved Dec. 31, 1979 (19 U.S.C. 1202).

[35] Public Law 88-482, approved Aug. 22, 1964 (19 U.S.C. 1202).

[36] See USITC, *U.S. Imports of Lamb Meat: Final Monitoring Report*, investigation No. 332-264, USITC publication 2345, December 1990, pp. 3-2 to 3-3.

[37] (19 U.S.C. 1332(g)).

[38] For additional information on the U.S. sheep industry see *U.S. Imports of Lamb Meat: Final Monitoring Report*, investigation No. 332-264, USITC publication 2345, December 1990.

registered (purebred) sheep into Mexico have a zero duty rate, whereas sheep for slaughter as well as sheep meat have a 10-percent duty rate. Imports of live sheep and lamb meat into New Zealand are free of duty. Imports of sheep meat into Australia enter free of duty from New Zealand, Papua New Guinea, Forum Island countries, and developing countries. Such imports into Australia from all other countries are subjected to a 2-percent ad valorem tariff. Canadian imports of U.S. purebred sheep enter duty free; and all other sheep from the United States are dutiable at 40¢ each. Canadian imports of purebred sheep from other most-favored nations (MFNs) enter free of duty, and imports of all other sheep enter at $1.00 per animal, except imports from countries with British Preferential Tariff status, which also enter duty free. Canadian duties on imports of U.S. sheep meat range from free to 4.6¢ per kilogram.[39] Such duties on imports from Australian and New Zealand range from free to 1.1¢ per kilogram, and import duties from other MFNs are subject to duties of 6.6¢ per kilogram. The general rate of duty for imports of live sheep into Japan is free, and the duty on imports of sheep meat is 10 percent.

Nontariff Measures

Imports of mutton and lamb into EC countries are subject to import quotas under various voluntary restraint agreements (VRAs) with a number of countries. The USDA reports that in March 1990, the EC announced that it had suspended import levies of 10 percent ad valorem on sheep meat, goat meat, and livestock entering from certain Eastern European countries.[40] The levy suspension was retroactive to January 1, 1989, for meat products and to January 1, 1990, for livestock. It is effective until December 31, 1992. According to the USDA, negotiations for VRAs have advanced sufficiently to warrant the suspension of the levy. Under the VRA, Eastern European countries voluntarily limit sheep meat, goat meat, and livestock exports to the EC to 28,650 metric tons annually, with an additional 4,500 metric tons approved for 1990.

Under the current EC/New Zealand VRA, New Zealand's exports of sheep meat and goat meat are limited to 205,000 metric tons a year. The 10-percent duty on New Zealand sheep meat and goat meat into the EC was reduced to zero effective December 1989.[41]

A VRA for sheep meat limits Australian exports to the EC to 17,500 metric tons a year. Of the 17,500 tons, an additional ceiling of 2,500 tons is applied for exports of chilled lamb for 1991. This ceiling will increase to 3,000 tons in 1992.[42]

Like the United States, most countries have strict health and sanitary regulations pertaining to the importation of live sheep and lamb meat and mutton. These regulations are generally similar in nature to U.S. regulations.[43]

U.S. Industry Performance in Domestic and Foreign Markets

U.S. Market

U.S. Consumption

U.S. lamb-meat, mutton, and total sheep meat consumption (fig. 2 and tables 8 through 10), as estimated by ITC staff, is shown in the following tabulation (in million pounds):

Year	Lamb meat	Mutton	Total[1]
1986	351	12	364
1987	332	15	347
1988	351	18	368
1989	361	21	381
1990	369	23	391

[1] Because of rounding, figures may not add to the totals shown.

During 1986-90, U.S. consumption of all sheep meat increased irregularly at an average annual rate of about 2 percent. About 95 percent of consumption consisted of lamb meat, and the import-penetration ratio (by quantity) for lamb meat was 6 percent in 1990 (table 8). For mutton the ratio was 70 percent, and for live sheep it was less than 1 percent (tables 9 and 11). Changes in the amount of sheep consumed in the United States during 1986-90 primarily reflected changes in production inasmuch as imports and inventories were relatively stable during the period and exports were negligible.

Lamb Meat

U.S. lamb-meat consumption also increased irregularly at an average annual rate of about 2 percent over 1986-90. During 1986-90, U.S. per capita lamb-meat consumption remained fairly constant, at 1.4 pounds (carcass-weight equivalent).

U.S. and imported fresh, chilled, or frozen lamb meat are similar but have some differences. The great bulk of lamb meat produced in the United States is shipped chilled, with freezing generally being limited to certain times of the year owing to irregular seasonal demand or certain rather low-priced cuts (such as shanks) produced in limited quantities. However, the

[39] As a result of the United States-Canada Free-Trade Agreement, Canadian duties on U.S. live sheep and lamb meat are scheduled to be duty free on Jan. 1, 1993, and duties on U.S. mutton are scheduled to be duty free on Jan. 1, 1998.

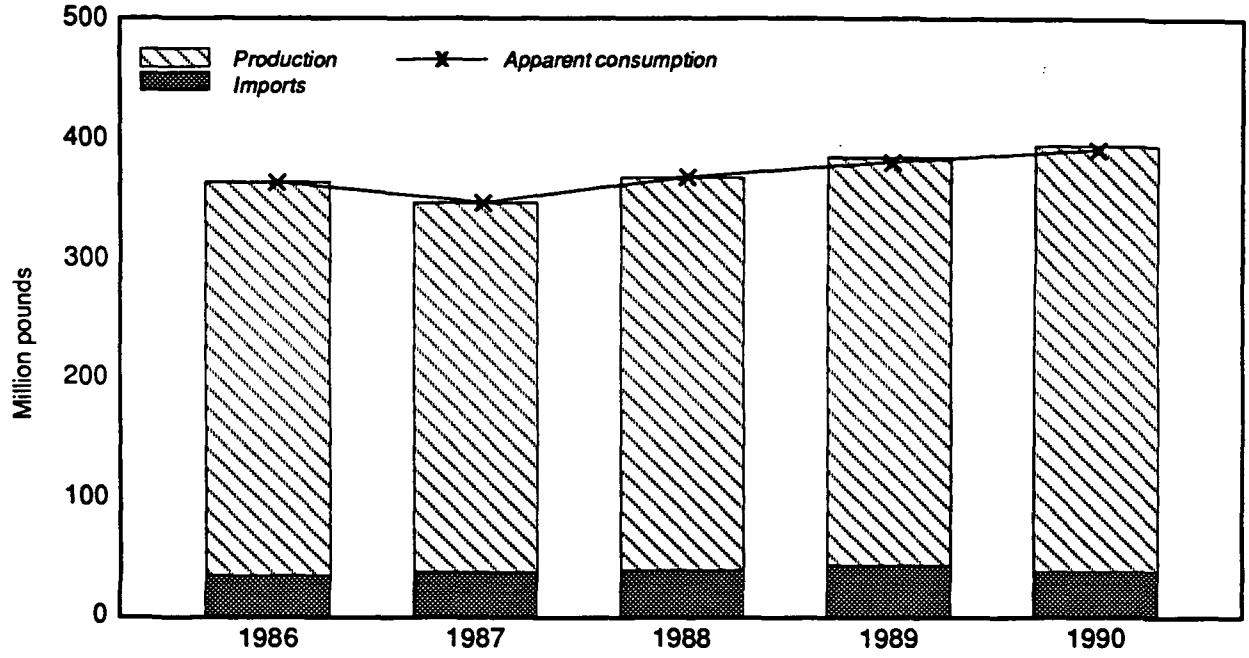
[40] USDA, Foreign Agricultural Service, *U.S. Trade and Prospects*, June 1990, FDLP 5-90, p. 6.

[41] New Zealand Meat Producers Board, *Annual Report, 1990*, February 1991, p. 18.

[42] Telephone conversation with Katherine D. McManus of Clifford & Warnke, counsel for the Australian sheep industry, May 2, 1991.

[43] In the fall of 1989, the Mexican Government banned imports of all female livestock, including U.S. slaughter ewes, reportedly for health reasons. The border was reopened Oct. 1, 1989.

Figure 2
Lamb meat and mutton: U.S. imports, domestic production, and apparent consumption



Source: U.S. production compiled from official statistics of the U.S. Department of Agriculture; import data compiled from official statistics of the U.S. Department of Commerce.

Table 8
Lamb meat; fresh, chilled, or frozen: U.S. production, exports of domestic merchandise, imports for consumption, and apparent U.S. consumption, 1986-90

Year	U.S. production[1]	U.S. exports	U.S. imports	Apparent U.S. consumption	Ratio of imports to consumption
	Quantity (million pounds)				Percent
1986	323	(2)	28	351	8.0
1987	303	(2)	29	332	8.7
1988	321	(2)	30	351	8.5
1989	332	1	29	361	8.0
1990	346	1	23	369	6.2
	Value (million dollars)				
1986	457	2	26	481	5.4
1987	458	2	28	484	5.8
1988	487	3	32	516	6.2
1989	475	4	34	505	6.7
1990	434	6	31	459	6.8

[1] Estimated by the staff of the U.S. International Trade Commission.

[2] Less than 500,000 pounds.

Note.—Because of rounding, figures may not add to the totals shown.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Table 9
Mutton; fresh, chilled, or frozen: U.S. production, exports of domestic merchandise, imports for consumption, and apparent U.S. consumption, 1986-90

Year	U.S. production[1]	U.S. exports	U.S. imports	Apparent U.S. consumption	Ratio of imports to consumption
	Quantity (million pounds)				Percent
1986	7	1	7	13	54
1987	7	1	9	15	60
1988	8	1	11	18	61
1989	10	4	15	21	71
1990	11	4	16	23	70
	Value (million dollars)				
1986	3	(2)	3	6	50
1987	3	(2)	4	7	57
1988	3	(2)	5	8	63
1989	5	2	8	11	73
1990	5	2	7	10	70

[1] Estimated by the staff of the U.S. International Trade Commission.

[2] Less than $500,000.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Table 10
Lamb meat and mutton; fresh, chilled, or frozen: U.S. production, exports of domestic merchandise, imports for consumption, and apparent U.S. consumption, 1986-90

Year	U.S. production[1]	U.S. exports	U.S. imports	Apparent U.S. consumption	Ratio of imports to consumption
	Quantity (million pounds)				Percent
1986	330	1	35	364	9.6
1987	310	1	38	347	11.0
1988	329	1	40	368	10.9
1989	342	5	44	381	11.5
1990	357	5	39	391	10.0
	Value (million dollars)				
1986	460	2	28	486	5.8
1987	461	3	32	490	6.5
1988	490	3	36	523	6.9
1989	480	6	42	516	8.1
1990	439	8	38	469	8.1

[1] Value of U.S. production estimated by the staff of the U.S. International Trade Commission.

Note.—Because of rounding, figures may not add to the totals shown.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Table 11
Live sheep and lambs: U.S. production, exports of domestic merchandise, imports for consumption, and apparent U.S. consumption, 1986-90

Year	U.S. production[1]	U.S. exports	U.S. imports	Apparent U.S. consumption	Ratio of imports to consumption
	Quantity (1,000 animals)				Percent
1986	7,396	122	22	7,296	(2)
1987	7,289	42	27	7,274	(2)
1988	7,206	175	37	7,068	1
1989	7,725	330	142	7,537	2
1990	7,704	473	25	7,256	(2)
	Value (million dollars)				
1986	603	6	2	599	(2)
1987	677	2	2	677	(2)
1988	615	8	4	611	1
1989	650	11	6	645	1
1990	538	16	2	524	(2)

[1] Lamb crop.

[2] Less than 0.5 percent.

Note.—Because of rounding, figures may not add to the totals shown.

Source: Quantity of production compiled from official statistics of the U.S. Department of Agriculture; value of production estimated by the staff of the U.S. International Trade Commission; imports and exports compiled from official statistics of the U.S. Department of Commerce.

bulk of U.S. imports are frozen. Although there has been a trend toward importation of chilled lamb in recent years, the amount of frozen lamb meat imported in 1990 was twice as great as the amount of chilled meat. Imported lamb carcasses, and the cuts derived from them, are typically smaller than U.S. carcasses and cuts, in part because of the genetic makeup of the animals and in part because the U.S. animals are typically grain fed. In 1990, U.S. carcasses averaged 65 pounds each; New Zealand carcasses, less than 30 pounds each; and Australian carcasses, about 38 pounds each. All New Zealand and Australian lamb is grass fed (compared with the common U.S. practice of fattening with grain feeds), which is thought by some consumers to give such meat a stronger flavor and aroma.

Mutton

U.S. consumption of mutton is small in relation to lamb meat and most other meats. Most mutton is referred to as manufacturing meat and is utilized in the production of certain sausages and other comminuted products. Mutton is generally not directly competitive with lamb meat. During 1986-90, mutton consumption increased steadily from 13 million pounds, valued at $6 million, to 23 million pounds, valued at $10 million, (table 9); however, it never accounted for more than 5 percent of U.S. sheep-meat consumption. The majority of mutton consumption was supplied by imports, nearly all from Australia.

U.S. Production

Lambs

The number of lambs born during the year, the so-called lamb crop, is generally referred to as U.S. production.[44] The U.S. lamb crop, as reported by the U.S. Department of Agriculture for 1986-90, is shown in the following tabulation:

Year	Lamb crop 1,000 animals
1986	7,396
1987	7,289
1988	7,206
1989	7,725
1990	7,704

The number of lambs born during the year reflects primarily the number of female animals of breeding age. However, as stated earlier, other factors, such as adverse weather and the nature of the January 1 inventory of ewes (kept for breeding purposes), also may contribute to lower lamb crops. As shown above, the U.S. annual lamb crop fluctuated during 1986-90, but showed an upward trend toward the end of the period, probably reflecting the anticipation of higher feeder lamb prices by sheep growers.

[44] In some States, especially the Western States, the lamb crop is estimated when the young lambs (about 2 weeks of age) are "worked," i.e., when the lambs have their tails removed (docked) and when the ram lambs are castrated. In years with adverse weather conditions, many lambs die before they are "worked" and thus are not included in the lamb crop.

Lamb Meat

U.S. production of lamb meat,[45] as estimated by ITC staff, generally increased during 1986-90, from a low of 303 million pounds in 1987 to a high of 346 million pounds in 1990 (table 8). The increase in lamb-meat production largely reflected an 8-percent increase in the number of lambs slaughtered as shown in the following tabulation (data estimated by ITC staff):

Year	Lamb slaughter 1,000 animals
1986	5,315
1987	4,921
1988	4,990
1989	5,121
1990	5,320

In addition, the average carcass weight increased to 64 pounds in 1990 from 59 pounds in 1986. The increase in average carcass weight may reflect a trend to genetically larger animals, feeding to heavier weights (encouraged by moderate grain prices), and on the negative side, feeding to excessive weights as growers retain animals beyond optimum slaughter weights, largely in anticipation of higher prices.

U.S. Inventories

Inventories of fresh or chilled lamb meat do not build up to any extent, because of the short shelf life of the product. According to industry sources, the maximum length of time after slaughter in which lamb meat remains suitable for human consumption as fresh or chilled meat ranges from 21 to 24 days, given optimum care of the meat. Beyond that point, bacterial growth, or so-called bacteria count, becomes excessive. Officials of the AMI indicated that by sealing fresh or chilled lamb meat in certain plastic materials its shelf life could theoretically be extended by up to 8 weeks.

Although freezing significantly extends the shelf life of lamb meat, U.S. inventories of frozen lamb meat are small. Consumers prefer fresh over frozen meat. Freezing lowers the value of the meat and is avoided, if possible. However, certain low-price cuts, produced in limited quantities, such as shanks, are frozen and collected until sufficient quantities are available for shipment. Also, at certain times of the year, such as Easter, when large quantities of fresh high-value cuts (especially racks) are in demand, certain other cuts in temporary excess supply, (such as loins) are frozen or chilled for short periods of time.

U.S. Imports

Live Sheep and Lambs

U.S. imports of live sheep and lambs are small, supplying less than 1 percent of U.S. consumption of sheep in 1990 (table 11). Except for 1989, Canada has been the principal U.S. supplier of live sheep (table 12). Imports of sheep from Canada consist of both sheep for breeding and lambs for slaughter, whereas imports from New Zealand (the second most important supplier) were mostly feeder lambs destined for slaughter after being fed and finished in U.S. feedlots.

Lamb Meat and Mutton Imports

Total sheep-meat imports increased from 34.8 million pounds in 1986 to 43.5 million pounds in 1989, then fell to 38.9 million pounds in 1990, as shown in table 13. Mutton, virtually all from Australia, accounted for between 20 percent and 40 percent of total sheep-meat imports during the period. The unit value of U.S. mutton imports was 42¢ per pound in 1990, compared with a unit value of $1.34 for lamb meat (tables 14 and 15).

U.S. lamb-meat imports increased from 28.0 million pounds, valued at $25.7 million, in 1986 to 29.5 million pounds, valued at $31.6 million, in 1988, then steadily decreased to 23.4 million pounds, valued at $31.3 million, in 1990 (table 15). Virtually all U.S. lamb-meat imports are supplied by Australia and New Zealand. Imports of lamb meat as a share of domestic consumption were 6.2 percent in 1990.

Traditionally, frozen lamb has accounted for the bulk of U.S. lamb-meat imports; however, in recent years imports of fresh or chilled lamb meat have increased. In 1990, fresh or chilled lamb meat accounted for 31 percent of U.S. lamb-meat imports. Most of the domestic lamb is sold as fresh or chilled.

The share of lamb-meat imports supplied from Australia increased from 17 percent during 1985 to 72 percent in 1987, before declining to 54 percent in 1990 (table 15).[46] Conversely, the share of imports supplied by New Zealand declined from 82 percent in 1985 to 28 percent in 1987 before increasing to 46 percent in 1990. A number of factors may have contributed to the shift, including Australian development and promotion programs for exports of chilled lamb, packing house and dock workers' strikes in New Zealand, and changes in U.S. countervailing duties applicable to imports of lamb from New Zealand. Also, fluctuations in exchange rates may have contributed to fluctuations in supplier shares.

Most Australian primal and subprimal cuts are sold to major grocery chains in the United States. These cuts are delivered to central distribution points where other meats, including domestic lamb meat, are assembled, for delivery to individual grocery stores. The imported Australian carcasses generally are sold by the importers to breakers for fabrication into primal, subprimal, and retail cuts. The breakers then distribute their products to outlets including grocery chains, small-volume individual grocers, and restaurants.

[45] U.S. production of mutton accounts for approximately 5 percent of total U.S. lamb and mutton production.

[46] The product coverage of lamb-meat imports did not change when the HTS was implemented in 1989.

Table 12
Live sheep and lambs: U.S. imports for consumption, by principal source, 1986-90

Source	1986	1987	1988	1989	1990
			Quantity		
Canada	22,411	26,365	25,291	32,700	25,241
New Zealand	23	268	11,491	109,299	5
Australia	0	0	0	0	1
All other	0	7	140	0	0
Total	22,434	26,640	36,922	141,999	25,247
			Value (1,000 dollars)		
Canada	1,690	2,232	1,914	2,564	1,761
New Zealand	20	85	1,881	3,118	8
Australia	0	0	0	0	8
All other	0	42	62	0	0
Total	1,710	2,359	3,857	5,683	1,777
			Unit value (dollars per animal)		
Canada	75.42	84.67	75.68	78.42	69.78
New Zealand	871.57	316.51	163.70	28.53	1,502.20
Australia	.00	.00	.00	.00	7,964.00
All other	.00	6,011.57	440.79	.00	.00
Average	76.23	88.56	104.46	40.02	70.38

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 13
Lamb meat and mutton: U.S. imports for consumption, by principal source, 1986-90

Source	1986	1987	1988	1989	1990
			Quantity (1,000 pounds)		
Australia	(1)	(1)	(1)	30,918	28,003
New Zealand	(1)	(1)	(1)	12,408	10,853
Canada	(1)	(1)	(1)	112	31
Denmark	(1)	(1)	(1)	2	2
All other	(1)	(1)	(1)	75	0
Total	34,858	37,654	40,472	43,515	38,890
			Value (1,000 dollars)		
Australia	(1)	(1)	(1)	26,023	20,359
New Zealand	(1)	(1)	(1)	15,650	17,407
Canada	(1)	(1)	(1)	57	33
Denmark	(1)	(1)	(1)	3	5
All other	(1)	(1)	(1)	49	0
Total	28,485	31,528	36,278	41,782	37,805
			Unit value (dollars per pound)		
Australia	(1)	(1)	(1)	0.84	0.73
New Zealand	(1)	(1)	(1)	1.26	1.60
Canada	(1)	(1)	(1)	.51	1.06
Denmark	(1)	(1)	(1)	1.50	2.50
All other	(1)	(1)	(1)	.65	.00
Average	0.82	0.84	0.90	.96	.97

[1] Country-level detail is provided only for years in which there are actual trade data under the *Harmonized Tariff Schedule of the United States* (HTS) and the new Schedule B (based on HTS).

Note.—Because of rounding, figures may not add to the totals shown.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 14
Mutton: U.S. imports for consumption, by principal source, 1986-90

Source	1986	1987	1988	1989	1990
			Quantity (1,000 pounds)		
Australia	(1)	(1)	(1)	14,401	15,291
New Zealand	(1)	(1)	(1)	479	130
Canada	(1)	(1)	(1)	79	29
All other	(1)	(1)	(1)	73	0
Total	6,896	8,925	10,929	15,032	15,450
			Value (1,000 dollars)		
Australia	(1)	(1)	(1)	7,769	6,406
New Zealand	(1)	(1)	(1)	208	72
Canada	(1)	(1)	(1)	17	23
All other	(1)	(1)	(1)	49	0
Total	2,802	3,503	4,674	8,043	6,501
			Unit value (dollars per pound)		
Australia	(1)	(1)	(1)	0.54	0.42
New Zealand	(1)	(1)	(1)	.43	.55
Canada	(1)	(1)	(1)	.22	.79
All other	(1)	(1)	(1)	.67	.00
Average	0.41	0.39	0.43	.54	.42

[1] Country level detail is provided only for years in which there are actual trade data under the *Harmonized Tariff Schedule of the United States* (HTS) and the new Schedule B (based on HTS).

Note.—Because of rounding, figures may not add to the totals shown.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 15
Lamb meat: U.S. imports for consumption, by principal source, 1986-90

Source	1986	1987	1988	1989	1990
			Quantity (1,000 pounds)		
New Zealand	(1)	(1)	(1)	11,929	10,723
Australia	(1)	(1)	(1)	16,517	12,712
Canada	(1)	(1)	(1)	33	2
All other	(1)	(1)	(1)	2	2
Total	27,962	28,729	29,543	28,482	23,440
			Value (1,000 dollars)		
New Zealand	(1)	(1)	(1)	15,442	17,335
Australia	(1)	(1)	(1)	18,254	13,953
Canada	(1)	(1)	(1)	40	10
All other	(1)	(1)	(1)	3	5
Total	25,683	28,025	31,604	33,739	31,304
			Unit value (dollars per pound)		
New Zealand	(1)	(1)	(1)	1.29	1.62
Australia	(1)	(1)	(1)	1.11	1.10
Canada	(1)	(1)	(1)	1.21	5.00
All other	(1)	(1)	(1)	1.50	2.50
Average	0.92	0.98	1.07	1.18	1.34

[1] Country-level detail is provided only for years in which there are actual trade data under the *Harmonized Tariff Schedule of the United States* (HTS) and the new Schedule B (based on HTS)

Note.—Because of rounding, figures may not add to the totals shown.

Source: Compiled from official statistics of the U.S. Department of Commerce.

The New Zealand Meat Producers Board (Meat Board), a statutory body established under the Meat Export Control Act 1921-22, is responsible for overseeing the marketing of meat for export. DEVCO (a North American subsidiary of the Meat Board) was established to market New Zealand lamb-meat exports in North America. Until 1986, all lamb-meat exports to the United States were done solely through DEVCO. In 1987, the export rights to the U.S. market were relaxed and other exporters were permitted to operate in the market under a strictly controlled test market licensing system. Between July 1986 and mid-1989, DEVCO (renamed the New Zealand Lamb Co. Inc. in 1987) operated a processing plant in California where imported New Zealand carcasses were fabricated into primal, subprimal, and retail-sized cuts. In 1990, the Board dispensed with test market license criteria and began issuing licenses to applicants who meet established specifications. Although the New Zealand export market is open to other interests, the New Zealand Lamb Co. reportedly handles most U.S. imports of lamb meat from New Zealand. After importation and fabrication, the company subsequently sells the meat to distributors and retailers (generally major grocery chains).

Foreign Markets

Foreign Market Profile

The major foreign market for live sheep is the Middle East (primarily Saudi Arabia). The major markets for lamb meat include the EC (primarily the United Kingdom), the Middle East (primarily Saudi Arabia and Iran), Japan, and the United States. The major markets for mutton include the EC, the Soviet Union, the Middle East, New Guinea, and Japan. New Zealand and Australia appear to be especially competitive in the production of grass-fed sheep and lambs, largely because of their large and/or highly productive forage-producing areas. In addition, both countries rely heavily on multimedia-promotional strategies to ensure identification and promotion of their respective product in foreign markets.[47] U.S. exports are not especially competitive in these markets primarily because the demand of the U.S. market generally absorbs the domestic production of live sheep and lambs and the meat of such animals and because of a general lack of foreign market development. However, industry sources report that during 1990 the U.S. sheep industry began to place greater emphasis on developing foreign markets (e.g., the Far East) for U.S. exports of live sheep and sheep meat.

[47] Such programs include television and radio commercials, newspaper advertisements, product presentation to hotel chefs, video presentations in supermarkets, and color photos and recipes in consumer and trade magazines.

U.S. Exports

Live Sheep and Lambs

U.S. exports of live sheep and lambs increased from 1 percent of production in 1987 to 6 percent in 1990. Mexico is the largest export market for U.S. live sheep and lambs (table 16), accounting for 91 percent of U.S. exports in 1990. The bulk of the exports to Mexico consisted of slaughter ewes, although a number of slaughter lambs were reportedly exported during 1990. Canada, the second-largest market, accounted for 8 percent of such exports. Exports to Canada are mostly slaughter lambs. Exports of live animals to other countries are thought to be mostly breeding sheep. U.S. sheep growers are believed to be the primary exporters. Transportation costs generally limit exports of live animals (unless they are high-valued breeding stock) to contiguous areas.

Lamb Meat and Mutton

U.S. exports of mutton and lamb meat are negligible, accounting for less than 2 percent of U.S. production in 1990 (table 10). Such exports increased from 1.2 million pounds in 1986 to 5.5 million pounds in 1990 (table 17). Canada was the principal export market, accounting for 40 percent, or 2.2 million pounds of total exports in 1990. Canada appears to be a new and rapidly growing U.S. export market. Industry sources indicate that the United States-Canada Free-Trade agreement and resulting lower duties, along with U.S. industry-financed promotional programs for fresh lamb, has allowed the U.S. industry to compete with New Zealand for shelf space in Canadian supermarkets. Mexico, the second-largest market, accounted for 28 percent of U.S. exports; such exports consisted primarily of mutton. In addition, U.S. industry market-development programs resulted in increased exports, albeit small, to other countries, such as Japan and Hong Kong. The U.S. exporters of lamb and mutton consist mostly of large U.S. food distributors.

U.S. Trade Balance

Tables 18 and 19 show the U.S. trade balances for live sheep and lambs and lamb meat and mutton, respectively. The United States is a net exporter of live sheep and lambs and registered a $14 million trade surplus in 1990, up from $4 million in 1986, primarily as a result of increased exports to the contiguous areas of Canada and Mexico and reduced imports from New Zealand and Canada. The data suggest that the increased imports from New Zealand in 1989 appear to have been a 1-year phenomenon that may not have resulted in significant success. The United States is, by far, a net importer of lamb meat and mutton and recorded a $30 million deficit in 1990, versus a $26 million deficit in 1986. As stated earlier, most U.S. livestock producers prefer to raise livestock other than sheep; hence, U.S. lamb-meat production is small and shows no signs of increasing significantly.

Table 16
Live sheep and lambs: U.S. exports of domestic merchandise, by principal market, 1986-90

Source	1986	1987	1988	1989	1990
			Quantity		
Mexico	(1)	(1)	(1)	308,228	430,032
Canada	(1)	(1)	(1)	15,636	35,702
India	(1)	(1)	(1)	2,425	1,374
Brazil	(1)	(1)	(1)	2,436	4,833
All other	(1)	(1)	(1)	1,169	965
Total	122,157	42,055	174,597	329,894	472,906
			Value (1,000 dollars)		
Mexico	(1)	(1)	(1)	9,133	12,868
Canada	(1)	(1)	(1)	1,156	2,242
India	(1)	(1)	(1)	478	269
Brazil	(1)	(1)	(1)	184	229
All other	(1)	(1)	(1)	47	97
Total	5,.596	2,395	8,334	10,998	15,705
			Unit value (dollars per animal)		
Mexico	(1)	(1)	(1)	29.63	29.92
Canada	(1)	(1)	(1)	73.93	62.80
India	(1)	(1)	(1)	197.11	195.78
Brazil	(1)	(1)	(1)	75.53	47.38
All other	(1)	(1)	(1)	40.21	100.52
Average	45.81	56.95	47.73	33.34	33.21

[1] Country-level detail is provided only for years in which there are actual trade data under the *Harmonized Tariff Schedule of the United States* (HTS) and the new Schedule B (based on HTS).

Note.—Because of rounding, figures may not add to the totals shown.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 17
Lamb meat and mutton: U.S. exports of domestic merchandise, by principal market, 1986-90

Source	1986	1987	1988	1989	1990
			Quantity (1,000 pounds)		
Canada	(1)	(1)	(1)	666	2,222
Mexico	(1)	(1)	(1)	2,165	1,512
Japan	(1)	(1)	(1)	234	346
Bahamas	(1)	(1)	(1)	157	117
Singapore	(1)	(1)	(1)	68	88
South Korea	(1)	(1)	(1)	203	148
All other	(1)	(1)	(1)	1,085	1,054
Total	1,225	1,472	1,364	4,577	5,490
			Value (1,000 dollars)		
Canada	(1)	(1)	(1)	1,286	3,714
Mexico	(1)	(1)	(1)	1,886	1,609
Japan	(1)	(1)	(1)	699	501
Bahamas	(1)	(1)	(1)	471	334
Singapore	(1)	(1)	(1)	121	271
South Korea	(1)	(1)	(1)	273	253
All other	(1)	(1)	(1)	1,401	1,236
Total	2,487	2,739	3,020	6,139	7,918
			Unit value (dollars per pound)		
Canada	(1)	(1)	(1)	1.93	1.67
Mexico	(1)	(1)	(1)	.87	1.06
Japan	(1)	(1)	(1)	2.99	1.45
Bahamas	(1)	(1)	(1)	3.00	2.85
Singapore	(1)	(1)	(1)	1.78	3.08
South Korea	(1)	(1)	(1)	1.34	1.71
All other	(1)	(1)	(1)	1.29	1.17
Average	2.03	1.86	2.21	1.34	1.44

[1] Country-level detail is provided only for years in which there are actual trade data under the *Harmonized Tariff Schedule of the United States* (HTS) and the new Schedule B (based on HTS).

Note.—Because of rounding, figures may not add to the totals shown.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 18
Live sheep and lambs: U.S. exports of domestic merchandise, imports for consumption, and merchandise trade balance, by selected country, 1986-90[1]

(Million dollars)

Item	*1986*	*1987*	*1988*	*1989*	*1990*
U.S. exports of domestic merchandise:					
Mexico	(2)	(2)	(2)	9	13
Canada	(2)	(2)	(2)	1	2
New Zealand	(2)	(2)	(2)	0	0
All other	(2)	(2)	(2)	1	1
Total	6	2	8	11	16
U.S. imports for consumption:					
Mexico	(2)	(2)	(2)	0	0
Canada	(2)	(2)	(2)	3	2
New Zealand	(2)	(2)	(2)	3	(3)
All other	(2)	(2)	(2)	0	(3)
Total	2	2	4	6	2
U.S. merchandise trade balance:					
Mexico	(2)	(2)	(2)	9	13
Canada	(2)	(2)	(2)	-2	0
New Zealand	(2)	(2)	(2)	-3	(3)
All other	(2)	(2)	(2)	1	1
Total	4	0	4	5	14

[1] Import values are based on Customs value; export values are based on f.a.s. value, U.S. port of export.

[2] Country-level detail is provided only for years in which there are actual trade data under the *Harmonized Tariff Schedule of the United States* (HTS) and the new Schedule B (based on HTS).

[3] Less than $500,000.

Note.—Because of rounding, figures may not add to the totals shown.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 19
Lamb meat and mutton; fresh, chilled or frozen: U.S. exports of domestic merchandise, imports for consumption, and merchandise trade balance, by selected country, 1986-90[1]

(Million dollars)

Item	*1986*	*1987*	*1988*	*1989*	*1990*
U.S. exports of domestic merchandise:					
New Zealand	(2)	(2)	(2)	(3)	(3)
Australia	(2)	(2)	(2)	(3)	0
Canada	(2)	(2)	(2)	1	4
Mexico	(2)	(2)	(2)	2	2
All other	(2)	(2)	(2)	2	2
Total	2	3	3	6	8
U.S. imports for consumption:					
New Zealand	(2)	(2)	(2)	16	17
Australia	(2)	(2)	(2)	26	20
Canada	(2)	(2)	(2)	(3)	(3)
Mexico	(2)	(2)	(2)	0	0
All other	(2)	(2)	(2)	(3)	0
Total	28	32	36	42	38
U.S. merchandise trade balance:					
New Zealand	(2)	(2)	(2)	-16	-17
Australia	(2)	(2)	(2)	-26	-20
Canada	(2)	(2)	(2)	1	4
Mexico	(2)	(2)	(2)	2	2
All other	(2)	(2)	(2)	2	2
Total	-26	-29	-33	-36	-30

[1] Import values are based on Customs value; export values are based on f.a.s. value, U.S. port of export.

[2] Country-level detail is provided only for years in which there are actual trade data under the *Harmonized Tariff Schedule of the United States* (HTS) and the new Schedule B (based on HTS).

[3] Less than $500,000.

Note.—Because of rounding, figures may not add to the totals shown.

Source: Compiled from official statistics of the U.S. Department of Commerce.

APPENDIX A
EXPLANATION OF TARIFF AND TRADE AGREEMENT TERMS

TARIFF AND TRADE AGREEMENT TERMS

The ***Harmonized Tariff Schedule of the United States*** (HTS) replaced the ***Tariff Schedules of the United States*** (TSUS) effective January 1, 1989. Chapters 1 through 97 are based on the internationally adopted Harmonized Commodity Description and Coding System through the 6-digit level of product description, with additional U.S. product subdivisions at the 8-digit level. Chapters 98 and 99 contain special U.S. classification provisions and temporary rate provisions, respectively.

Rates of duty in the ***general*** subcolumn of HTS column 1 are most-favored-nation (MFN) rates. For the most part, they represent the final concession rate from the Tokyo Round of Multilateral Trade Negotiations. Column 1-general duty rates are applicable to imported goods from all countries except those enumerated in general note 3(b) to the HTS, whose products are dutied at the rates set forth in ***column 2***. Goods from the People's Republic of China, Czechoslovakia, Hungary, Poland, and Yugoslavia are among those eligible for MFN treatment. Among articles dutiable at column 1-general rates, particular products of enumerated countries may be eligible for reduced rates of duty or for duty-free entry under one or more preferential tariff programs. Such tariff treatment is set forth in the ***special*** subcolumn of HTS column 1.

The ***Generalized System of Preferences*** (GSP) affords nonreciprocal tariff preferences to developing countries to aid their economic development and to diversify and expand their production and exports. The U.S. GSP, enacted in title V of the Trade Act of 1974 and renewed in the Trade and Tariff Act of 1984, applies to merchandise imported on or after January 1, 1976, and before July 4, 1993. Indicated by the symbol "A" or "A*" in the special subcolumn of column 1, the GSP provides duty-free entry to eligible articles the product of and imported directly from designated-beneficiary developing countries, as set forth in general note 3(c)(ii) to the HTS.

The ***Caribbean Basin Economic Recovery Act*** (CBERA) affords nonreciprocal tariff preferences to developing countries in the Caribbean Basin area to aid their economic development and to diversify and expand their production and exports. The CBERA, enacted in title II of Public Law 98-67, implemented by Presidential Proclamation 5133 of November 30, 1983, and amended by the Customs and Trade Act of 1990, applies to merchandise entered, or withdrawn from warehouse for consumption, on or after January 1, 1984; this tariff preference program has no expiration date. Indicated by the symbol "E" or "E*" in the special subcolumn of column 1, the CBERA provides duty-free entry to eligible articles the product of and imported directly from designated countries, as set forth in general note 3(c)(v) to the HTS.

Preferential rates of duty in the special subcolumn of column 1 followed by the symbol "IL" are applicable to products of Israel under the ***United States-Israel Free-Trade Area Implementation Act*** of 1985, as provided in general note 3(c)(vi) of the HTS. When no rate of duty is provided for products of Israel in the special subcolumn for a particular provision, the rate of duty in the general subcolumn of column 1 applies.

Preferential rates of duty in the special duty rates subcolumn of column 1 followed by the symbol "CA" are applicable to eligible goods originating in the territory of Canada under the ***United States-Canada Free-Trade Agreement***, as provided in general note 3(c)(vii) to the HTS.

Other special tariff treatment applies to particular ***products of insular possessions*** (general note 3(a)(iv)), goods covered by the ***Automotive Products Trade Act*** (general note 3(c)(iii)) and the ***Agreement on Trade in Civil Aircraft*** (general note 3(c)(iv)), and ***articles imported from freely associated states*** (general note 3(c)(viii)).

The ***General Agreement on Tariffs and Trade*** (GATT) (61 Stat. (pt. 5) A58; 8 UST (pt. 2) 1786) is the multilateral agreement setting forth basic principles governing international trade among its more than 90 signatories. The GATT's main obligations relate to most-favored-nation treatment, the maintenance of scheduled concession rates of duty, and national (nondiscriminatory) treatment for imported products. The GATT also provides the legal framework for customs-valuation standards, "escape clause" (emergency) actions, antidumping and countervailing duties, and other measures. Results of GATT-sponsored multilateral tariff negotiations are set forth by way of separate schedules of concessions for each participat-

ing contracting party, with the U.S. schedule designated as schedule XX.

Officially known as "The Arrangement Regarding International Trade in Textiles," the ***Multifiber Arrangement*** (MFA) provides a framework for the negotiation of bilateral agreements between importing and producing countries, or for unilateral action by importing countries in the absence of an agreement. These bilateral agreements establish quantitative limits on imports of textiles and apparel, of cotton and other vegetable fibers, wool, manmade fibers, and silk blends, in order to prevent market disruption in the importing countries—restrictions that would otherwise be a departure from GATT provisions. The United States has bilateral agreements with more than 30 supplying countries, including the four largest suppliers: China, Hong Kong, the Republic of Korea, and Taiwan.