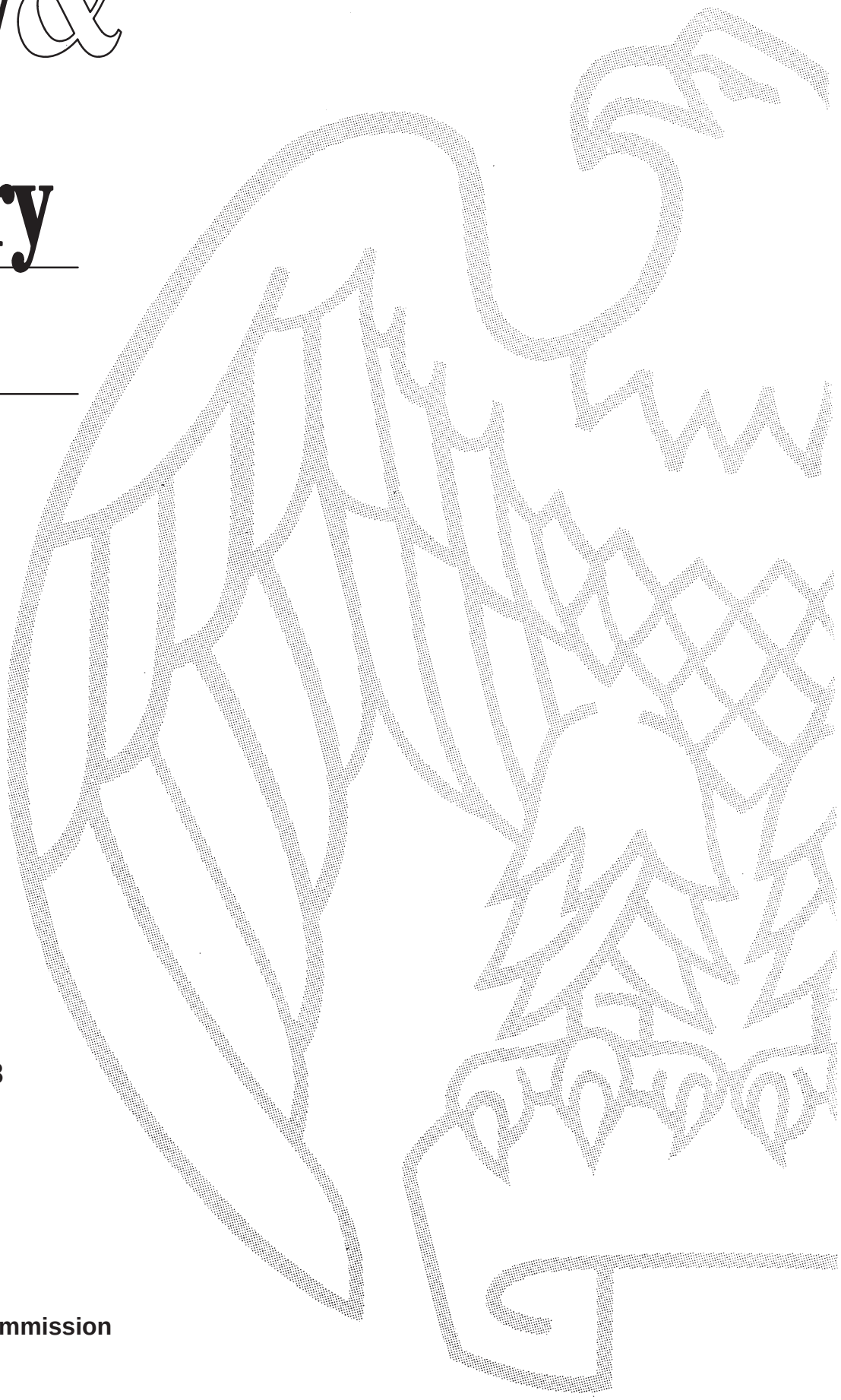
Industry & Trade Summary

Eggs



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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 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 eggs covers the period 1994 through 1998. Listed below are the individual summary reports published to date on the agricultural and forest products sector.

USITC publication number	*Publication date*	*Title*
2459	November 1991	Live Sheep and Meat of Sheep
2462	November 1991	Cigarettes
2477	January 1992	Dairy Produce
2478	January 1992	Oilseeds
2511	March 1992	Live Swine and Fresh, Chilled, or Frozen Pork
2520	June 1992	Poultry
2524	August 1992	Fresh or Frozen Fish
2545	November 1992	Natural Sweeteners
2551	November 1992	Newsprint
2612	March 1993	Wood Pulp and Waste Paper
2615	March 1993	Citrus Fruit
2625	April 1993	Live Cattle and Fresh, Chilled, or Frozen Beef and Veal
2631	May 1993	Animal and Vegetable Fats and Oils
2635	May 1993	Cocoa, Chocolate, and Confectionery
2636	May 1993	Olives
2639	June 1993	Wine and Certain Fermented Beverages
2693	October 1993	Printing and Writing Paper
2702	November 1993	Fur Goods
2726	January 1994	Furskins
2737	March 1994	Cut Flowers
2749	March 1994	Coffee and Tea
2762	April 1994	Paper Boxes and Bags
2865	April 1995	Malt Beverages

[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.

PREFACE—*Continued*

USITC publication number	*Publication date*	*Title*
2859	May 1995	Seeds
2875	May 1995	Certain Fresh Deciduous Fruits
2898	June 1995	Certain Miscellaneous Vegetable Substances
2918	August 1995	Printed Matter
2917	October 1995	Lumber, Flooring, and Siding
2919	October 1995	Eggs
2928	November 1995	Processed Vegetables
3015	February 1997	Hides, Skins, and Leather
3020	March 1997	Nonalcoholic Beverages
3022	April 1997	Industrial Papers and Paperboards
3080	January 1998	Dairy Products
3083	February 1998	Canned Fish, Except Shellfish
3095	March 1998	Milled Grains, Malts, and Starches
3096	April 1998	Millwork
3145	December 1998	Wool and Related Animal Hair
3148	December 1998	Poultry
3171	March 1999	Dried Fruits Other Than Tropical

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ABBREVIATION and ACRONYMS

AEB	American Egg Board
AI	Avian Influenza
AMS	Agricultural Market Service of the U.S. Department of Agriculture
APHIS	Animal and Plant Health Inspection Service of the U.S. Department of Agriculture
CCC	Commodity Credit Corporation
CFTA	United States-Canada Free Trade Agreement
EEP	Export Enhancement Program
EPIA	Egg Products Inspection Act
ERS	Economic Research Service of the U.S. Department of Agriculture
EU	European Union
FAS	Foreign Agricultural Service of the U.S. Department of Agriculture
FDA	Food and Drug Administration
FSIS	Food Safety Inspection Service of the U.S. Department of Agriculture
HACCP	Hazard Analysis and Critical Control Point
HTS	Harmonized Tariff Schedule of the United States
MAP	Market Access Program
NAFTA	North American Free Trade Agreement
NASS	National Agricultural Statistical Service of the U.S. Department of Agriculture
NTR	Normal Trading Relations
TRQ	Tariff-Rate Quota
UAE	United Arab Emirates
URAA	Uruguay Round Agreement on Agriculture
USAPEEC	USA Poultry and Egg Export Council
USDA	U.S. Department of Agriculture
WTO	World Trade Organization

ABSTRACT

This report addresses trade and industry conditions for eggs and egg products for the period 1994-98.

- The U.S. egg industry has been oriented toward the domestic market, which is the third-largest in the world (behind China and the European Union (EU)). However, between 1994 and 1998, U.S. exports rose by more than 18 percent to 325 million dozen, equivalent to almost 5 percent of domestic production. The United States is the second-largest exporter of eggs (just behind the EU) and in 1998 accounted for about one-third of world exports. Principal markets included Canada, Mexico, Japan, Hong Kong, and the EU.

- During 1994-98, the average annual value of U.S. egg shipments was about $5.3 billion, consisting of $1.2 billion of hatching eggs, $3.2 billion of table eggs, and $0.9 billion of egg products. There are about 73,000 U.S. egg farms, and annual employment in the egg products industry is approximately 8,000 persons. U.S. imports of eggs are negligible, at less than 0.5 percent of consumption. Endowed with a favorable climate, state-of-the-art production technology, and advantageous cost and market structures, the U.S. egg industry is among the most efficient in the world.

- World trade in egg products is restricted as a result of both tariff and nontariff measures. For example, tariffs on U.S. product exported to Canada, Mexico, and Japan are in excess of 20 percent ad valorem, while nontariff barriers, such as sanitary certification, shelf-life, and labeling requirements also represent obstacles for U.S. exports.

- The principal U.S. consumers of egg products include households, restaurants, institutions, and producers of further processed products. At the retail level, changes in consumer incomes and retail prices for egg products relative to meats are the principal factors influencing demand. Other factors affecting consumption include advertising, promotion, and concern about health and nutrition.

INTRODUCTION

This summary covers eggs of birds,[1] including hatching eggs and table eggs provided for in chapter 4 of the Harmonized Tariff Schedule of the United States (HTS), as well as processed egg products (contained in HTS chapters 4 and 35). The eggs included in this summary are primarily of poultry (chickens, turkeys, ducks, geese, and guineas). Information is presented in this report on the structure of the U.S. and foreign egg industries, domestic and foreign tariff and nontariff measures, and the competitive conditions of the U.S. egg industry in domestic and foreign markets. The period reviewed is 1994-98.

The U.S. egg industry is made up of many distinct sectors, the major ones being the shell egg sector and the processed egg products sector. The shell eggs sector produces table eggs (sold for immediate consumption at home or in the hotel and restaurant sector), breaking eggs (sold for use in processed egg products), and hatching eggs. The egg products sector produces various liquid, frozen, and dried egg products.[2] Virtually all such eggs and egg products, except for hatching eggs, are of chickens. Turkey eggs account for a substantial share of hatching eggs, with a small share accounted for by ducks, geese, and guineas. A very small portion of the U.S. egg market is represented by hatching eggs of other birds, such as ratite birds, including emus and ostriches.

Between 1994 and 1998, U.S. egg production increased by 8 percent to about 6.7 billion dozen, valued at $5.4 billion (appendix A, table A-1). Domestic producers dominate the U.S. egg market. During the period under review, U.S. egg exports increased from $158 million to $207 million and on average represented about 3.5 percent of domestic production. Canada, Mexico, and Japan were the major markets. Over the same period, U.S. egg imports ranged from between $14 million and $30 million, accounting for less than 0.5 percent of domestic consumption. Most imports were from Canada. Apparent U.S. consumption of eggs increased about 7 percent during 1994-98 and exceeded 6.3 billion dozen in 1998. On a per capita basis, consumption was flat during 1994-97 (ranging between 272 and 276 eggs annually); however, in 1998 consumption increased to 283 eggs. The proportions of table eggs, hatching eggs, and egg products in overall consumption remained stable during the period.

The world egg market is characterized by a small number of major trade flows. The major suppliers of the Japanese market are the United States and the EU, while the majority of Hong Kong imports are supplied by the United States and China. Beyond these major flows, eggs are generally traded between countries that are geographically close to one another.

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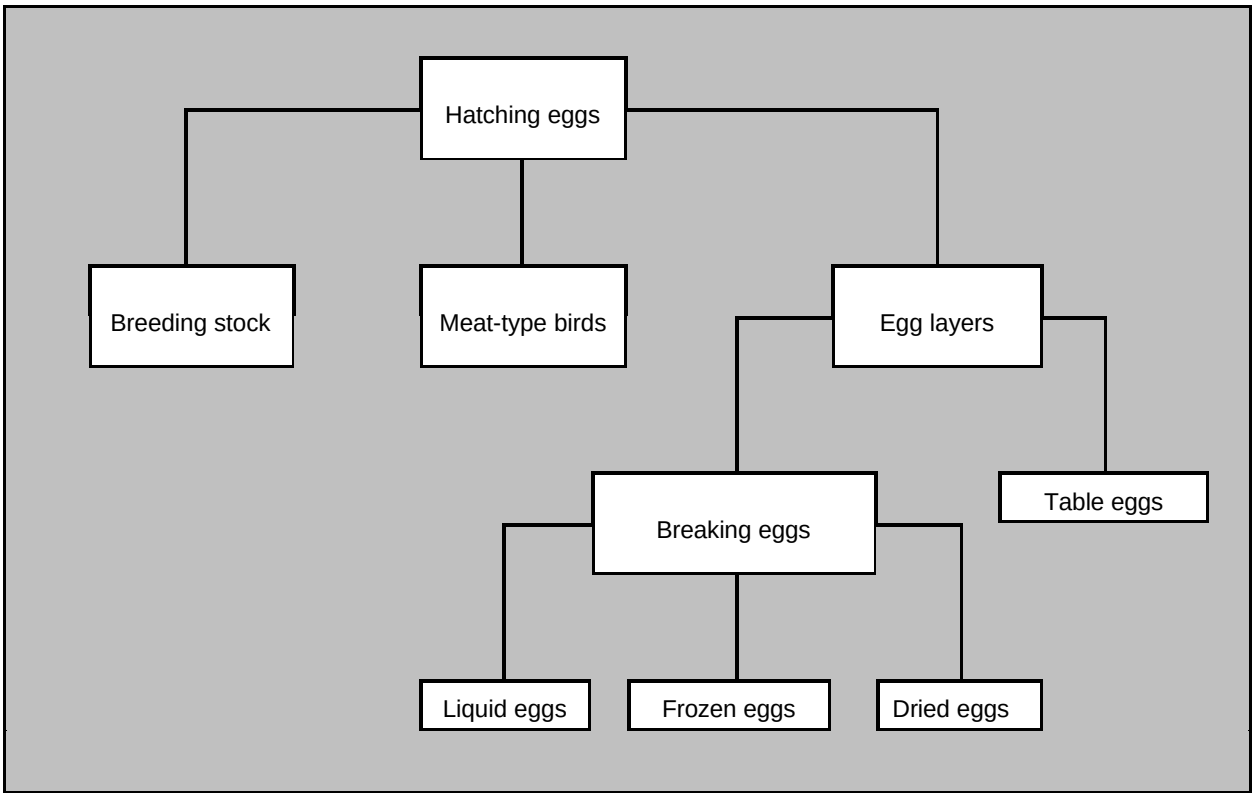
[1] Other kinds of eggs are not included.

[2] The production of liquid egg products involves egg breaking, pasteurizing, and packing. Liquid eggs are produced as whole eggs, as well as separated into whites and yolks. The production of frozen eggs involves breaking and pasteurizing eggs that are then put into large containers and frozen. The production of most dried eggs (including whole eggs, or separated whites and yolks) involves spray drying liquid eggs. However, egg whites are often dried on trays that result in a product that will more easily dissolve in water. For more information on egg products, see California Egg Commission, Eggs for Industry homepage (see Egg Terms), found at Internet address http://eggs4industry.com.

The production process for eggs involves several distinct stages (figure 1). The process begins with the hatching of baby birds, which are either added to the breeder stock or grown for meat or egg production. The next stage involves the growing of the birds to sexual maturity for breeding or to egg-producing age (usually about 18 weeks). The final stage is the production of table eggs and egg products.

Figure 1
Eggs: Production stages



Source: U.S. International Trade Commission.

Egg products is the term used to designate processed and convenience forms of eggs for commercial and foodservice use. Among the forms of egg products that are available are liquid eggs, frozen eggs, and dried eggs. By far the major variable cost of production is the cost of feed (mainly corn and soybean meal). Other variable cost items include wages and packaging expenses. Capital is the major fixed cost item in egg production, as the egg production process is highly mechanized.

Table eggs are used by individual households as a primary food item, particularly for breakfast meals, and as ingredients in food items, such as baked goods. About 90 percent of U.S. egg supplies are white; the remainder are brown. Table eggs are also used by restaurants, food processors, and other food institutions for the same purposes. The share of table eggs consumed outside the home has increased in recent years, as more consumers frequent fast food establishments for convenience. Breaking eggs are used by egg processors to produce various egg products. Hatching eggs are used by poultry breeders to produce breeder stock

or growing stock (to produce eggs or meat). Egg products are used by the processed food industry mainly as an ingredient in the production of food items, such as baked goods, confectionary, mayonnaise, pasta, and salad dressings.

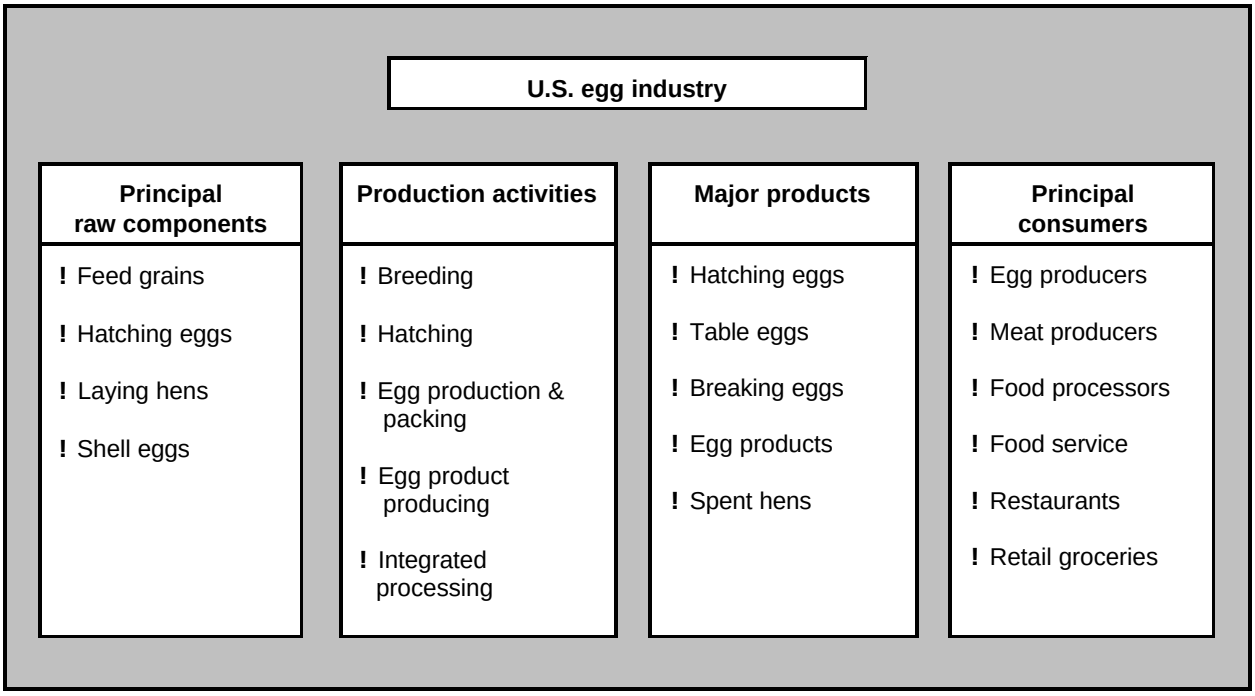
U.S. INDUSTRY PROFILE

The U.S. egg industry[3] is the third-largest in the world (behind China and the EU) and accounted for approximately 11 percent of global production in 1998. Endowed with a favorable climate, state-of-the-art production technology, and advantageous cost and market structures, the U.S. egg industry is among the most efficient in the world. It has also pioneered many of the basic production methods currently in use throughout the world.

The structure of the U.S. egg industry is shown in figure 2. Major production activities include poultry breeding, egg hatching, egg-laying and packing, and egg product producing. Poultry breeding operations develop and reproduce strains of birds that have the genetic characteristics required by egg producers; they also supply fertilized eggs to hatcheries, which are highly specialized facilities designed to hatch fertile eggs. While breeding operations and hatcheries are important, the majority of producers in the U.S. egg industry are commercial egg-type laying farms which also pack and grade the eggs. Most farms are integrated from the point of production through the final marketing of the eggs. Principal products include hatching eggs, table eggs, and egg products. Principal consumers include poultry and egg producers, food processors, restaurants and food service facilities, and retail groceries.

[3] The U.S. egg industry is covered under the following Standard Industrial Code (SIC) industry numbers: 0252 Chicken Eggs; 0253 Turkeys and Turkey Eggs; 0254 Poultry Hatcheries; 0259 Poultry and Eggs, Not Elsewhere Classified; 5144 Poultry and Poultry Products (wholesale trade); and, 5149 Farm-Product Raw Materials, Not Elsewhere Classified. The poultry industry is also covered under the following North American Industry Classification System (NAICS) industry numbers: 11210 Chicken Egg Production; 11233 Turkey Production; 11234 Poultry Hatcheries; and, 311999 All Other Miscellaneous Food Manufacturing (egg processing and manufacturing).

Figure 2
U.S. egg industry: Principal raw materials, production activities, major products, and principal consumers



Source: Compiled by the staff of the U.S. International Trade Commission.

Number, Concentration, Geographic Distribution of Firms

Number

Production of eggs and egg products occurs at two levels, the farm level, where shell eggs are produced, and the processing level, where eggs are broken and processed into egg products. According to the 1997 Census of Agriculture, there were about 73,000 farms reporting layers and pullets of 13 weeks old and older, down from 88,000 farms reported in the 1992 Census.[4] This drop was caused mainly by a long-term trend toward fewer and larger farms to capture the advantages of larger-sized operations (economies of size).

The number of shell egg packing plants (which sort, clean, and pack shell eggs) declined from about 1,000 in 1994 to 950 in 1998 (a decline of 5 percent). The decline was mainly the result of a rationalization of production facilities caused by mergers and acquisitions and a long-term

[4] USDA, NASS, *1997 Census of Agriculture*, found at Internet address http://www.nass.usda.gov/census/ census97, retrieved, July 20, 1999.

trend toward larger plants. Although Federal inspection of shell egg packing plants is voluntary, 160 plants opted for such inspection in 1998. The number of Federally inspected egg product plants (plants which break shell eggs and produce liquid, frozen, and dried eggs) totaled 78 in 1998, down from 84 in 1994. The number of hatcheries dropped by 3 percent from 450 in 1994. These declines are attributable to increasing industry concentration, the same factor that affected shell egg packing plants.

Concentration

Concentration in the egg industry remained fairly stable during 1994-98. In 1998, the top four producers accounted for 22 percent of total shell egg production, compared with 31 percent in 1995 and 1996 (table A-2). The share of the 20 leading producers increased by about 2 percent over the period and ranged from 46 percent in 1994 and 1995 to 53 percent in 1997.

Industry concentration is significantly higher for egg breakers than shell egg producers. In 1998, the four leading egg breakers accounted for 76 percent of production, compared with about 40 percent during 1994-96 (table A-2). The top 20 egg breakers accounted for all of 1998 production, up from only 50 percent in 1994.

Geographical Distribution of Firms

Table eggs are produced throughout the country, but especially in the Midwest. In 1997, Ohio overtook California as the leading producer of all eggs, with about 11 percent of the U.S. total in 1998 (table A-3). Other important producing States include California (10 percent), Iowa, Pennsylvania, and Indiana (8 percent each). The location of the industry has been determined largely by land, labor, energy costs, environmental constraints, feed supplies, major distribution channels, growth and shifts in the location of the egg product sector, and the development of a vertically integrated egg production and support network. These factors contributed to a shift in table egg production from California to mainly Midwestern States, such as Ohio, Iowa, and Indiana.[5]

The hatching egg sector is highly concentrated geographically, with the top two States (Arkansas and Georgia) accounting for 38 percent of production in 1998, and the top five States (including North Carolina, Alabama, and Mississippi) accounting for almost three-quarters of production (table A-3). Hatching egg producers generally are near poultry meat and egg producers and their markets. The distribution of hatching egg producers did not significantly change during 1994-98.

[5] "Iowa—Number 1 in Eggs in 2000?", *Egg Industry*, vol. 104, No. 6, June 1999, pp. 4-8.

Employment, Earnings, and Productivity

The egg industry employed an average of about 8,000 workers during 1994-98.[6] Most egg-processing plants are in rural areas of the country, particularly in the South and upper Midwest. For the most part, egg-processing plants employ relatively low-skilled, low-wage production-line labor. However, they also employ highly skilled scientific and technical staff for the research and development associated with selective breeding, hatching, and the development of optimal feed and growing conditions. Egg processors also employ skilled engineers to develop and maintain highly efficient processing operations and managers to compete in an increasingly competitive global market.

There are several measures of productivity in the egg industry. The principal ones are the hatchability ratio, which measures the share of hatching eggs that are successfully hatched; the rate of lay, which measures the number of eggs laid per hen during a year; and the feed-conversion ratio, which measures the amount of feed required to produce a quantity of eggs. The hatchability ratio for chickens has remained above 80 percent in recent years; this ratio is somewhat lower for turkeys and other types of poultry. The rate of lay was stable during 1994-98 at 255 eggs per hen per year.[7] The feed conversion ratio is about 4:1 (i.e., 4 pounds of feed per dozen eggs).

The high levels of productivity in this industry are directly associated with the level of automation, which has risen dramatically in recent decades, mainly because of technological innovations and increasing vertical integration of the industry. Hatcheries employ sophisticated breeding techniques and incubating machinery; layer husbandry and egg production operations are generally computerized and environmentally controlled; and egg-processing plants use automated assembly-line processing and packaging lines.

Special Considerations of Production Costs

Feed is the most important cost component (about 60-70 percent in the United States) of egg production. Feed costs depend largely on the prices of corn and soybean meal, the two major poultry feed ingredients. Between 1994 and 1998, there were sufficient supplies of these commodities on the domestic market to keep prices fairly stable, averaging about $3 per bushel for corn and $175 per ton for soybean meal.[8] During 1994-98 there were no known shortages of other inputs into egg production, such as medicines, labor, machinery, and housing.

Special considerations in relation to production costs include water costs and availability and the cost of complying with environmental regulations. Although large amounts of fresh water are needed for chicken and turkey houses, even larger amounts are required to operate

[6] USITC, *1999 Trade Shifts*, USITC publication No. 1999.
[7] USDA, NASS, *Layers and Egg Production, Annual Summary*, various issues.
[8] USDA, ERS, *Grain Outlook and Situation Report*, various issues.

processing facilities. Availability and the cost of water are therefore becoming important factors for companies in deciding where to locate new processing operations. Environmental compliance also affects the costs of producing and processing eggs in the United States. Poultry farms and processing facilities have been criticized for polluting rivers, lakes, and coastal areas, as a result of run-off from these facilities. Regulations designed to reduce water pollution are reported to cost the egg industry several millions of dollars annually.[9]

Vertical and Horizontal Integration

Over the past several years, the egg-processing industry has become increasingly vertically integrated. Most of the large firms now either own egg production facilities or have production contracts with local egg producers. By being vertically integrated, firms are able to better manage their production decisions and exercise greater control over product quality and costs. Vertical integration also enables firms to manage financial risks associated with unstable product prices and input costs, thus putting the firms in a better position to finance long-term investments.[10] For example, by owning hatcheries and breeding companies, egg processing firms can be assured supplies of eggs that are suited to their finished products; also, by owning feed mills, processors can control feed quality.

Virtually all egg production is accounted for by vertically integrated operations. Factors that have contributed to the vertically integrated structure of the U.S. egg industry include its relatively short production cycle (involving fast turnover and high production volumes that lead to economies of size) and the linkages between specialized, discrete production stages (hatching, raising of hens, laying, processing, and marketing). Vertical integration is realized either through contracts (mainly backward integration in the hatching sector) or ownership (both backward integration in the feed and chick hatching stages and forward integration in the egg processing and marketing stages).

Horizontal integration in the U.S. egg industry has also increased over time. Many of the top U.S. egg producers are large agribusiness firms engaged in a wide range of agricultural activities. For example, Michael Food, Inc. (with a 45 percent market share in the egg-processing industry) has integrated horizontally into other food sectors, such as refrigerated grocery products (including refrigerated potato products) and specialty dairy products, in addition to its egg interests.[11] Pilgrim's Pride, a major poultry-producing company, produced about two million eggs during 1994-98, while in early 1999, Tyson Foods, Inc. (the United States' largest poultry-producing firm)[12] acquired Hudson Foods/National Egg Products, a major egg production and processing firm.[13]

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[9] USITC staff interview with poultry industry representative, July 1, 1998.

[10] USDA, ERS, "Poultry Industry Boosted by Export Boom in 1990s," *Agricultural Outlook*, Nov. 1996, p. 14.

[11] "The Year of Consolidation, Acquisitions," *Egg Industry*, Jan. 1998, p. 4.

[12] "Nation's Broiler Industry," *Broiler Industry*, Jan. 1999, pp. 20A-20F.

[13] "The Year of Consolidation, Acquisitions," *Egg Industry*, Jan. 1998, p. 8.

Marketing Methods and Distribution

In general, hatching eggs are utilized either by shell egg-producing firms to obtain laying hens, or by poultry meat producers to obtain growing stock. However, a relatively small amount of hatching eggs are marketed by breeding firms to egg and poultry meat producers as breeder stock.

Most table eggs are sold through distributors, who then sell mainly to retail outlets (principally grocery stores) and public eating places (such as restaurants) (figure 3). Egg packers also directly market a substantial portion of their output to retail outlets, international food service operators, and other processors (who further process products for sale to retail outlets and restaurants, mostly fast-food outlets). Based on estimates by the United Egg Producers, in 1998, about 55 percent of eggs were sold through retail outlets (about 3,155 million dozen), 15 percent were sold for food service use (860 million dozen), and 29 percent (1,664 million dozen) were marketed for further processing. The remaining one percent were exported.[14]

Most egg products are marketed directly by processors or through distributors to food processors and institutional food service operators. A relatively small share is marketed directly from farms to retail outlets. Egg-marketing channels and methods have changed substantially over the years, particularly during the 1980s. A much greater share of egg production currently is marketed through restaurants, particularly fast-food outlets, than in the past. Also, a greater share of egg production is marketed to egg breakers for further processing, as consumer demand for convenience foods has increased.

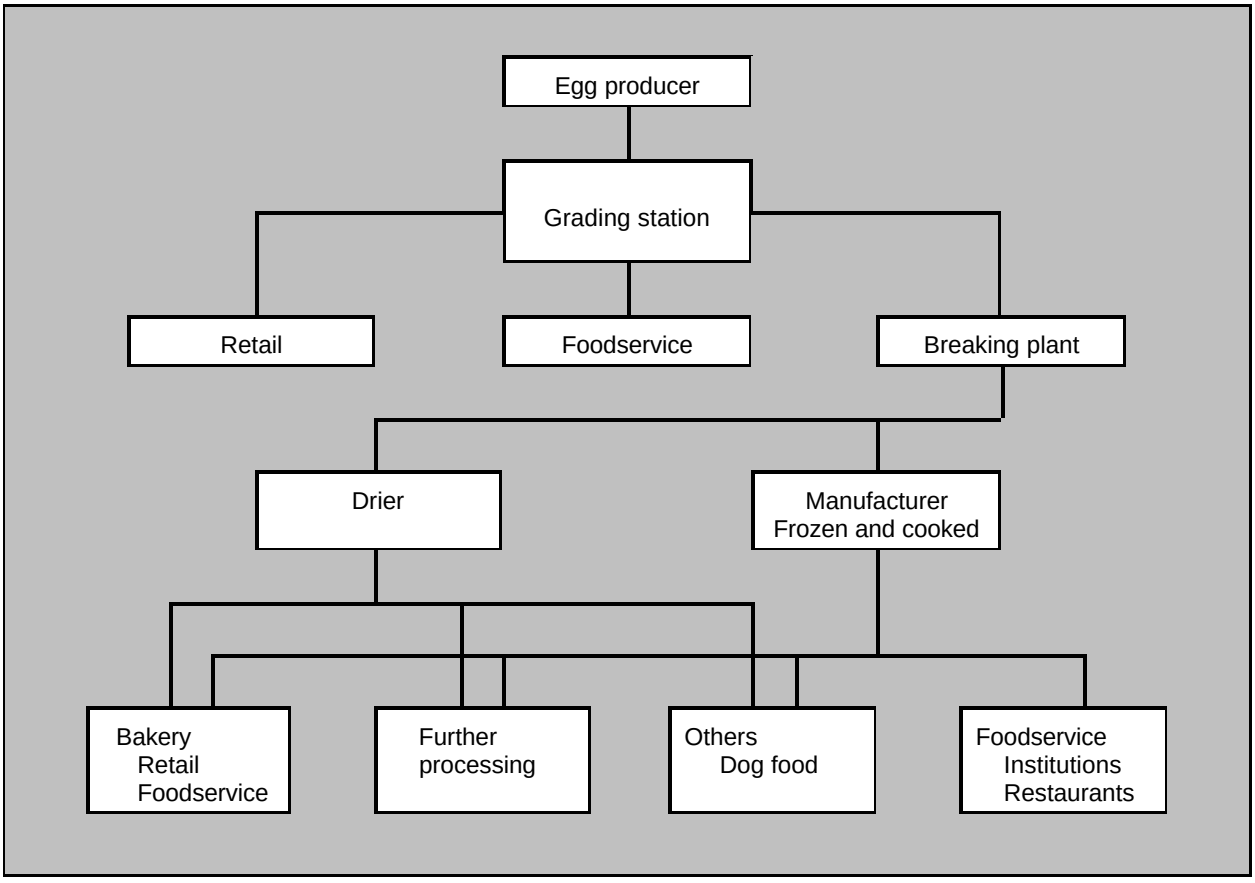
Profitability and Pricing Practices

The U.S. egg industry generally experienced positive returns during 1994-98 (table A-4). Net returns (price less variable costs) for table eggs ranged from 9 cents per dozen in 1994 and 1995 to 14.6 cents per dozen in 1998. Higher feed costs in 1996 (the wholesale cost of producing eggs increased from 67 cents per dozen in 1995 to 78 cents per dozen in 1996) resulted from sharply higher corn and soybean meal prices.[15] However, these cost increases were passed on to the wholesale price (i.e., selling price), such that the net margin actually increased. Feed cost reductions in 1997 and 1998 resulted in lower wholesale egg prices.

[14] United Egg Producers Homepage, found at Internet address *http://www.unitedegg.org/statistics.htm,* retrieved July 7, 1999.

[15] World grain and soybean prices increased substantially in 1996, owing to several factors, such as poor yields in the United States, cutbacks in acreage in the European Union, and higher import demand by China.

Figure 3
U.S. egg industry: Major market channels and product flow



Source: U.S. International Trade Commission.

Commodity wholesale prices for shell eggs are generally set at markets and production areas around the country based on price quotas published at various state departments of agriculture, the U.S. Department of Agriculture (USDA), and private organizations. The published price information is collected daily by these organizations through telephone contacts with sources such as egg packers, wholesalers, and brokers. Producers generally offer price variations based on the published quota, depending on daily market conditions. There are various price categories for shell eggs, depending on the destination.

Table eggs are generally sorted and graded by size and quality and priced accordingly, with larger, higher quality eggs priced higher than those that are smaller and lower in quality. Shell eggs destined for egg processors are generally marketed as "nest run" (ungraded eggs of many different size and quality categories) and are lower in price than graded, table eggs. Retail egg prices are set principally by retail outlets, which usually add a markup to the wholesale price that mainly reflects overhead costs. Retail outlets will, from time to time, feature eggs as a "loss leader" (a product sold with little or no profit margin) or a "tie in" to other products in order to attract customers to their establishments.

Prices for various egg product types and market levels increased between 1994 and 1996, but declined during 1997-98 (table A-5). This price trend was the result of supply and demand conditions during the period. Pricing has been a long-term concern in the egg industry, as a relatively small share of wholesale egg sale transactions largely determines wholesale egg prices. Although about 95 percent of egg sales are conducted under prenegotiated contracts, contract prices are based on price quotations for wholesale sales representing about 3 percent of the total market.[16]

U.S. Government Programs

There are no programs that specifically provide production assistance to the egg industry. Indirect government programs affecting the egg sector include loans provided by the Farmers Home Administration at below-market rates for operating and capital expenses, Federal and State inspection, and government-funded research services. In addition, programs that affect the U.S. feed grain industry (mainly corn), such as the Conservation Reserve Program, crop insurance, marketing loans to producers, and Export Enhancement Programs (EEP) for feed grains, affect feed prices and, therefore, poultry production costs.[17]

The principal form of government assistance that benefits the egg industry is programs aimed at increasing exports. U.S. poultry exports have received direct benefits from the USDA under the EEP.[18] The EEP program for eggs provides direct assistance for exports of eggs to approved markets. The EEP assists U.S. producers in meeting competition from subsidizing countries, such as the European Union (EU). The United States has established limits on the volume and value of assistance in accordance with its export subsidy commitments under the Uruguay Round Agreement on Agriculture (URAA) (table A-6).[19]

According to the USDA, 260 million dozen eggs were sold through the EEP from the time of the program's inception through 1998.[20] The total amount of assistance for the period was $63 million. Almost one-half of the eggs (126 million dozen) exported under the program were exported in FY1994[21] and FY1995, with assistance in those 2 years amounting to $28 million. This assistance was near evenly split between the support of egg exports to Hong Kong and the Near East countries (i.e., Bahrain, Kuwait, Oman, Qatar, United Arab Emirates (UAE), and Yemen). No EEP sales were made during FY1996-98, since U.S. product has generally been exported profitably without assistance.

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[16] "Importance of wholesale egg trading on price discovery," *Egg Industry*, July/Aug. 1994, p. 28.

[17] USDA, ERS, *Provisions of the Federal Agriculture Improvement and Reform Act of 1996*, Agriculture Information Bulletin No. 729, Sept. 1996.

[18] For a detailed explanation of the Export Enhancement Program, see USDA, FAS, *EEP Factsheet*, found at Internet address http://www.fas.usda.gov/info/factsheets/eep.html.

[19] USDA, FAS, *EEP Factsheet*, found at Internet address http://www.fas.usda.gov/info/factsheets/eep.html, retrieved July 5, 1998.

[20] EEP was introduced in the Food Security Act of 1985. Information on assistance to egg exports under the EEP was provided to USITC staff by the USDA, FAS.

[21] Fiscal year July 1, 1993 - June 30, 1994.

U.S. egg exports periodically have been eligible for export credit guarantees under the Export Guarantee Program, generally known as GSM-102.[22] The GSM-102 program guarantees repayment (to exporters or assignees) of short-term loans (6 months to 3 years) made to eligible foreign markets for approved U.S. agriculture exports. GSM-102 activity for eggs and egg products was minimal during 1994-98. However, in 1997, the USDA received applications for $1.2 million under the program to assist in exporting egg products to Russia.[23]

Another program is the Market Access Program (MAP), which provides financial assistance to support U.S. entities (including producers, exporters, private companies, and trade associations) in promoting their products in overseas markets.[24] Funds are made available through the USDA Commodity Credit Corporation (CCC). MAP funding is used to develop and expand export markets around the world, through activities such as consumer research, promotion, and technical assistance. For FY99, a total of $90 million in MAP funds was allocated to trade organizations, of which the USA Poultry and Egg Export Council (USAPEEC) received $3.3 million.[25]

The American Egg Board (AEB) was established in 1974 under the Egg Research and Consumer Information Act.[26] The AEB's mission is to "allow egg producers to fund and carry out proactive programs to increase markets for eggs, egg products, and spent fowl products through promotion, research, and education."[27] Funding for the AEB is through a national checkoff paid on all egg production from companies that have more than 75,000 layers.[28] The current rate of assessment is 10 cents per case (30 dozen) produced.[29]

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[22] For further information on the GSM-102 program, see USDA, FAS, *CCC Export Credit Guarantee Programs (GSM-102/103) Factsheet*, found at Internet address *http://www.fas.usda.gov//info/factsheets/ gsmprog.html.*

[23] USDA, FAS, *Monthly Summary of Export Credit Guarantee Program Activity*, Sept. 1997.

[24] USDA, FAS, *Market Access Program*, found at Internet address *http://www.fas.usda.gov/mos/programs/* mapprog. html, retrieved July 6, 1998.

[25] USDA, FAS, "USDA announces MAP Allocations for fiscal 1999," FAS Release No. 0265.99, July 25, 1999, found at Internet address *http://www.fas.usda.gov/scriptsw/pressrelease/pressrel*_dout.idc?PrNum=0232-99, retrieved October 29, 1999.

[26] 7 U.S.C. 2701 et seq. [Public Law 93-428].

[27] American Egg Board, Homepage, found at Internet address *http://www.aeb.org/aeb/index.html,* retrieved Oct. 29, 1999.

[28] American Egg Board, Organization, found at Internet address http://www.aeb.org/aeb/organization.html, retrieved Oct. 29, 1999.

[29] American Egg Board, Annual Report, found at Internet address http://www.aeb.org/aeb/report/annual98/ AEB%201998%20Annual%20Report.html, retrieved Oct. 29, 1999.

U.S. Government Regulations

Regulation to ensure the safety of eggs and egg products is shared by the Food and Drug Administration (FDA) and the USDA. The FDA, under the Federal Food, Drug, and Cosmetic Act,[30] has the authority to regulate food safety in general, including the safety of shell eggs.[31] The FDA conducts inspections of production and processing facilities in the United States to ensure that the conditions under which eggs are prepared, packed, and held meet certain standards. These standards generally apply to ingredients, production processes, and labeling. Labeling regulations provide for mandatory labeling of nutrition information, including fat and cholesterol levels; definitions for descriptive terms such as "light," "lean," and "fresh;" and conditions for health claims concerning calcium and osteoporosis, fat and cardiovascular disease, fat and cancer, and salt and hypertension.

The USDA has the authority to regulate the safety of egg products through the Egg Products Inspection Act (EPIA) of 1970.[32] EPIA requires that egg products produced and marketed are wholesome, safe, and accurately labeled.[33] The EPIA provides for the continuous inspection of the processing of egg products and the control and disposition of restricted shell eggs.[34] Following reorganization of the USDA in 1994, responsibility for implementing the EPIA was transferred from the USDA's Agricultural Marketing Service (AMS) to USDA's Food Safety and Inspection Service (FSIS); however, in practice, implementation is currently shared between the two agencies.[35]

The role of FSIS is to continually inspect plants that process liquid, frozen, and dried egg products,[36] in order to ensure that minimum standards are maintained with respect to plant facilities and equipment, sanitation, processing procedures, and the testing of pasteurized products for salmonella.[37] FSIS is also responsible for ensuring plants comply with regulations covering packaging and labeling of egg products. In 1998, about 100 inspectors monitored 73 U.S. egg product plants, and FSIS also had cooperative agreements with six States to provide inspection of egg products.[38]

AMS has several roles in ensuring the safety of shell eggs and egg products.[39] For example, under the authority of the EPIA, the AMS (Grading Branch) is responsible for the shell egg

[30] 21 U.S.C. 301, et seq.

[31] Federal Register: Salmonella Enteritidis in Eggs, vol. 63, No. 96, pp. 27502-27511, May 19, 1998.

[32] 21 U.S.C. 1031 et seq.

[33] USDA, AMS, Poultry Programs - Shell Egg Surveillance, found at Internet address http://www.ams.usda.gov/poultry/pysurve.htm, retrieved Oct. 29, 1999.

[34] Ibid.

[35] USDA, FSIS, Focus on: Egg Products, found at Internet address http://www.fsis.usda.gov/oa/pubs/ eggprod.htm, retrieved July 7, 1999.

[36] Statement of Margaret Glavin, Associate Administrator, FSIS, before the Senate Committee on Governmental Affairs, Subcommittee on Oversight of Government Management, Restructuring, and the District of Columbia, July 1, 1999.

[37] Ibid.

[38] Ibid.

[39] USDA, FSIS, All About Shell Eggs, found at Internet address http://www.fsis.usda.gov/OA/pubs/ shelleggs.htm, retrieved Oct. 29, 1999.

surveillance program. Under the program, eggs are graded in order to ensure that the number of restricted eggs[40] marketed does not exceed the limit allowable in the U.S. Consumer Grade B.[41] AMS is also mandated (under EPIA) to establish rules over the labeling and the disposal of restricted eggs.[42] AMS visits shell egg handlers and hatcheries four times each year to ensure conformance with these requirements.[43]

As a service to shell egg processing plants, the AMS is also responsible for a voluntary grading program for shell eggs (supported by user fees) that addresses egg quality.[44] The program permits processors who have met certain USDA standards for sanitation and manufacturing practices (such as quantity, quality, condition, formulation, net weight, packaging, storage, and transportation) to place a USDA shield on eggs cartons.[45] AMS also is responsible for monitoring the safety of imported eggs (see the U.S. Nontariff Measures section of this Summary).

In early 1998, the FSIS began implementing a system called the Hazard Analysis and Critical Control Point (HACCP) System.[46] Application of the HACCP system to the meat, poultry, and egg industries is aimed at controlling, reducing, and preventing pathogens in meat and poultry, and stresses the prevention of contamination by identifying and controlling points in the production and processing system that are prone to contamination hazards.[47]

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[40] Restricted eggs include leakers (eggs with broken or cracked shells and with their contents leaking), inedible (eggs that have rot, mold, blood rings, or embryo chicks), incubator rejects (eggs that have been unsuccessfully incubated), checks (eggs with broken or cracked shell but with shell membranes intact and not leaking), and dirties (eggs that have adhering dirt, foreign material, or prominent stains on their shells).

[41] USDA, AMS, *Shell Egg Surveillance*, found at Internet address http://www.ams.usda.gov/poultry/ pysurve.htm, retrieved June 17, 1999.

[42] USDA, AMS, *Directory of Grading Offices and Plants Operating Under USDA Poultry and Egg Grading Program*, June 1998, p. 2.

[43] Ibid.

[44] USDA, AMS, *Directory of Grading Offices and Plants Operating Under USDA Poultry and Egg Grading Program*, June 1998, p. 2.

[45] Statement of Margaret Glavin, Associate Administrator, FSIS, before the Senate Committee on Governmental Affairs, Subcommittee on Oversight of Government Management, Restructuring, and the District of Columbia, July 1, 1999.

[46] Seven principles apply to how meat and poultry establishments are to design, develop, implement, and control a HACCP plan for their operations. The principles of a HACCP system are (i) to conduct a hazard analysis by preparing a list of steps in the process where food safety hazards are reasonably likely to occur and describing the preventative measures necessary to control the hazards; (ii) to identify critical control points in the process, (iii) to establish critical limits for preventative measures associated with each identified critical control point, (iv) to establish critical control point monitoring requirements, and establish procedures from the results of monitoring to adjust the process and maintain control, (v) to establish corrective actions to be taken when monitoring indicates a deviation from an established critical limit at a critical control point, (vi) to establish and maintain effective record keeping procedures that document the entire HACCP system, and (vii) to establish procedures for systematic verification that the HACCP system is working correctly and effectively. Under the new rules, the USDA could deny permits to plants to operate as Federally inspected plants if HACCP systems fail to be implemented. For more information on the HACCP system, see the USDA, FSIS, *Homepage*, at Internet address http://www.fsis.usda.gov /OA/haccp/imphaccp.htm.

[47] USDA, Office of Communications, "Food Safety," ch. 9 in *Agriculture Fact Book 1998*, found at Internet address http://www.usda.gov/news/pubs/fbook98/content.htm, retrieved Nov 1.

At present, HACCP systems have been implemented in meat and poultry plants.[48] Under the new system, each plant operates under a HACCP plan designed to prevent contamination of meat and poultry. In addition, plants must maintain the standard operating procedures for sanitation and will test for generic E. coli. For meat and poultry plants, larger establishments were required to begin using HACCP by January 1998. Smaller companies started in January 1999, while very small plants have until January 2000 to implement the system. At present, HACCP plans for egg product plants are not mandatory. However, the FSIS is currently working on proposed regulations to implement HACCP systems for egg product plants. The FSIS will collect samples to ensure that plants are controlling and reducing the number of eggs contaminated with salmonella.

Research and Development

The rapid growth in industry productivity over the last 20 years has largely been the result of research and advances in technology development. Research and development in the egg industry can be broadly categorized into four major areas: animal genetics, health, and nutrition; production technology; processing technology; and development of consumer products and market research.

Research on animal genetics, health, and nutrition is conducted at many universities throughout the United States, as well as by the major egg-producing companies. Poultry scientists are continuing to work on the prevention of important diseases of poultry such as Avian Influenza (AI), Newcastle Disease, Marek's Disease, and Cellulitis,[49] while research continues to focus on bird nutrition and improving the efficiency of poultry feeds.[50] Biotechnology is also being utilized to improve poultry breeding, nutrition, and health care. For example, biotechnology is being used to develop enzyme products that can increase utilization of the nutrients in feed; provide solutions to health care problems through better techniques in diagnosis and vaccine production; and improve disease resistance through genetically modified birds.[51] Research is also being conducted on the potential impact of genetically modified feed ingredients on egg composition and quality.[52]

1999.

[48] USDA, FSIS, "Questions And Answers/Hazard Analysis And Critical Control Point (HACCP) Systems," found at Internet address http://www.fsis.usda.gov/OA/haccp/haccpq&a.htm, retrieved Nov 1, 1999.

[49] "Avian Influenza: Control and Prevention," *Poultry International*, Apr. 1998, pp. 32-45; "Newcastle Disease: Prevention and Control," *Poultry International*, Feb. 1998, pp. 26-30; "Current and Future Strategies to Control Marek's Disease," *Poultry International*, Jan. 1998, pp. 40-43; "Current Developments in Marek's Disease," *Egg Industry*, Oct. 1997, p. 14.

[50] "Protein, Energy Levels for Growing Pullets," *Egg Industry*, June 1997, p. 6;" Enzymes: A New Generation of Poultry Feed Additives," *Egg Industry*, June 1998, p. 14; "11th European Symposium on Poultry Nutrition," *Poultry International*, Dec. 1997, pp. 40-46; "Nutrition Opportunities," *Poultry International*, Dec. 1997, pp. 48-50.

[51] "Biotechnology Revolution," *Poultry International*, Feb. 1997, pp. 38-39.

[52] "GM Ingredients Unlikely to Transfer into the Egg," *Egg Industry*, April 1999, p. 4.

In the egg production sector, research and development is aimed at improving efficiency and increasing returns to egg producers. Every year new devices become available aimed at improving the efficiency of hen management, through improved systems of caging, feeding, water provision, waste removal, and control of flies. New innovations include computerized egg counting machines and the use of robotics for egg handling and packaging.[53] Considerable research has been undertaken on methods of egg washing and cooling in order to minimize the build up of bacteria in the egg.[54] Research has also been undertaken to improve the strength of the shell, thereby reducing farmer losses through breakage.[55] Finally, researchers have been working on methods to improve the value of spent chickens, through improving spent chicken meat quality and in preparation of birds for rendering.[56]

In the egg-processing sector, research and development is a requirement for firms to stay competitive. For instance, while the cholesterol content of eggs has been a concern, another important aspect is the total fat content of eggs. Thus, research has looked into developing ways to remove the cholesterol and fat content from eggs (these cannot be influenced significantly through the diet of the bird).[57] Current techniques, such as supercritical carbon dioxide extraction, are costly and involve substantial capital investment.[58] Another area of research involves techniques for removing certain egg components. For example, improved methods for commercially isolating lysozyme[59] from egg white is of continuing interest to the egg industry.[60] Shell egg pasteurization by using various heating processes is also receiving increasing attention from researchers.[61] The challenge is to heat the eggs to salmonella-killing temperatures without altering their properties and characteristics (such as coagulating whites or denaturing the proteins).[62] Other research is analyzing procedures in which eggshell waste can be converted into value-added products.[63] Examples include production of degradable plastic from eggshell membrane proteins. In addition, eggshell or eggshell membrane collagen could have wide applications in the pharmaceutical and cosmetics industries.[64] Research has also been conducted into the application of HACCP systems in egg-processing operations.[65]

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[53] "Another Record Year for IPE," *Egg Industry*, Mar. 1996, pp. 2-5.

[54] "Rapid Cooling Will Producer Safer, Higher Quality Egg," *Egg Industry*, May 1998, p. 6; "Revisiting Egg Cooling Methods," *Egg Industry*, Jan. 1996, p. 21; "Re-Examining Egg Washing Methods," *Egg Industry*, Feb. 1998, p. 20.

[55] "Maintaining Egg Shell Quality During Heat Stress," *Egg Industry*, Oct. 1997, pp. 6-12.

[56] "Research Investigates Disposal, Utilization of Spent Hens," *Egg Industry*, Apr. 1997, p. 6; "Utilization of Spent Fowl," *Egg Industry*, May 1997, p. 19.

[57] "Redesigning the Lipid Composition of Eggs," *Egg Industry*, Jan. 1995, p. 21.

[58] "Altering the Egg's Composition," *Egg Industry*, Mar. 1998, p. 20.

[59] Lysozyme has antibacterial properties and is used as a food preservative and for treatment of infections. It is used as a cheese preservative and is found in some cold medications, as well as in eye drops.

[60] "Isolation of Lysozyme," *Egg Industry*, May 1999, p. 20; "Emerging Egg Technology," *Egg Industry*, Nov. 1996, p. 21.

[61] "Shell Egg Pasteurization," *Egg Industry*, Dec. 1998, p. 21.

[62] "Another Specialty Egg Coming: Pasteurized Shell Eggs," *Egg Industry*, Feb. 1996, p. 2

[63] Eggshell wastes are frequently discharged to dump sites, spread on fields as lime fertilizer, or serve as a calcium source for laying hens.

[64] "A Novel Way of Treating Eggshell Wastes," *Egg Industry*, June 1998, p. 6; "More from the International Egg Commission Meeting," *Egg Industry*, Dec. 1996, p. 6.

[65] "HACCP in Eggs and Egg Products," *Egg Industry*, June 1998, p. 8.

Research is also being conducted by food scientists to improve the versatility and quality of eggs and egg products. New products are continually being developed, especially products designed to meet the needs of consumers. One area is the development of so-called "designer" eggs which have specific properties and characteristics.[66] For example, researchers have been able to reduce the cholesterol content of eggs by altering the feed composition of laying hens. Also, eggs with significantly more vitamin E than ordinary eggs have been produced from hens fed with kelp (seaweed). In addition, eggs have recently been produced that are high in Omega-3 and Omega- 6 fatty acids, particular types of fat that may reduce the risk of cardiovascular disease and are also important for cell growth, blood clotting, cholesterol and fat metabolism, and brain development.[67] Another area of research is on egg allergens; studies are being undertaken to better understand and eliminate allergic reactions from eggs.[68]

Consumer research is also being conducted to provide quantitative and qualitative information on consumer attitudes toward cholesterol, saturated fat, food safety, convenience, and the nutritional benefits of eggs. Research is also being conducted on egg consumption trends, perception of eggs versus other breakfast foods, and the profile of egg users. This research, conducted mainly by the AEB, is designed to help egg companies tailor their products to the changing needs of consumers, as well as to provide information for the AEB's advertising and promotion programs.[69] A considerable body of research has also been undertaken on the link between egg consumption, cholesterol, and risk of coronary heart disease.[70] A recent study by the Harvard School of Public Health concluded that one egg a day is unlikely to impact the risk of coronary heart disease or stroke among healthy people.[71]

Extent of Globalization in Industry

The level of foreign investment in the U.S. egg industry is low. An exception is the breeder sector of the industry, which includes several foreign-owned, multinational companies. However, this sector is small compared with the total output of the industry. Foreign investment by U.S. egg firms has increased in certain foreign markets in recent years. For example, in early 1999, Michael Food, Inc. bought a 25-percent share of the Belgium-based firm, Belovo S.A. Belovo's operations include the production of customized dried egg products and certain nutraceutical egg products, as well as lysozyme extractions.[72] In late 1999, Michael Foods also formed a joint venture with two Canadian egg firms (Canadian Inovatech, and Egg Producers Co-op Ltd.) in the production, processing, and marketing of value-added egg products.[73] Hudson Foods recently purchased an equity position in Cedrob S.A., Poland's top producer of chicks for table egg production.[74] In addition, U.S.-based

[66] "Designer and Specialty Eggs," *Egg Industry*, Aug. 1997, p. 6.

[67] "Pilgrim's Pride Introduces EggsPlus," *Egg Industry*, Aug. 1997, p. 4; "NU Seeks Patent on System to Produce Omega Eggs," *Egg Industry*, Mar. 1998, p. 12.

[68] "Egg Allergen Research," *Egg Industry*, Mar. 1999, p. 21.

[69] "Highlights: American Egg Board," *Egg Industry*, Sept. 1997, p. 4.

[70] "Eggs in a Healthy Diet," *Egg Industry*, Oct 1996, p. 20.

[71] "An Egg a Day is Really Okay," *Egg Industry*, May 1999, p. 1.

[72] "Michael Foods Makes European Investments," *Egg Industry*, Feb. 1999, pp. 1 and 6.

[73] "Michael Food Forms Canadian Joint Venture," *Egg Industry*, Oct. 1999, p. 2.

[74] "Hudson Foods Invests in Polish Poultry Firm," *Egg Industry*, June 1997, p. 6.

Chick Master Incubator Company recently purchased La Nationale, a leading French incubator company specializing in small incubation systems for poultry.[75]

U.S. MARKET

The U.S. egg market is one of the largest in the world, accounting for about 10 percent of world table egg consumption in 1998, trailing only China and the EU (table A-7). Lower feed costs and highly capital intensive production and processing technology make the United States one of the world's most efficient egg-producing countries. In 1998, the United States supplied almost 11 percent of world production, again ranking third behind China and the EU (table A-8).

Factors Affecting Demand and Consumer Characteristics

Factors affecting the demand for most agricultural products, including eggs, can be generally categorized into market size factors and consumer preference factors.[76] The primary market size factors include the size of the population and disposable income, while major consumer preference factors include price level and price relative to substitute products, consumer tastes, product attributes, and product advertising. All these factors have contributed to the trends in egg consumption since the mid-1970s.

The growth in U.S. population and real per-capita disposable income has increased the overall size of the egg market over the past several years. For example, between 1994-98, the annual growth of the U.S. population was 1 percent, increasing the potential market for eggs by 10 million persons.[77] Over the same time period, real per-capita disposable income in the United States grew by 2 percent annually. The price elasticity of demand for table eggs has been estimated at -0.11,[78] suggesting that price changes have a relatively small impact on the quantity demanded. Although estimates of the income elasticity of demand for eggs are not available, data from one study indicate that the consumption of table eggs tends to decrease as consumer income increases.[79]

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[75] "Chick Master Acquires La Nationale," *Egg Industry*, July 1999, p. 2.

[76] For a detailed discussion of factors affecting demand for agricultural products, see William G. Tomek and Kenneth L. Robinson, *Agricultural Product Prices*, Cornell University Press, Ithaca, NY, 1985. Also, see USDA, ERS, *The Food Marketing Revolution, 1950-91*, Agricultural Economic Research Bulletin No. 660, Sept. 1992.

[77] Population and real disposable income sourced from USDA, ERS, Table 2—U.S. Gross Domestic Product and Related Data, *Agricultural Outlook*, various issues, 1995-98.

[78] Huang, K.S., "A Complete System of U.S. Demand for Food," USDA, ERS, Technical Bulletin No. 1821, Sept. 1993, p. 27.

[79] Lutz, S. M., D. M. Smallwood, J. R. Blaylock, and M.Y. Hama, *Changes in Food Consumption and Expenditures in American Households During the 1980s*, USDA, ERS, Statistical Bulletin No. 849, Dec. 1992.

Perhaps the major factors behind egg consumption trends are consumer preference factors, in particular, concern over the cholesterol content of eggs and the risk of coronary heart disease and stroke. Numerous medical studies have linked cholesterol to heart disease. Under the USDA and American Heart Association nutritional guidelines, an average egg contains about 213 milligrams of dietary cholesterol, or 71 percent of the recommended daily allowance of 300 milligrams. The "cholesterol scare" is estimated to have cost the egg industry at least $10 billion in lost revenues.[80] Mainly through the AEB, the industry has responded to the negative implications of egg cholesterol content by sponsoring research into both the link between cholesterol and health and ways to lower the cholesterol content of eggs, and by supporting a consumer education program promoting the use of eggs in moderation as part of a balanced diet.[81] A recent Cornell University study indicated that the returns to generic egg advertising expenditures were positive in terms of stimulating consumption and raising prices.[82] The study found that in California, the marginal rate of return was 7 (i.e., an additional dollar added to existing expenditure levels generated $7 in producer profits).[83]

Another recurring concern in the U.S. egg industry is the contamination of eggs by salmonella.[84] Several outbreaks of salmonella in the past have been blamed on eggs, leading extensive research on pasteurization techniques for both shell eggs and egg products (see Research and Development section above). The salmonella issue has adversely affected the consumption of eggs and is a key factor in the increased demand for egg products (in which salmonella is eliminated through processing). For example, several large foodservice chains have switched from fresh shell eggs to pasteurized liquid eggs.

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[80] "The Cholesterol Controversy," *Egg Economic Update*, Cooperative Extension University of California-Davis, No. 215, May 24, 1999, found at Internet address http://animalscience.ucdavis.edu/extension/ avian/eeu599.htm, retrieved July 23, 1999.

[81] "AEB Launches Massive Media Blitz," *Egg Industry*, July 1997, p. 2; "Highlights: American Egg Board," *Egg Industry*, Sept. 1997, p. 4.

[82] Reberte, J. C., T. M. Schmit, and H. M. Kaiser. "An Ex Post Evaluation of Generic Egg Advertising in the United States." National Institute for Commodity Promotion and Research Evaluation 96-07, R. B. 96-15, Department of Agricultural, Resource, and Managerial Economics, Cornell University, Oct. 1996.

[83] Schmit, T. M., J. C. Reberte, and H. M. Kaiser. "An Economic Analysis of Generic Egg Advertising in California, 1985-1995." National Institute for Commodity Promotion and Research Evaluation 96-06, R. B. 96-14, Department of Agricultural, Resource, and Managerial Economics, Cornell University, Oct. 1996.

[84] "Salmonella Enteritidis: The Undefined Threat," *Egg Industry*, Jan./Feb. 1991, p. 18.

Consumption

Consumption Trends

During 1994-98, U.S. egg consumption increased from 5,907 million dozen to 6,345 million dozen, an increase of more than 7 percent (table A-9). While the number of hatching eggs consumed declined slightly during the period, consumption of table eggs increased by almost 7 percent, while the total consumption of egg products increased by 15 percent. These trends are significantly different from the 5-year period 1989-93, when hatching egg consumption increased by 18 percent, table egg consumption fell by 4 percent, and egg product consumption increased by 30 percent.[85]

Per capita consumption of table eggs and egg products during 1994-98 is shown in table A-10, while data for the period 1970-98 is shown in figure 4. Annual per capita egg consumption rose by 12 eggs between 1994 and 1998, from 231 eggs to 243 eggs, with an increase in both table and egg product consumption. Perhaps the most significant observation is that the trend of declining per capita table egg consumption since 1979 bottomed out in 1994 (at 174 eggs),[86] following which consumption increased in each year during 1994-98. Meanwhile, per capita consumption of egg products continued its rise which started in the early 1980s.[87] As a result, egg product consumption as a share of total egg consumption remained fairly stable during 1994-98 at about 25 percent, whereas during the 1980s and early 1990s, its share increased significantly.[88] These data may indicate that the cholesterol scare and health fears over salmonella have run their course, and that the advertising and consumer education efforts of the AEB are finally paying off.

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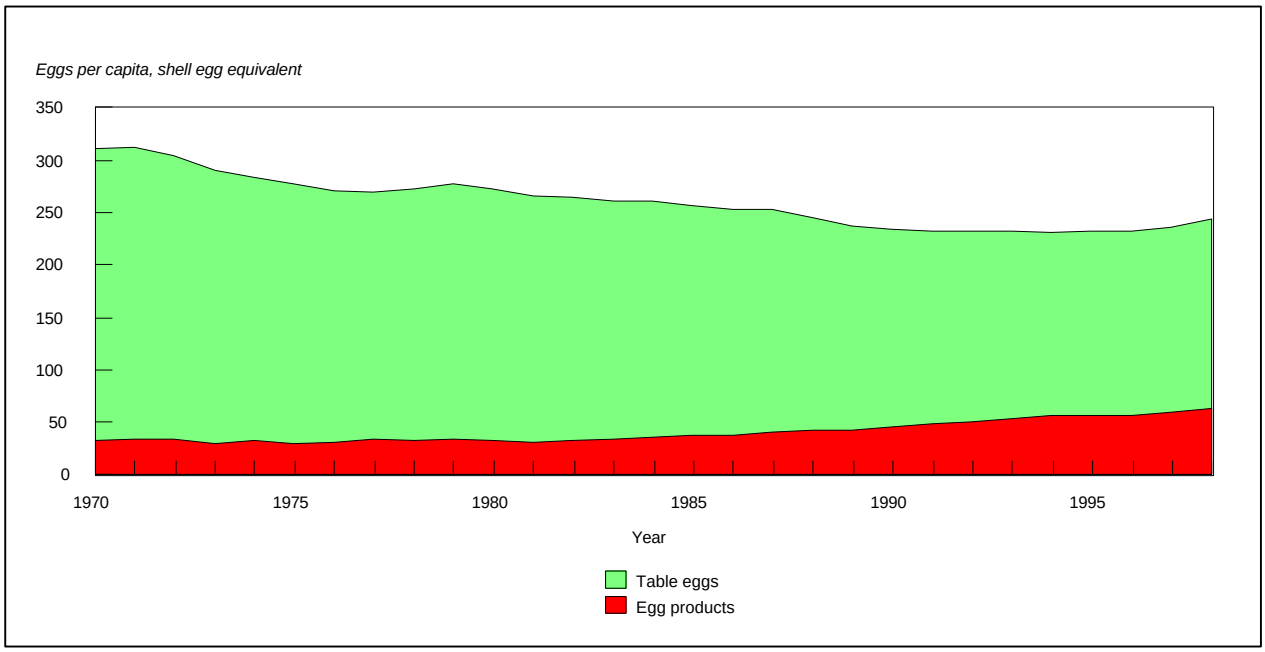
[85] USITC, *Egg Summary*, USITC publication 299, Oct. 1995.

[86] Between 1979 and 1994 per capita table egg consumption fell by almost 30 percent.

[87] Between 1981 and 1998, the consumption of egg products more than doubled.

[88] For a detailed discussion of consumption trends during the 1980s and early 1990s, see U.S. International Trade Commission, *Industry & Trade Summary. Eggs*, USITC Publication 2919, Oct. 1995. pp 18-20.

Figure 4
Eggs: U.S. annual per capita consumption, by type, 1970-98



Source: USDA, ERS, *U.S. Egg and Poultry Statistical Series,* 1960-92; and USDA, ERS, *Livestock Situation and Outlook,* various issues

Import Penetration Levels

The United States is one of the world's most efficient egg-producing countries; consequently, its imports are negligible, except for hatching eggs. During 1994-98, imports of table eggs and egg products accounted for less than 0.5 percent of the value of domestic consumption (tables A-11 and A-12). Imports of hatching eggs accounted for less than 0.5 percent of the quantity of domestic consumption, and between 0.5 percent and 2.2 percent of the value of consumption during the period (table A-13).

Conditions of Competition Between Foreign and U.S. Eggs

The primary competitive factors that determine international competitiveness for eggs and egg products are price, quality of product, production costs (mostly feed costs), transportation, and health and sanitary restrictions. Exchange rates can also be important determinants of international competitiveness. Conditions of competition between foreign and U.S. eggs can therefore be gauged by comparing prices and costs across countries. An international survey of such costs and prices was undertaken in early 1998, and some of the results are reported in table A-14. According to the survey, the United States is the world's lowest cost producing country, closely followed by Canada, Brazil, and the Ukraine. These are major grain-producing countries, thus providing egg producers with abundant feed supplies at low cost. The high-cost producers include China and Japan, both of which are grain deficit countries.

Production

Total U.S. egg production increased from 6,177 million dozen in 1994 to 6,659 million dozen in 1998, representing an increase of almost 8 percent (table A-15). Hatching egg production rose by 2 percent between 1994 and 1998, and accounted for 14 percent of total egg production in 1998. Increased demand for poultry meat accounted for the bulk of this rise. In response to increased consumer demand, table egg production increased by almost 6 percent over the same period to over 4 billion dozen in 1998. Egg product production rose by about 17 percent during 1994-98, and accounted for one-quarter of total egg production in 1997 and 1998.

U.S. TRADE

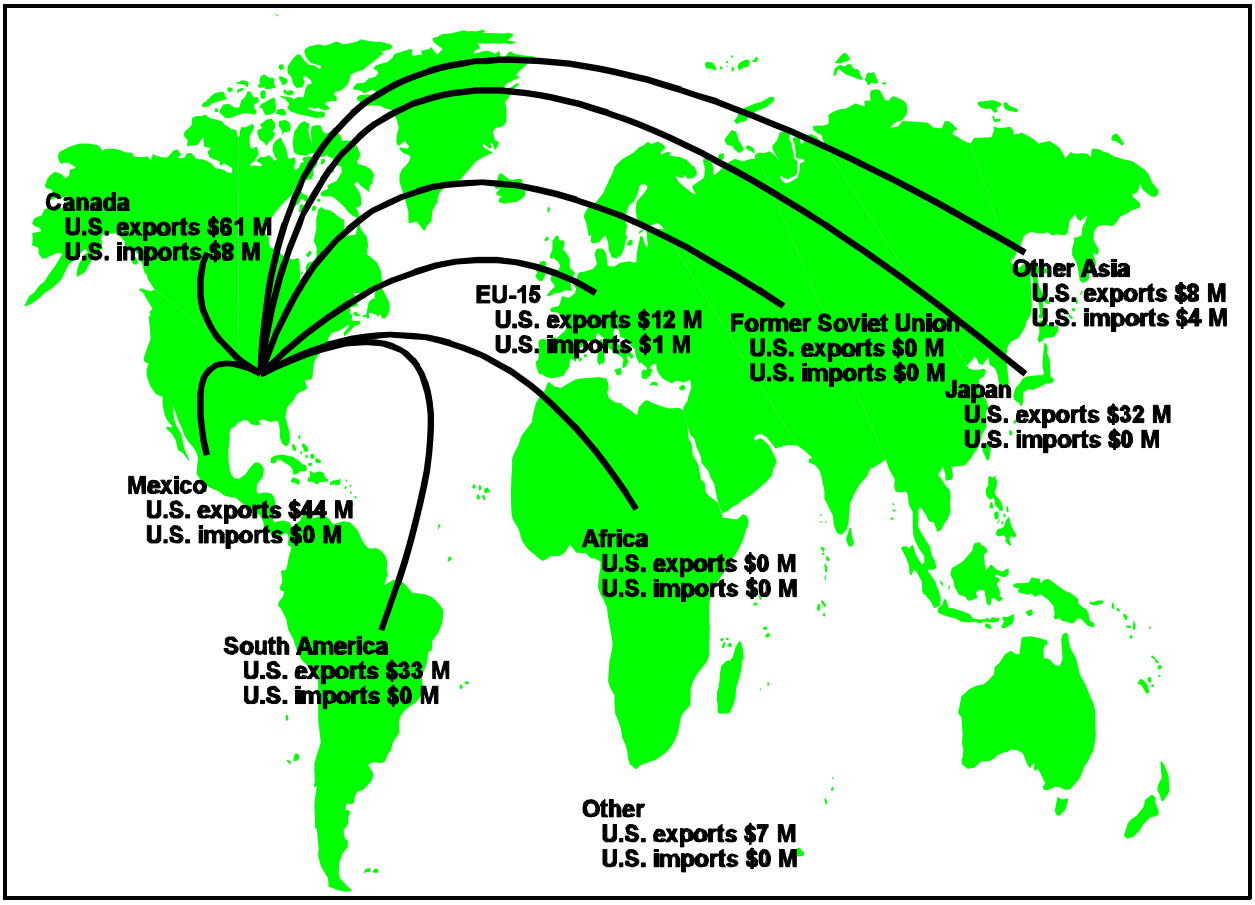
Overview

The U.S. egg industry historically has been oriented toward the domestic market. However, between 1994 and 1998, U.S. exports rose by about 50 million dozen eggs, an increase of more than 18 percent (table A-1). The United States is the second-largest exporter of eggs (just behind the EU) and in 1998 accounted for approximately one-third of total world exports (table A-16). Exports represented only about 5 percent of production in 1998 (table A-1), although in 1996 exports of egg products accounted for as much as 18 percent of egg product production (table A-12). About two-thirds of egg exports are egg products, while table eggs and hatching eggs each account for about 15 percent. The major markets for U.S. egg exports are Canada, Mexico, and Japan (figure 5).

As mentioned earlier, the U.S. industry benefits from low feed costs, highly skilled labor, state-of-the-art production and processing technology, and substantial investments in export market development. Consequently, foreign egg producers are generally not competitive with domestic producers in the U.S. market, and thus imports typically account for an insignificant portion of the U.S. egg market (tables A-1, A-11, A-12, and A-13). In addition, health and sanitary restrictions limit U.S. imports of eggs and egg products. The United States imported only 1 percent of world egg imports in 1998 (table A-17). Most U.S. egg imports come from Canada (figure 5).

The U.S. balance of trade in eggs is positive and growing. During 1994-98, this balance increased by about 50 percent from $128 million to $193 million (table A-18). Virtually all of the improvement in the balance of trade was accounted for by increased exports, which rose from $158 million in 1994 to $207 million in 1998. Imports declined by more than 50 percent during 1994-98. The balance of trade improved for virtually every major market during the period.

Figure 5
Eggs: An Overview of U.S. trade, 1998



Note.—$0 indicates trade of less than $500,000.

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

U.S. Imports

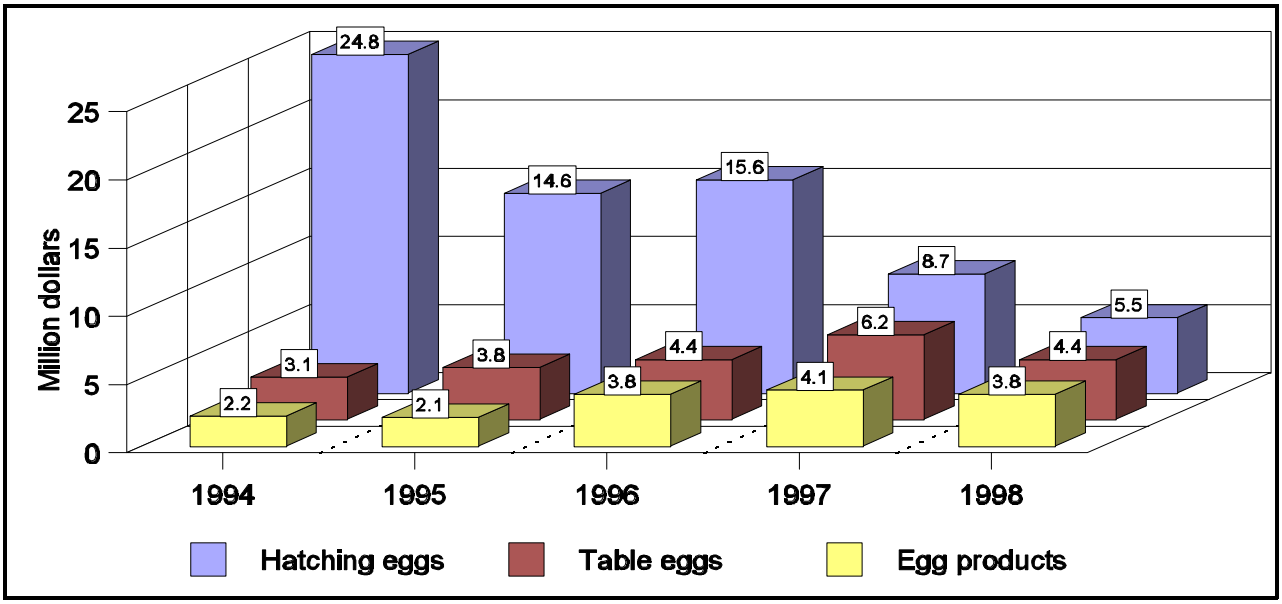
As mentioned, foreign egg producers generally cannot compete with the relatively low-cost U.S. industry in the U.S. domestic market. In addition, health and sanitary restrictions limit foreign sources and product forms of U.S. egg imports. Furthermore, the perishable nature and commodity status of fresh shell eggs discourage long-range shipping from areas whose egg producers enjoy certain cost advantages (such as low-cost labor) over U.S. producers. As a result, imports typically account for less than 0.5 percent of the U.S. market for eggs annually and consist mainly of hatching eggs and specialty egg items.

Principal Import Suppliers and Import Levels

Products imported, levels, and trends

U.S. egg imports during 1994-98 (tables A-19 through A-22) are shown in figure 6. Imports amounted to $13.7 million in 1998; hatching eggs made up $5.5 million (40 percent), table eggs accounted for $4.4 million (32 percent), and $3.8 million (28 percent) were egg products. Imports declined significantly during 1994-98, mostly between 1994 and 1995 when they fell from $30 million to $20 million. This decline followed a sharp drop in both the quantity and value of imports of hatching eggs (consisting mainly of chicken and turkey breeder stock eggs) from the United Kingdom, Namibia, and Israel (table A-20). The continued decline in hatching egg imports between 1996 and 1998 was mainly because of a drop in imports from Canada.

Figure 6
Eggs: U.S. imports for consumption, by type, 1994-98



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

U.S. imports of table eggs reached $4.4 million in 1998, compared with $3 million in 1994 (up 43 percent) (table A-21). Over the same period, the quantity of table egg imports more than doubled, from 1.6 million dozen in 1994 to 3.8 million dozen in 1998. The majority of these imports consists of specialty egg products, such as preserved duck eggs; most of the remainder consists of breaking eggs for the egg product industry. U.S. imports of egg products reached $3.8 million in 1998, up from $2.2 million in 1994 (table A-22). The vast majority of these imports consists of liquid, frozen, and dried egg yolks and egg albumen. Most of the remainder is composed of specialty items, such as canned boiled quail eggs from Asia.

Principal import suppliers

Canada is the primary foreign supplier of U.S. imports of eggs. In 1998, Canada supplied over 56 percent of the quantity of U.S. imports of eggs, a share up from 36 percent in 1994 (table A-19). Imports from Canada have grown, both in total volume, and as a share of total U.S. imports, largely because of the reduction in U.S. tariffs on Canadian poultry products since 1994. Also, as mentioned, hatching egg imports, especially imports from the United Kingdom, dropped significantly between 1994 and 1995. Other major suppliers include China and Taiwan (specialty eggs), the EU (hatching eggs), and New Zealand (shell eggs).

U.S. importers

U.S. importers of eggs vary depending on the type of product. Hatching egg importers generally are U.S. subsidiaries of multinational poultry-breeding companies. These companies are based mainly in Canada and Europe, which are the sources of U.S. imports. U.S. shell egg importers mostly consist of egg packers and processors along the Canadian border. These importers form a regional market with Canadian suppliers and mainly import during periods of temporary market imbalance. Typically, U.S. importers of egg products are firms that import egg products for pharmaceutical and other specialized uses.

U.S. Trade Measures

Tariff measures

The provisions of the Harmonized Tariff Schedule of the United States (HTS) for eggs covered in this summary are shown in table A-23. This table shows the general and special column 1 rates of duty applicable to U.S. imports as of January 1, 1999. The table also shows 1998 U.S. exports and imports of eggs by HTS subheading. Appendix B includes an explanation of tariff and trade agreement terms.

The aggregate trade-weighted average rate of duty for all products included in this summary was 0.9 percent ad valorem in 1998, and the aggregate trade-weighted average rate of duty for dutiable products was 2.3 percent ad valorem (table A-24). Based on customs value, duties on hatching eggs were the lowest (at less than 0.1 percent ad valorem equivalent in 1998), while duties on shell eggs and egg products were slightly higher (between 1 and 2 percent ad valorem equivalent). In 1994, the average rate of duty was 0.6 percent ad valorem equivalent for all products, and 0.7 percent ad valorem equivalent based on dutiable value. This increase in tariffs during 1994-98 is the result of falling import values rather than tariff increases.

Nontariff measures

Under the EPIA, egg products may not be imported into the United States except from countries that have an egg product inspection system equivalent to that of the United States.[89] FSIS has responsibility for imported shell eggs for table use and for imported restricted eggs; however, FSIS has delegated this responsibility to AMS. FSIS is also responsible for monitoring the importation of shell eggs from countries that are not free of certain poultry diseases. Owing to the USDA's Animal and Plant Health Inspection Service's (APHIS) expertise in this area, APHIS carries out this program on behalf of the FSIS.[90]

U.S. Exports

The relatively large size and affluence of the domestic market, the perishability of fresh shell eggs, and agricultural policies in major world markets have tended to discourage exports. In recent years, however, slow consumption growth in the U.S. market, combined with rising incomes and population growth overseas, the increased availability of refrigerated transportation, and the availability of certain U.S. Government export assistance programs, have contributed to an increase in U.S. egg exports, both in absolute terms and as a share of U.S. output (table A-1). The United States is the second-leading world egg exporting country, behind the EU (table A-16). In 1998, the United States accounted for 33 percent of total world exports.

Principal Markets and Export Levels

Products exported, levels, and trends

U.S. egg exports during 1994-98 (tables A-25 through A-28) are shown in figure 7. U.S. egg exports amounted to $207.2 million in 1998 (table A-25), of which $108.1 million (52 percent) consisted of hatching eggs (table A-26), $63.8 million (31 percent) were egg products (table A-27), and $35.3 million (17 percent) were table eggs (table A-28). Exports increased significantly during 1994-98, mostly between 1995 and 1996 when exports rose from $164 million to $207 million. This increase followed a sharp rise in both the quantity and value of exports of egg products to Japan, Canada, and the EU (table A-28).

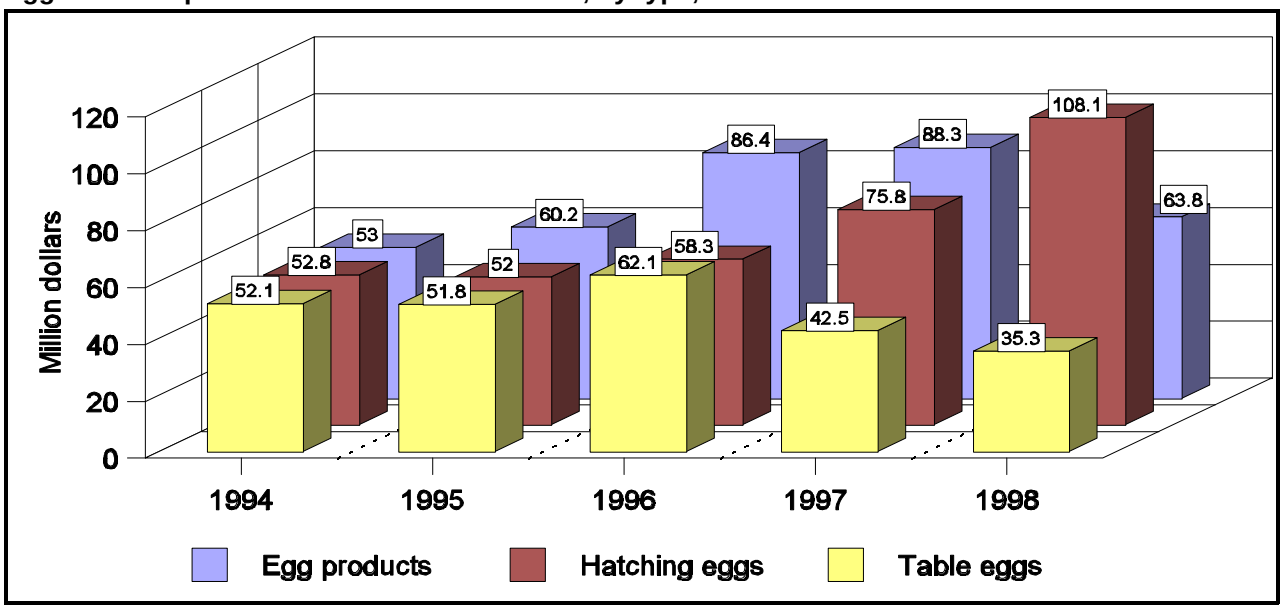
U.S. exports of hatching eggs reached $108.1 million in 1998, more than double the 1994 level of $52.8 million (table A-26). Most of this increase occurred in 1998, with sharp increases in exports to North American Free Trade Agreement (NAFTA) partners. In contrast, exports of table eggs fell by one-third between 1994 and 1998, with most of the decline coming between 1996 and 1998 (table A-27),largely because of a drop in exports to

[89] USDA, FSIS, "Focus on: Egg Products," found at Internet address http://www.fsis.usda.gov/oa/pubs/ eggpoduct.htm, retreived July 27, 1999.

[90] Statement of Margaret Glavin, Associate Administrator, FSIS before the Senate Committee on Governmental Affairs Subcommittee on Oversight of Government Management, Restructuring, and the District of Columbia, July 1, 1999.

Hong Kong. U.S. exports of egg products increased from $53 million in 1994 to $88 million in 1997 before falling to $64 million in 1998. In recent years, close to one-half of the exports have consisted of shipments of frozen and dried egg yolks and egg albumin to Japan (table A-28). Other exports include frozen egg yolk and egg albumin to Canada and dried eggs to Mexico.

Figure 7
Eggs: U.S. exports of domestic merchandise, by type, 1994-98



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

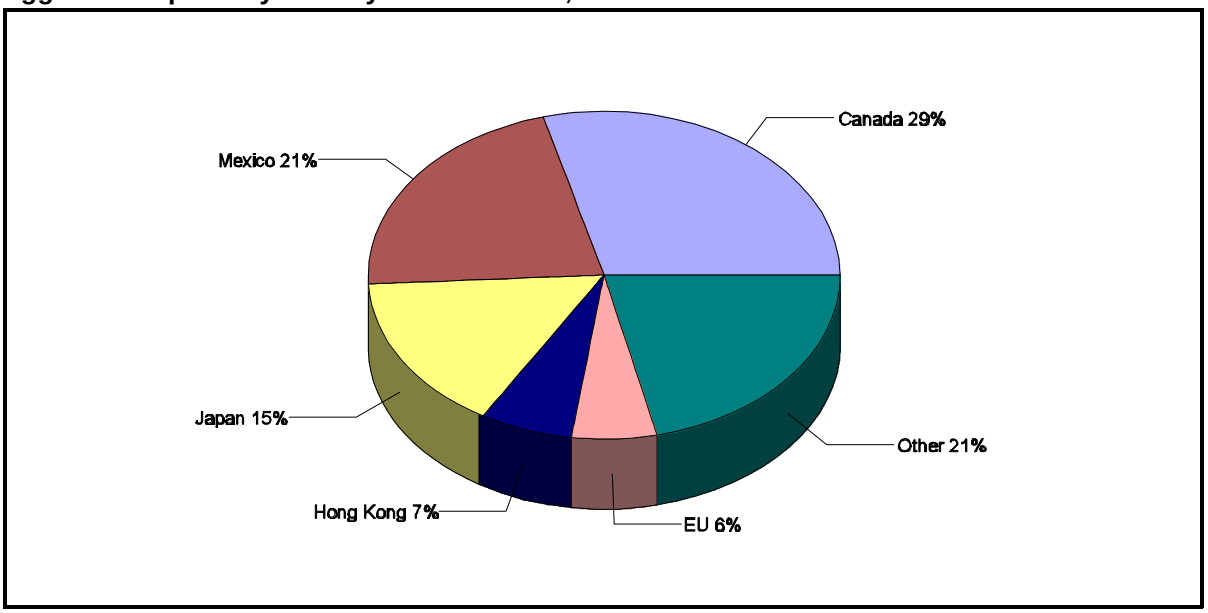
Principal export markets

The principal export markets for U.S. eggs and egg products are shown in figure 8. Canada and Mexico, together, accounted for one-half U.S. exports in 1998, followed by Japan, Hong Kong, and the EU. These five markets made up just under 80 percent of all U.S. egg exports.

Canada

Canada is the most important market for U.S. eggs. In 1998, U.S. exports to Canada were valued at $61 million, of which $39 million were exports of hatching eggs, with the remainder split fairly evenly between shell eggs (excluding hatching eggs) and egg products. Canada accounted for 29 percent of all egg exports, including 36 percent of total exports of hatching eggs, 32 percent of shell egg exports, and 16 percent of egg product exports. Virtually all Canadian imports of shell eggs and egg products are supplied by the United States.

Figure 8
Egg: U.S. exports by country of destination, 1998



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

The most significant trend in U.S./Canadian egg trade during 1994-98 was the increase in U.S. exports of hatching eggs from 10.9 million dozen in 1994 to 17.5 million dozen in 1998. This rise was in response to higher Canadian chicken and table egg production, which led to an increase in import demand for U.S. broiler hatching eggs and chicks.[91] Canadian imports of U.S. broiler hatching eggs and chicks are strictly controlled through tariff-rate quota (TRQ) allocations specified under NAFTA.[92] In recent years, Canadian producers have preferred to import lower valued broiler hatching eggs as opposed to live chicks, and have asked for additional import quotas for broiler hatching eggs while chick allocations have gone unfilled.[93] U.S. market access under NAFTA is discussed in more detail in the "Foreign Trade Measures" section of this Summary.

Mexico

In 1998, Mexican egg imports from the United States amounted to $44 million, making it the second largest market for U.S. egg exports (21 percent). Of the $44 million, hatching eggs accounted for $27 million, egg products for $11 million, and table eggs for $6 million (see tables A-25 through A-28). The most significant trend during 1994-98 was the sharp rise in exports of hatching eggs which grew from 1.8 million dozen ($2.3 million) in 1995 to 15.7 million dozen ($27 million) in 1998 (table A-26). In fact, hatching eggs, which are

[91] USDA, FAS, *Poultry. Annual Report*, Ottawa, GAIN Report CA8045, Sept. 8, 1998, p. 20.
[92] USDA, FAS, *Poultry. Annual Report*, Ottawa, AGR CA8005, Jan. 27, 1998, p. 8.
[93] Ibid., p. 9. NAFTA recognizes a supplementary import system which allows additional imports when Canadian supplies fail to meet domestic demand.

mainly imported by local egg producers, filled about 80 percent of the total 1998 TRQ for shell eggs.[94] The trend toward importing fertilized eggs stems from Government concerns over AI which led to regulations limiting the transportation of eggs between states.[95].In addition, according to industry sources, Mexican imports of U.S. hatching eggs were higher in 1998 owing to outbreaks of Avian Leucosis in some parts of the country.[96]

Close to 95 percent of Mexican egg imports comes from the United States. Other suppliers include Guatemala and Chile.[97] Mexican imports of table eggs were both small and stable during 1994-98, largely because of Mexico's TRQ regime for eggs, as well as relatively high U.S. prices compared with those in Mexico.[98] However, industry sources indicate that sales of U.S. table eggs have grown in cities in the north, far from the major producing regions in the country's south and center. Industry sources also report that imports of U.S. processed egg products (liquid, frozen, and dried products) by the Mexican bakery industry and other food processors have strong growth potential if effective promotional campaigns can be put in place.[99] Currently, processed egg products account for only about 5 percent of Mexico's total egg production.[100]

Japan

According to industry sources, Japanese egg product imports include liquid and frozen eggs and egg yolks, as well as dry egg products (egg yolk, albumen, and whole egg powder) used by confection bakeries, and dessert, ham, and sausage producers.[101] Roughly 70 percent of Japanese egg imports consisted of powdered albumin in 1998.[102] U.S. exports of eggs to Japan amounted to $32 million in 1998, almost all of which were egg products. Japan is the third largest market for U.S. egg exports with a share of about 15 percent, but it is the largest market for U.S. exports of egg products, accounting for over 50 percent in recent years. The export trend during 1994-98 includes growth from $32 million in 1994 to $49 million in 1996. This increase was not based on increased volumes, but rather because of stronger demand for higher valued further processed egg products by the Japanese bakery and confection industries.[103] U.S. exports to Japan fell in 1997 to $44 million and fell again in 1998 to only $32 million. The drop in 1998 was attributed to a salmonella scare in early 1998 which reduced table egg consumption and resulted in abundant supplies of inexpensive domestic eggs, combined with poor economic growth that weakened demand from the confectionary and

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[94] USDA, FAS, *Poultry: Mexico's Poultry Industry Reduces Growth Expectations for 1999*, Mexico City, Gain Report MX9013, Jan. 29, 1999, p. 24.

[95] USDA, FAS, *Poultry: Mexico's Poultry Meat Production Expected to Increase for 1999*, Mexico City, Gain Report MX8088, Aug. 14, 1999, p. 16.

[96] USDA, FAS, *Poultry: Mexico's Poultry Industry Reduces Growth Expectations for 1999*, Mexico City, Gain Report MX9013, Jan. 29, 1999, p. 24.

[97] "Export Potential for Europe and Mexico," *Egg Industry*, Oct. 1998, p. 8.

[98] Ibid.

[99] Ibid.

[100] Ibid.

[101] USDA, FAS, *Poultry. Annual Report*, Tokyo, GAIN Report JA9007, Feb. 5, 1999, p. 7.

[102] Ibid., p. 13.

[103] USDA, FAS, *Livestock and Poultry: World Markets and Trade*. *Egg and Egg Products*, Mar. 1997, p. 2.

bakery industries.[104] Another factor behind the drop in U.S. exports during 1997-98 was the appreciation of the dollar against the yen which reduced the competitiveness of U.S. products vis-à-vis the EU.[105] The largest supplier (based on the 1997 trade value) of eggs and egg products to Japan is the United States, followed closely by the EU (mainly the Netherlands), which benefits from significant government export assistance.[106] The United States and EU are estimated to have supplied about three-quarters of total Japanese egg import demand in during 1994-1998. Other suppliers include Canada and Brazil.[107]

Hong Kong

U.S. exports of eggs to Hong Kong amounted to $14 million in 1998, almost all of which (93 percent) were shell eggs (other than hatching eggs). Hong Kong is the fourth-largest market for U.S. egg exports overall, with a share of about 7 percent (table A-25), but it is the leading market for shell egg exports (38 percent) (table A-27). Consumers in Hong Kong have a preference for brown eggs, and total Hong Kong egg imports are made up of about 75 percent brown eggs and 25 percent white.[108] The major U.S. competitors in the Hong Kong market are China (Hong Kong's largest supplier of table eggs) and the EU (mainly the Netherlands and Germany).[109]

As in the case of Japan, U.S. egg exports to Hong Kong increased during 1994-96, reaching $34 million in 1996, but dropped in 1997 and again in 1998. Thus between 1996 and 1998, exports fell by more than one-half. The decline in 1998 was the result of an "avian-flu" outbreak in late 1997 that led to lower egg consumption and imports.[110] Imports also fell following the economic downturn during 1997 and 1998,[111] and the United States faced strong international competition from high-quality, competitively priced eggs from China and the EU.[112]

In 1997, Hong Kong's imports from China increased about 40 percent, and China replaced the United States as Hong Kong's largest egg supplier.[113] This followed China's removal of an export quota on eggs to Hong Kong in late 1996 and improvements in the quality and packaging of Chinese eggs in recent years.[114] Several new importers entered the Hong Kong market in 1997, driving down prices of Chinese eggs and taking further market share away

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[104] USDA, FAS, *Livestock and Poultry: World Markets and Trade*. *Egg and Egg Products*, Oct. 1998, p. 1.

[105] USDA, FAS, *Livestock and Poultry: World Markets and Trade*. *Egg and Egg Products*, Mar. 1998, p. 2; "Asian growth to slow down," *Poultry International*, Mar. 1998, p. 14-15.

[106] USDA, FAS, Global Agricultural Trade System using data from the United States Statistical Office.

[107] USDA, FAS, *Poultry. Annual Report*, Tokyo, GAIN Report JA9007, Feb. 5, 1999, p. 15.

[108] "The Outlook for Exports," *Egg Industry*, June 1997, p. 8.

[109] USDA, FAS, *Poultry Trade Statistics Update*, Hong Kong, GAIN Report HK9018, Mar. 17, 1999, p. 8.

[110] USDA, FAS, *Poultry: Annual Report*, Hong Kong, GAIN Report HK8083, Aug. 13, 1998, p. 25.

[111] "Asian growth to slow down," *Poultry International*, Mar. 1998, pp. 14-15.

[112] USDA, FAS, *Poultry Trade Statistics Update*, Hong Kong, GAIN Report HK8083, Aug. 13, 1999, p. 8.

[113] Ibid., p. 26.

[114] Ibid.

from the United States. Dutch and German egg imports have also displaced U.S. product, reportedly benefitting from export subsidies of about $130 per ton.[115]

EU

The EU is mainly an egg surplus region, and its imports are fairly limited. U.S. exports to the EU are limited by TRQs and high over-quota tariffs. In 1998, EU egg imports from the United States amounted to $12 million, making it the fifth-largest market for U.S. egg exports (6 percent) (table A-18). Of this figure, hatching eggs accounted for $8 million, while egg products accounted for the remaining $4 million. In both 1996 and 1997, EU imports of U.S. table eggs were valued at about $3 million. These imports consisted largely of breaking eggs for the Dutch egg product industry, which imports eggs then re-exports egg products to third countries.[116] In 1998, U.S. imports to the EU were negligible because of domestic oversupply and low prices in the EU market.[117]

Other markets

Prior to 1996, the Middle East Gulf States (Kuwait, Qatar, UAE, Yemen, Oman, and Bahrain) were major importers of U.S. shell eggs (other than hatching eggs). In 1995, exports to the region amounted to $11 million, with the UAE accounting for $7 million (making it the fourth single country buyer of U.S. shell eggs, see table A-27). Sales to the region dropped in 1996 and continued to decline to less than $2 million in 1997 and 1998, primarily because of competition from China and India (which enjoy preferential treatment under the WTO), as well as the cessation of U.S. EEP subsidies on eggs.[118] Other important markets for U.S. hatching egg exports are in the Caribbean and Central America. Exports to Jamaica were almost $6 million in 1998 (the third-largest market for hatching eggs in 1998), while exports to Costa Rica, Trinidad and Tobago, and Nicaragua all exceeded $3 million (table A-26).

U.S. exporters

U.S. exporters of egg and egg products are generally primary producers. Hatching egg exporters include multinational poultry breeding firms shipping product to overseas affiliates to improve the breeder stock or to emerging poultry meat and egg operations for parent breeder stock, growout, or laying stock. Shell egg exporters include major producer-packers, which often consolidate export orders through the USAPEEC. Egg product exporters include major U.S. producers, which ship primarily to food processors in major global markets, such as Japan, EU, and Mexico.

Foreign Trade Measures

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[115] Ibid., p. 27.

[116] USDA, FAS, *Livestock and Poultry: World Markets and Trade*. *Egg and Egg Products*, Mar. 1997, p. 2.

[117] USDA, FAS, *Poultry: Semi-Annual Report*, The Hague, GAIN Report HL9007, Feb. 1, 1999.

[118] "The outlook for exports," *Egg Industry*, June 1997, p. 8.

Tariff measures

Canada

Since the early 1970s, the Canadian egg industry has operated under a system of supply management, under which the supply of eggs available on the domestic market is controlled by setting quotas on domestic production and imports.[119] Domestic supply levels are set so that producers receive market prices sufficiently high to cover their costs of production plus a reasonable return on investment, while consumers get consistent supplies at stable prices.[120] In order to match supply with demand, imports are controlled through a system of TRQs, introduced in 1995 with the signing of the URAA.[121] Import access quantities under the TRQs for the United States were established both under the WTO and under the Canada-U.S. Free Trade Agreement (CFTA).[122] Two sets of TRQs were established—shell eggs and egg products, and broiler hatching eggs and chicks. Where the quantitative access commitments under the WTO and the CFTA result in two different levels, the Canadian Minister of Agriculture has generally set the import access quantity at the higher of the two levels.[123]

Under the CFTA, import access for eggs and egg products is set at 2.988 percent of the previous year's production (composed of 1.647 percent for shell eggs, 0.714 percent for frozen, liquid, and further processed eggs, and 0.627 percent for powdered eggs), while under the WTO a quota of 12.822 million dozen was set for 1995, increasing to 21.37 million dozen in year 2000 (table A-29). Although U.S. product enters at a tariff rate of "Free" on in-quota imports, it receives no special treatment on over-quota imports, which are subject to the Normal Trade Relations (TRN) rate of duty (table A-30). Over-quota tariffs are high and generally prohibitive. For example, the applied over-quota rate on hatching eggs was 252 percent ad valorem in 1998, while the ad valorem equivalent tariff rate on dried eggs was about 100 percent (table A-30). Under NAFTA, U.S. access to the Canadian import market for broiler hatching eggs and chicks is split into separate access commitments of 17.4 percent of Canadian production of broiler hatching eggs and 3.7 percent of Canadian production of broiler chicks (expressed on an egg equivalent basis) for a total of 21.1 percent of anticipated production (table A-29). Under the URAA, the quota is set at a constant 7.949 million eggs each year during the 1995-2000 implementation period.

Mexico

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[119] Agriculture and Agri-Food Canada, Market and Industry Services Branch, *Snapshot of the Canadian egg industry*, Jan. 1999, p. 14, found at Internet address *http://www.agr.ca/misb/aisd/poultry/eggsnap.pdf,* retrieved Aug. 9, 1999.

[120] Agriculture and Agri-Food Canada, *Factsheet: All About Canada's Egg Industry*, found at Internet address *http://www.agr.ca/cb/factsheets/egge.html,* retrieved Aug. 9, 1999, p. 2.

[121] Agriculture and Agri-Food Canada, Market and Industry Services Branch, *Snapshot of the Canadian egg industry*, Jan. 1999, p. 18, found at Internet address http://www.agr.ca/misb/aisd/poultry/eggsnap.pdf, retrieved Aug. 9, 1999.

[122] For further information, see Department of Foreign Affairs and International Trade, *Levels of Tariff Rate Quotas For Agricultural Products*, Serial No. 509, May 15, 1995, found at Internet address http://www.dfait -maeci.gc.ca/~eicb/notices/SER509-e.htm, retrieved Aug. 9, 1999.

[123] Ibid.

Upon entry into force of the NAFTA on January 1, 1994, the U.S. tariff of 3.5 cents per dozen on table and hatching egg imports from Mexico was eliminated.[124] At the same time, Mexico converted its import licensing regime for table and hatching eggs imported from the United States to a transitional TRQ, which will be in effect for 10 years. Initially this quota was set at 6,500 metric tons of eggs (equivalent to about 9.6 million dozen), and it is being increased at a compound rate of 3-percent annually during the 10-year transition period (table A-29). Over-quota imports from the United States initially faced a 50-percent ad valorem tariff rate (table A-30); however, this rate is being reduced by 24 percent over the first 6 years of the agreement (1994-1999), and the remaining tariff will be phased out over the rest of the 10-year implementation period (2000-2004). For 1998, the over-quota tariff was 40 percent ad valorem. Tariff provisions covering egg trade between Mexico and Canada were excluded from the NAFTA.

Other markets

Japanese tariffs on eggs are reported in table A-30. There are no TRQs applied to imports of eggs, and for 1998 tariffs range from "Free" (egg albumin and hatching eggs) to 22.5 percent ad valorem (liquid, frozen, or dried whole eggs). These tariffs are being reduced according to schedules under the URAA. By the end of the implementation period, the highest tariff on Japanese egg imports will be 21.3 percent ad valorem. Imports of eggs by Hong Kong enter with a duty rate of "Free," as do all imports of agricultural commodities. The EU imposes TRQs on its imports of eggs, and tariffs for most products are high (table A-30). While tariffs on imports of hatching eggs are fairly low (42 Ecu/ton in 1998), tariffs in excess of 1,600 Ecu/ton are imposed on dried egg yolks and dried whole eggs. These rates are also being reduced under the URAA as indicated in table A-30.

Nontariff measures

In Mexico, egg producers are pushing the Ministry of Agriculture to adopt new animal health and food safety regulations that would have the effect of slowing down imports of U.S. egg and poultry products.[125] For example, changes in Mexican import regulations are being proposed in a campaign against AI (NOM-044), while changes in standards governing safety of eggs and egg products are also being proposed (NOM-159).[126] Concern has arisen among U.S. poultry and egg exporters about changes in the NOM-044 requirements, because they could mean that the United States could be classified (by the Mexican Department of Agriculture) as an AI-infected country.[127] If so, U.S. exporters of fresh table eggs and raw poultry to Mexico would need certification that the products exported were produced on farms free of AI, and that farm-level tests were undertaken within 15 days of processing.[128] Currently, APHIS does not issue such certificates.[129] U.S. exporters are also concerned with

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[124] USDA, FAS, *NAFTA Agricultural Fact Sheet: Eggs*, found at Internet address http://www.fas.usda.gov/itp/ policy/nafta/eggs.html, retrieved June 20, 1999.

[125] USDA, FAS, *Poultry. Annual Report*, Mexico City, AGR MX8011, Feb. 2, 1998, p. 9.

[126] USDA, FAS, *Poultry. Mexico's Poultry Industry Reduced Growth Expectations for 1999*, Mexico City, GAIN No. MX9013, Jan. 29, 1999, p. 4.

[127] USDA, FAS, *Poultry. Annual Report*, Mexico City, AGR MX8011, Feb. 2, 1998, p. 9.

[128] Ibid.

[129] Ibid.

the proposal NOM-159, which would mandate local distributors to keep refrigerated all shell eggs and egg products that are marketed in bulk or prepackaged.[130] NOM-159 also mandates that the expiration date be included on all shell eggs and egg products, with the exception of dehydrated and frozen products. Since continuous cold storage in Mexican food transportation and distribution channels does not exist,[131] these regulations could potentially stop all U.S. table egg imports into Mexico.[132] Another concern of some industry sources is the Mexican system of TRQ administration for eggs.[133] Currently TRQs are allocated by auction and have been awarded to producers that do not have an incentive to import.[134] According to industry sources, this is one factor contributing to the decrease in imports of U.S. fresh table eggs between 1996 and 1998.[135] Mexico also has highly restrictive requirements for pasteurization that block certain imports from the United States.[136]

Imports of eggs into the EU are subject to various health and sanitary regulations and restrictions, which also apply to domestic egg production in each country. Industry representatives claim that EU regulations on imports of processed egg products have tolerance levels for excess residues that are overly restrictive, and that higher tolerances would still provide adequate food safety.[137] However, the relatively high EU import tariffs are considered to pose a greater barrier to U.S. egg exports than nontariff measures.

Other technical trade barriers include the shelf-life and labeling requirements imposed by the UAE. The maximum shelf-life of egg imports into the UAE is set at only 3 months. Industry representatives claim this time period is too short to pack, ship, and market products in the country. Also, the UAE requires all imports of eggs to be stamped as "imported," and labeled with the date laid and company name.[138] Singapore also has stringent registration requirements that are cumbersome and costly to U.S. egg exporters.[139]

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[130] Ibid.

[131] USDA, FAS, *Livestock and Poultry: World Markets and Trade*. *Egg and Egg Products*, Mar. 1999, p. 2.

[132] USDA, FAS, *Poultry. Voluntary Report*, Mexico City, GAIN Report MX8088, Aug. 14, 1998, p. 17.

[133] Comments of Jim Sumner, USAPEEC, reported in "U.S. egg exports continue to grow," *Egg Industry*, Apr. 1997, p. 14.

[134] USDA, FAS, *Poultry. Annual Report*, Mexico City, AGR MX7075, July 17, 1997, p. 8.

[135] Ibid.

[136] USITC staff telephone conversation with Jim Sumner, USAPEEC, Aug. 16, 1999.

[137] Ibid.

[138] Ibid.

[139] Ibid.

FOREIGN INDUSTRY PROFILE

Overview of World Market

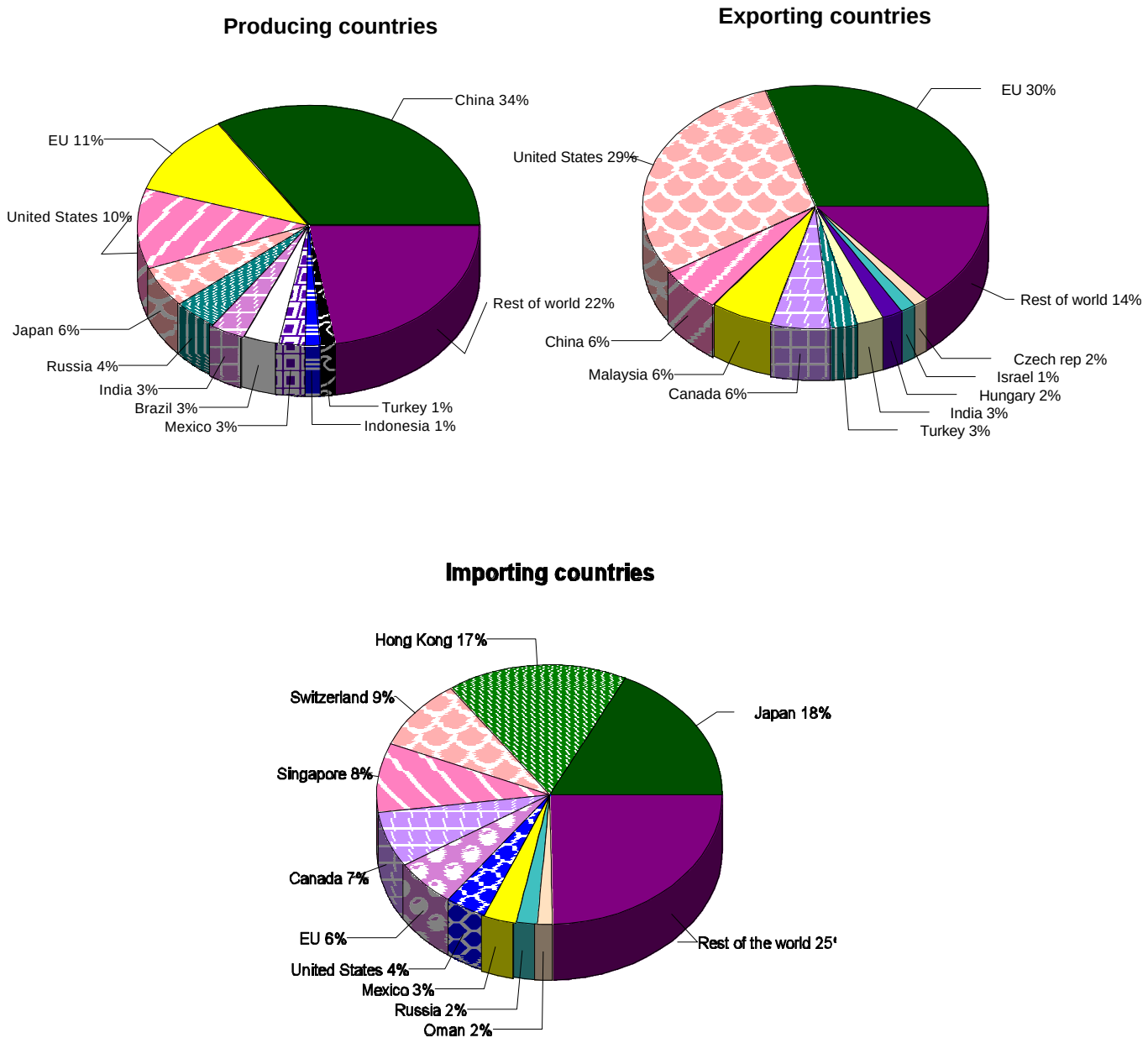
Eggs are produced and consumed in almost every country in the world. Production is concentrated in a few major countries, with 55 percent of egg production coming from the top three and 78 percent from the top ten (table A-31 and figure 9). China is by far the world's largest egg-producing country, with a share of about 34 percent. The EU is the world's second-leading producer, closely followed by the United States, with shares of 11 percent and 10 percent, respectively. Japan (6 percent) and Russia (4 percent) are the world's fourth- and fifth-leading producers. Other major producing countries include India, Brazil, Mexico, Indonesia, and Turkey. Egg consumption is also highly concentrated. China, the EU, the United States, Japan, and Russia are the top five largest egg-consuming countries.

Since major producing countries are generally the major consuming countries, international trade in eggs and egg products is small (between 1 and 2 percent of total production).[140] World egg markets are dominated by a few participants (table A-31 and figure 9). Two economies—the EU and the United States—accounted for almost 60 percent of world exports during 1994-98, each supplying about 30 percent. Other major exporters are China, Malaysia, and Canada. India and Turkey have become increasingly active in exporting over the five-year review period. World imports are also concentrated among a few major buying countries. Japan and Hong Kong account for 18 percent and 17 percent of world imports, respectively, while other important markets are Switzerland and Singapore. The United States is the world's seventh-largest import market, with a share of less than 4 percent.

The world egg market is characterized by a small number of major trade flows (table A-33). The major suppliers of the Japanese market are the United States and the EU, while the majority of Hong Kong imports are supplied by the United States and China. Generally, eggs are traded between countries that are geographically close to one another. For instance, most of the exports from China and Malaysia are shipped to markets in Asia, while the major markets for the United States are Canada and Mexico, and Turkey's exports are concentrated on Central Asia and Eastern Europe. Close to 25 percent of EU egg exports are sent to Switzerland.

[140] WATT Poultry Statistical Yearbook, 1999, p. 32

Figure 9
Eggs: Top 10 world producing, exporting, and importing countries, 1994-98 average



Note.—Production shares based on quantity, trade shares based on value.

Source: Production shares from *WATT Poultry Statistical Yearbook, 1999*, pp. 12-18; Trade shares from United Nations, Trade Statistics.

Country Profiles

The top 10 egg-producing countries in 1998 are listed in table A-31, which shows production and growth during 1994-1998. Large differences between individual country production growth in recent years are indicative of major changes in the pattern of egg production worldwide. For example, since 1994, Chinese egg production increased at a rapid rate, while production declined significantly in Russia (almost 6 percent per annum). Production in the EU and Japan remained fairly constant over the period.

A brief overview of the major egg-producing countries is presented below, with emphasis on the relative size of each country's industry, involvement in the export market, and growth relative to the United States. Also discussed are factors affecting competitiveness in international markets, such as production costs, industry structure, production and processing technology, and the nature of government intervention.

China

China is the world's largest egg-producing country, annually accounting for about one-third of global output during 1994-98 (table A-31 and figure 9). It produces roughly three times as many eggs as the EU, the second-leading producer. Chinese egg production has been among the most dynamic in the world, with output increasing from 12.1 million tons in 1994 to 17.8 million tons in 1998, an overall increase of 47 percent and an annual average growth rate of over 10 percent (global production increased at an average annual rate of less than 4 percent). As a result, China's share of world output increased from 29 percent in 1994 to 37 percent in 1998.[141] China is also the world's largest egg-consuming country, with about 98 percent of production consumed domestically. The large Chinese population and rapid growth in real per capita income in recent years have led to strong demand from the domestic market. Between 1994 and 1998, for example, per capita annual consumption rose from 233 eggs to 275 eggs. This figure is expected to reach 285 eggs in 1999,[142] far above the world average of 146 eggs per year.[143] According to the USDA, about 90 percent of the chicken eggs consumed are in the form of fresh shell eggs, with the remaining 10 percent consumed in processed form. Conversely, only 10 percent of duck eggs are consumed fresh, with 90 percent used for salty and preserved eggs.[144]

China is the world's third-largest egg exporting country, with a 6-percent share of total world exports during 1994-97 (table A-31). China's exports grew by almost 13 percent annually between 1994 and 1997, and its share of the world market will likely increase in the future. Major markets for Chinese egg exports are Hong Kong, Macau, and Japan; therefore, China

[141] *WATT Poultry Statistical Yearbook, 1999*, pp. 12 and 14.

[142] "China—The Growing Global Force," *Poultry International*, Mar. 1999, p. 26.

[143] USDA, FAS, *Poultry Annual Report*, Shanghai, GAIN Report CH9821, Aug. 8 1999, p. 20.

[144] Ibid.

is an important competitor of the United States.[145] China also exports shell eggs and some processed egg products to the United States (see tables A-18 and A-19) However, because China is fully self-sufficient in egg consumption, the potential for the United States to export eggs to this market is extremely limited.[146]

Roughly three-quarters of egg production is from small "backyard" producers, while the remaining one-quarter is from the commercial sector (made up of state and large private farms).[147] Owing to an oversupply, eggs prices fell significantly in the late 1990s, and as a result, the commercial sector suffered financial losses.[148] However, backyard producers faired better because they typically carry less debt. Production is also becoming more concentrated in the central areas of the country (such as Henan, Hebei, Shandong, and Jiangsu), where the price of feed is lower than in other parts of the country.[149] This has improved the competitiveness of the sector. The commercial laying flock is very concentrated; it is estimated that there are close to 2,000 farms with flocks in excess of 10,000 birds, and 100 farms with more than 100,000.[150] China's largest egg farm has some 800,000 birds. Other factors affecting competitiveness are the replacement of obsolete egg production and processing plants and the introduction of new technology.[151]

The Chinese egg industry also benefits from government intervention. For instance, according to Chinese Government officials, the Government plans to ensure the food security of urban residents by providing subsidies for eggs that will keep consumer prices low.[152] Foreign investment in China's egg processing facilities is also being encouraged by the Government in an effort to create a more internationally competitive sector.[153] The domestic industry is also protected from imports by high tariff barriers. For example, the 1996 NTR tariff rate on fresh shell eggs was 55 percent ad valorem, while the tariff on processed shell eggs and all egg products (except egg albumin) was 65 percent. The tariff on egg albumin was 20 percent.[154]

European Union-15

Members of the EU produced about 5.2 million tons in 1998, making it the second-largest producing economy, with a world production share of about 12 percent (table A-31). Between 1994 and 1998 production declined slightly, dropping on average about one-half of one

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[145] USDA, FAS, *Poultry Annual Report*, Shanghai, GAIN Report CH9802, Jan. 29 1999, p. 16.

[146] Only 70 tons of processed eggs were exported from the United States to China in 1998.

[147] "China: Characteristics of the egg sector," *Poultry International*, Mar. 1999, p. 13.

[148] USDA, FAS, *Poultry Annual Report*, Shanghai, GAIN Report CH9821, Aug. 8 1999, p. 20.

[149] "China: Characteristics of the egg sector," *Poultry International*, Mar. 1999, p. 13.

[150] "China—The leading poultrymeat consumer?, *Poultry International*, Mar. 1998, p. 22.

[151] USDA, FAS, *Poultry Annual Report*, Shanghai, GAIN Report CH9821, Aug. 8 1999, p. 20.

[152] USDA, FAS, *Poultry Annual Report*, Shanghai, GAIN Report CH8818, Aug. 14 1998, p. 15.

[153] USDA, FAS, *Poultry Annual Report*, Shanghai, GAIN Report CH9802, Jan. 29 1999, p. 14.

[154] Chinese tariffs are available on the APEC website at Internet address *http://www.apectariff.org/*.

percent per annum. In 1998, major EU egg producers included France (18 percent of total EU production), Germany (16 percent), Italy (14 percent), the United Kingdom (12 percent), the Netherlands (11 percent), and Spain (11 percent).[155] With a population of more than 375 million, the EU is the second-largest consuming economy of eggs worldwide. However, per capita consumption remained flat during 1994-98 at about 215 eggs per year. The major EU egg trend in recent years has been the rise in consumption of eggs in processed form (mainly in the food ingredient and baking industries) and the fall in consumption of table eggs[156]—a trend similar to one experienced in the United States during the late 1980s and early 1990s.[157]

The EU is the world's largest exporting economy, with a world export share averaging 30 percent during 1994-97. These exports exclude intra-EU trade, which is estimated to be about four times as large as inter-EU trade.[158] EU exports grew at only 4 percent annually during 1994-97, the slowest rate of all top 10 exporting countries (table A-32). Roughly one-quarter of EU exports are sent to Switzerland, while another quarter is exported to Japan and Hong Kong, in direct competition with U.S. product (table A-33). In 1998, about 70 percent of EU exports were supplied by the Netherlands, followed by France (12 percent), Italy (7 percent), and Germany (4 percent).

EU exports of eggs are provided assistance through export refunds. However, as a result of the URAA, spending on assistance is being reduced by 36 percent, and the volume of assisted exports by 21 percent, with 1986-90 as the base period.[159] The volume of exports that qualify for assistance is being reducing from 107,000 tons shell egg equivalent (hatching eggs, table eggs, and egg products, except albumen) in 1995 to 83,000 tons in 2000.[160] Based on export subsidy commitments specified in the URAA, the EU will account for about 88 percent of total WTO egg export assistance allowances in 2000, compared with a U.S. share of only about 5 percent. The Netherlands (accounting for close to 80 percent of EU egg exports) is the major beneficiary of assistance and, according to the USDA, has been particularly aggressive in its use of export restitutions on eggs destined for Middle Eastern markets (especially the UAE) and Hong Kong (the restitution was 14 cents per dozen in early 1998).[161] However, as export subsidy disciplines weaken the competitiveness of EU product in world egg markets, EU egg production is increasingly being routed to egg deficit member states within the EU.[162]

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[155] *WATT Poultry Statistical Yearbook, 1999*, p. 16.

[156] "Egg products in Europe," *Egg Industry*, July 1997, p. 17.

[157] For more information on U.S. consumption trends in the late 1980s and early 1990s, see U.S. International Trade Commission, *Industry and Trade Summary: Eggs*, USITC publication 2919, Oct. 1995, pp.18-20.

[158] According to United Nations trade statistics, total EU exports were valued at $992 million in 1997, of which $792 million were between EU countries and $200 million were with non-EU countries.

[159] "Export subsidies," Background paper by the Secretariat, World Trade Organization, AIE/S3, Nov. 1997.

[160] CAP Monitor, Agra Europe, p. 9-2

[161] USDA, FAS, *Livestock and Poultry: World Markets and Trade*. *Egg and Egg Products*, Oct. 1998, p. 2.

[162] USDA, FAS, *Livestock and Poultry: World Markets and Trade*. *Egg and Egg Products*, Mar. 1998, p. 3.

EU imports of eggs averaged $38 million during 1994-97, representing 6 percent of global imports (table A-32). Major suppliers include the United States, Canada, and Israel (table A-33). Major products imported from the United States are shell eggs for breakers and egg powder for use in the food processing industry.[163] Nearly all EU imports of eggs occur under limited access commitments, either TRQs established under the URAA (table A-30), or preferential access granted under association agreements concluded with Poland, Hungary, the Czech Republic, Slovakia, and Bulgaria, which involve an 80-percent reduction in customs duties on certain egg products.[164]

Apart from border protection and export refunds, eggs qualify for no specific support on the internal EU market.[165] However, several future policy changes could significantly affect the EU egg industry and its role as a major competitor of the United States in international markets. For example, EU egg producers will be affected by Agenda 2000, which involves reforming the EU's Common Agricultural Policy.[166] If efforts to improve international competitiveness in the grains sector are successful, then the EU egg sector will become increasingly competitive in world markets. Another development is the accession of the first five East European countries (Poland, Hungary, the Czech Republic, Estonia, and Slovenia), which have been declared eligible for membership by the EU.[167] While currently small producers, they have the potential to expand considerably in the future.[168]

Animal welfare issues are very important in the EU, especially in the smaller countries, such as the Netherlands, Denmark, and Sweden.[169] Pressure from animal rights activists has resulted in a trend toward larger, more bird-friendly cages,[170] and it is likely that regulations will be tightened further in the future.[171] EU regulations require that cages be no less than 450 square centimeters, although several countries go beyond this standard and require the use of larger cages.[172] In 1996, EU regulations allowed producers to label their eggs as "cage eggs," indicating that the minimum cage space requirement was met.[173] According to the USDA, environmental and animal welfare regulations may threaten the long-term viability of EU egg exports in global markets.[174] As a result, the Europeans are likely to request that animal

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[163] "Shell Eggs and Egg Products in European markets: Trends and Opportunities," *Egg Industry*, July 1997, p. 14.

[164] European Commission, *The Agricultural Situation in the European Union. 1995 Report*, Brussels, 1996, p. 110.

[165] European Commission, *The Agricultural Situation in the European Union. 1995 Report*, Brussels, 1996, p. 108-109.

[166] The Agenda 2000 proposal deepens and extends the 1992 Common Agricultural Policy (CAP) reform through a further shift from price support to direct payments, and develops a coherent rural policy to accompany this process. For further information, see *"Agenda 2000 - Agriculture"*, found at Internet address http://europa.eu.int/comm/agenda2000/ index.htm.

[167] USDA, FAS, *Europe. Situation and Outlook*, Jan. 1997.

[168] Ibid.

[169] "Shell Eggs and Egg Products in Europe," *Poultry International*, Sept. 1997, p. 48.

[170] Ibid.

[171] "EU Commissioner's views on trade and bird welfare," *Poultry International*, Jan. 1997, p. 18.

[172] "Welfare in Europe," *Egg Industry*, July 1997, p. 14.

[173] Ibid.

[174] USDA, FAS, *Livestock and Poultry: World Markets and Trade. Eggs and Egg Products*, Oct. 1998, p. 3.

welfare standards be brought under WTO disciplines in the upcoming round of WTO negotiations.[175]

Japan

Japan ranks fourth among the world's leading egg-producing economies, with an annual average production of 2.6 million tons during 1994-98, representing about a 6-percent share of global production (table A-31). Production was almost constant during the period. This reflects a decrease in egg consumption across all sectors including retail, processing, and foodservice, and declining prices and returns to producers.[176] The decline in production has also been associated with competition from competitively priced imports.[177] Japanese producers are assisted by a price stabilization program that compensates them for income losses when prices fall below a predetermined level.[178] An early hen slaughter program is also in place to control output.[179] These programs are supported through check-off funds established by the national egg producers group.[180]

Japan is the leading importing country in the world, with an 18-percent share of world imports (table A-32). Imports rose by almost 5 percent annually during 1994-98, of which about 70 percent consisted of albumen powder used in the processed foods and baking industries. Imports of dry and liquid yolk are also used in the ice cream industry.[181] The United States is the major supplier of Japanese egg imports, in competition with EU. Other suppliers to the Japanese market are Canada, Brazil, and Thailand (table A-33).

Russia

Russia is the fifth-largest producer of eggs in the world, with output averaging 1.8 million tons during 1994-98, equivalent to about 4 percent of global output (table A-31). Until 1992, the Russian egg industry was part of the centrally planned economy, with decisions over production and sales, financing and material supplies, and prices determined by the Government.[182] Following privatization of the industry in 1992, production declined almost 6 percent annually during 1994-98 (table A-31). The main reason for the decline was insufficient cash flow and credit availability, which limited producers' ability to replace old equipment and invest in improved bird genetics.[183] In addition, poor financial conditions forced

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[175] Blandford, D. and L. Fulponi, "Consumer concerns and Public Policy for Agriculture," paper presented at the First European Congress on Agricultural and Food Ethics at Wageningen, The Netherlands, Mar. 4-6, 1999.

[176] USDA, FAS, *Poultry. Annual Report*, Tokyo, GAIN Report JA8070, Aug. 18, 1998, p. 5.

[177] "Decline in Japan's Broiler Industry Offset by Imports," *Poultry International*, Dec. 1997, p. 36.

[178] USDA, FAS, *Poultry. Annual Report*, Tokyo, GAIN Report JA8070, Aug. 18, 1998, p. 5.

[179] Ibid.

[180] Ibid.

[181] USDA, FAS, *Poultry. Annual Report*, Tokyo, GAIN Report JA9105, Aug. 24, 1998, p. 5.

[182] "Russia Needs a Few Years to Achieve Stability," *Poultry International*, Jan. 1997, p. 22.

[183] USDA, FAS, *Poultry. Semi-Annual Report*, Moscow, GAIN Report RU9009, Feb. 2, 1999, p. 2.

producers to purchase cheap low-quality feeds.[184] Poor management has also hampered industry growth following privatization.[185] Russia is not a major player in international egg markets, with almost all egg production consumed domestically. During 1994-98, Russian imports of eggs averaged just 2 percent of total world imports (table A-32), with major suppliers being the United States, the EU, and the Ukraine.[186] Most Russian imports from the United States consist of table eggs and egg products (table A-27).

Other

Other major world egg-producing countries are India, Mexico, and Brazil, each with a world market share of about 3 percent (table A-31). During 1994-98, India and Brazil experienced steady production growth, while output in Mexico stagnated (table A-31). Most of the eggs produced in these countries are consumed domestically. However, India's exports increased almost 200 percent during 1994-97 (table A-32), and by 1997 India was the world's seventh-largest exporting in the world. Mexico is a net importer of eggs, with imports growing 21 percent during 1994-97 (table A-32).

[184] Ibid., p. 24.

[185] USDA, FAS, *Poultry. Annual Report*, Moscow, GAIN Report RU8041, Aug. 18, 1998, p. 5.

[186] Ibid., p. 18.

APPENDIX A
STATISTICAL TABLES

Table A-1
Eggs[1]: U.S. production, beginning stocks, imports for consumption, exports of domestic merchandise, ending stocks, apparent U.S. consumption, ratio of imports to consumption, and ratio of exports to production, 1994-98

Year	U.S. production	Beginning stocks	U.S. imports	U.S. exports	Ending stocks	Apparent U.S. consumption	Ratio of imports to consumption	Ratio of exports to production
	Quantity *(million dozen)*						*Percentage*	
1994	6,177	10	8	274	15	5,907	(2)	4.4
1995	6,216	15	9	313	11	5,916	(2)	5.0
1996	6,378	11	12	388	9	6,004	(2)	6.1
1997	6,473	9	12	349	7	6,138	(2)	5.4
1998	6,659	7	12	325	8	6,345	(2)	4.9
	Value *(million dollars)*							
1994	4,719	7	30	158	11	4,588	0.7	3.3
1995	5,030	11	20	164	9	4,889	(2)	3.3
1996	6,002	10	24	207	8	5,822	(2)	3.4
1997	5,657	7	19	207	6	5,470	(2)	3.7
1998	5,367	6	14	207	6	5,172	(2)	3.9
	Unit value *(dollars per dozen)*							
1994	0.76	0.72	3.59	0.58	0.72	0.78	(3)	(3)
1995	0.81	0.76	2.27	0.52	0.76	0.83	(3)	(3)
1996	0.94	0.91	2.00	0.53	0.91	0.97	(3)	(3)
1997	0.87	0.84	1.56	0.59	0.84	0.89	(3)	(3)
1998	0.87	0.77	1.10	0.64	0.77	0.82	(3)	(3)

[1] Includes hatching eggs, table eggs, and egg products. Quantities converted to a shell egg equivalent basis.
[2] Less than 0.5 percent.
[3] Not applicable.

Note.—Apparent consumption and unit values may not add to values shown due to rounding.

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

Table A-2
Eggs: Industry concentration by sector, 1994-98

Item	1994	1995	1996	1997	1998
	Percentage of U.S. production				
Shell egg producers:					
Top 4 firms	21	31	31	24	22
Top 8 firms	31	30	32	34	31
Top 20 firms	46	46	49	51	48
Egg breakers:					
Top 4 firms	39	41	40	73	76
Top 8 firms	45	48	50	84	86
Top 20 firms	53	55	72	98	100

Source: *Egg Industry,* vol. 104, no. 1, Jan. 1999, pp. 4-6, and USDA, NASS *Layers and egg production*, *Annual Summary*, various issues.

Table A-3
Eggs: U.S. table egg and hatching egg production, by major State, 1994-98

Product/State	1994	1995	1996	1997	1998
	Million dozen				
Table eggs:[1]					
Ohio[2]	470	497	542	581	616
California[2]	550	537	547	555	551
Iowa[2]	317	360	418	461	497
Pennsylvania	451	455	454	476	484
Indiana	444	448	463	461	474
Texas[2]	322	278	332	349	355
Georgia	236	220	231	242	254
Minnesota	213	226	247	236	252
Nebraska	169	197	195	206	226
Arkansas	112	123	109	85	93
All other	1,987	2,027	1,976	1,926	1,935
Total	5,271	5,368	5,514	5,578	5,737
Hatching eggs:					
Arkansas	169	177	177	179	176
Georgia	143	144	151	163	173
North Carolina	120	126	125	128	127
Alabama	116	123	116	117	118
Mississippi	69	69	77	87	90
Virginia	35	38	31	35	36
Oklahoma	30	27	30	31	31
South Carolina	18	18	18	18	18
Pennsylvania	16	16	16	15	15
Indiana	10	10	9	10	12
All other	179	98	113	111	126
Total	906	847	864	895	922

[1] Includes eggs for processing.
[2] Data includes both table eggs and hatching eggs in order to avoid disclosure of individual operations.

Source: USDA, NASS, *Layers and Egg Production, Annual Summary*, various issues.

Table A-4
Table eggs: Estimated costs and returns, 1994-98

Cost/return	1994	1995	1996	1997	1998
			Cents per dozen		
Production costs:					
Feed	28.6	28.8	39.5	33.4	27.0
Total	46.8	47.0	57.7	51.6	45.2
Wholesale:					
Total cost	66.1	67.5	78.2	72.1	64.2
Price	75.1	76.5	91.5	83.8	78.8
Net returns	9.0	9.0	13.3	11.7	14.6

Source: USDA, ERS, *Livestock, Dairy, and Poultry Situation and Outlook,* various issues.

Table A-5
Eggs: Prices, by products and market levels, 1994-98

Item	1994	1995	1996	1997	1998
			Cents per dozen		
Shell eggs:					
Hatching eggs[1]	128.78	139.03	143.97	144.74	136.27
Table eggs:					
Farm:[2]					
All	60.93	65.21	76.31	69.72	64.70
Market (excluding hatching eggs)	49.27	53.56	65.71	57.68	53.20
Wholesale:					
New York[3]	67.00	73.00	88.17	81.21	75.80
12 city metro[4]	72.16	76.27	91.00	83.93	77.37
Retail[5]	86.28	92.45	110.63	105.83	103.74
Breaking eggs:					
Heavy nest run[6]	39.16	42.02	57.41	48.53	42.60
Checks and undergrades[7]	25.16	28.19	44.00	34.96	28.88
			Cents per pound		
Egg products:					
Liquid:[8]					
Whole	34.56	43.42	49.88	41.93	37.92
Whites	27.81	26.84	30.09	26.94	27.58
Yolk	48.31	51.81	83.07	76.82	63.90
Frozen:[9]					
Whole	52.45	54.60	68.59	62.30	57.24
Whites	44.56	43.45	50.32	47.58	45.97
Yolk	63.11	67.46	91.89	90.76	81.06
Dried:[10]					
Whole	176.00	176.00	231.00	208.00	185.00
Whites	295.00	283.00	316.00	295.00	297.00
Yolk	138.00	147.00	216.00	205.00	177.00

[1] Price received by farmers.
[2] U.S. average price received by farmers.
[3] Average prices of Grade A and U.S. Grade A cartoned white eggs to volume buyers, store door delivery, New York metropolitan area.
[4] Average prices of Grade A and U.S. Grade A cartoned white eggs to volume buyers, store door delivery, 12 major metropolitan areas.
[5] U.S. city average, Grade A large.
[6] Average prices paid for breaking stock, delivered plant, Central States (MN, SD, IA, NE, MO, KS, IL, MI, and WI).
[7] Average prices paid for breaking stock, delivered plant, Central States (MN, SD, IA, NE, MO, KS, IL, MI, and WI).
[8] Weighted average price paid for non-pasteurized liquid eggs, f.o.b. plant.
[9] Wholesale selling prices, Eastern region (CT, DE, FL, GA, MA, MD, ME, NC, NH, NJ, NY, PA, RI, SC, VA, VT, WV).
[10] Wholesale selling price.

Source: USDA, NASS, *Agricultural prices*, monthly reports, various issues; USDA, AMS, *Poultry Market Statistics, Annual Summary*, various years; USDA, ERS, *Livestock, Dairy, and Poultry*, monthly reports, various issues; Department of Commerce, Bureau of Labor Statistics, *Monthly Prices*, various issues.

Table A-6
Eggs: U.S. commitments on subsidized exports under the Uruguay Round Agreement, 1995/96-2000/01[1]

Item	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01
			1,000 dozen			
Annual quantity commitments	30,262	25,593	20,925	16,256	11,588	6,920
			Million dollars			
Annual budget outlays	7.6	6.4	5.2	4.0	2.8	1.6

[1] July 1-June 30.

Source: USDA, ERS, *Agricultural Export Programs. Background for 1995 Farm Legislation*, Agricultural Economic Report No. 716, June 1995, p. 29, table 3a.

Table A-7
Eggs: World consumption, less hatching eggs, by selected countries and country groups, 1994-98

Countries and groups	1994	1995	1996	1997	1998
			Million eggs		
North America:					
Canada	5,285	5,177	5,395	5,542	5,581
Mexico	25,940	25,743	26,102	28,261	29,923
United States	62,208	62,017	63,142	64,308	66,265
Subtotal	93,433	92,937	94,639	98,111	101,769
South America:					
Brazil	13,445	16,053	15,917	12,576	13,575
Subtotal	13,445	16,053	15,917	12,576	13,575
European Union:					
Belgium-Luxembourg	2,404	2,677	2,600	2,545	2,648
Denmark	1,328	1,378	1,420	1,420	1,388
France	14,853	15,380	15,037	14,898	14,767
Germany	17,951	18,418	18,591	18,650	18,655
Greece	2,430	2,465	2,485	2,492	2,510
Ireland	556	578	500	509	508
Italy	11,686	11,614	11,844	11,983	11,975
Netherlands	2,766	2,830	2,846	2,865	2,890
Portugal	1,675	1,709	1,636	1,618	1,539
Spain	9,089	9,319	7,842	8,395	8,303
United Kingdom	10,124	10,013	10,536	10,107	9,880
Subtotal	74,862	76,381	75,337	75,482	75,063
Eastern Europe:					
Poland	5,930	6,723	6,464	7,333	7,934
Romania	2,666	2,915	3,990	4,040	3,950
Subtotal	8,596	9,638	10,454	11,373	11,884
Former Soviet Union:					
Russia	34,800	31,370	29,300	29,650	32,710
Ukraine	10,145	9,310	8,469	7,701	7,847
Subtotal	44,945	40,680	37,769	37,351	40,557
Middle East:					
Turkey	7,263	7,376	7,580	8,038	8,552
Subtotal	7,263	7,376	7,580	8,038	8,552
Asia:					
China	274,970	296,584	306,328	333,112	355,993
Hong Kong	1,666	1,659	1,716	1,484	1,479
Japan	43,363	42,783	43,231	44,329	43,930
Korea	7,728	7,976	8,315	8,405	8,079
Taiwan	5,614	6,205	6,787	7,638	7,954
Subtotal	333,341	355,207	366,377	394,968	417,435
Total	575,885	598,272	608,073	637,899	668,835

Source: USDA, FAS post reports, official statistics, and interagency analysis. Reported in USDA, FAS, Livestock and Poultry: World Markets and Trade, Mar. 29, 1999, found at Internet address http://www.fas.usda.gov/dlp/circular/1999/99-03LP/toc.htm, retrieved June 1999.

Table A-8
Eggs: World production, by selected countries and country groups, 1994-98

Countries and groups	1994	1995	1996	1997	1998
			Million eggs		
North America:					
Canada	5,736	5,792	5,881	5,931	6,040
Mexico	25,896	25,760	26,045	28,170	29,830
United States	74,136	74,592	76,452	77,676	79,904
Subtotal	105,768	106,144	108,378	111,777	115,774
South America:					
Brazil	13,460	16,065	15,932	12,596	13,600
Colombia	6,357	6,912	7,182	7,411	7,782
Subtotal	19,817	22,977	23,114	20,007	21,382
European Union:					
Belgium-Luxembourg	3,600	3,858	3,700	3,615	3,488
Denmark	1,382	1,474	1,500	1,600	1,600
France	16,370	16,911	16,500	16,084	16,250
Germany	13,960	13,838	13,922	14,025	14,025
Greece	2,500	2,600	2,650	2,640	2,640
Ireland	605	610	539	544	550
Italy	11,599	12,017	11,923	12,298	12,290
Netherlands	10,306	9,970	9,879	10,092	10,400
Portugal	1,831	1,869	1,797	1,779	1,700
Spain	9,670	9,983	8,952	9,450	9,250
United Kingdom	10,620	10,644	10,668	10,752	10,480
Subtotal	82,443	83,774	82,030	82,879	82,673
Eastern Europe:					
Poland	6,100	6,500	6,600	7,700	8,300
Romania	3,300	3,650	5,200	4,750	4,700
Subtotal	9,400	10,150	11,800	12,450	13,000
Former Soviet Union:					
Russia	37,400	33,720	31,500	31,900	35,000
Ukraine	10,145	9,500	8,633	8,246	8,400
Subtotal	47,545	43,220	40,133	40,146	43,400
Middle East:					
Turkey	7,900	8,000	8,500	9,100	9,750
Subtotal	7,900	8,000	8,500	9,100	9,750
Asia:					
China	281,010	301,860	312,640	340,064	363,508
Hong Kong	18	21	15	5	0
India	24,800	27,300	29,000	29,500	31,000
Japan	43,047	42,167	42,786	42,588	42,200
Korea	8,094	8,317	8,640	8,790	8,458
Taiwan	5,673	6,237	6,828	7,636	7,950
Thailand	7,530	7,700	8,100	8,900	8,500
Subtotal	370,172	393,602	408,009	437,483	461,616
Total	643,045	667,867	681,964	713,842	747,595

Source: USDA, FAS post reports, official statistics, and interagency analysis. Reported in USDA, FAS, Livestock and Poultry: World Markets and Trade, Mar. 29, 1999, found at Internet address http://www.fas.usda.gov/dlp/circular/1999/99-03LP/toc.htm, retrieved June 1999.

Table A-9
Eggs: U.S. consumption, by type, 1994-98

Year	Hatching eggs	Table eggs	Egg products[1]	Total
		Million dozen		
1994	880	3,782	1,245	5,907
1995	820	3,867	1,229	5,916
1996	838	3,922	1,244	6,004
1997	857	3,933	1,348	6,138
1998	869	4,046	1,430	6,345

[1] Shell egg equivalent.

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

Table A-10
Eggs: U.S. per capita consumption, by type, 1994-98

Year	Table eggs	Egg products[1]	Total
1994	174	57	231
1995	176	56	232
1996	177	56	233
1997	176	60	236
1998	180	63	243

[1] Shell egg equivalent.

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

Table A-11
Table eggs: U.S. production, beginning stocks, imports for consumption, exports of domestic merchandise, ending stocks, apparent U.S. consumption, ratio of imports to consumption, and ratio of exports to production, 1994-98

Year	U.S. production	Beginning stocks	U.S. imports	U.S. exports	Ending stocks	Apparent U.S. consumption	Ratio of imports to consumption	Ratio of exports to production
	Quantity *(million dozen)*						*Percentage*	
1994	3,868	10	2	83	15	3,782	(1)	2.1
1995	3,941	15	2	80	11	3,867	(1)	2.0
1996	4,003	11	2	86	9	3,922	(1)	2.1
1997	3,988	9	4	61	7	3,933	(1)	1.5
1998	4,092	7	4	49	8	4,046	(1)	1.2
	Value *(million dollars)*							
1994	2,791	7	3	52	11	2,739	(1)	1.9
1995	3,006	11	4	52	9	2,960	(1)	1.7
1996	3,643	10	4	62	8	3,588	(1)	1.7
1997	3,347	7	6	42	6	3,312	(1)	1.3
1998	3,166	6	4	35	6	3,134	(1)	1.1
	Unit value *(million dollars)*							
1994	0.72	0.72	1.95	0.63	0.72	0.72	(2)	(2)
1995	0.76	0.76	1.69	0.65	0.76	0.76	(2)	(2)
1996	0.91	0.91	1.83	0.72	0.91	0.91	(2)	(2)
1997	0.84	0.84	1.46	0.70	0.84	0.84	(2)	(2)
1998	0.77	0.77	1.16	0.72	0.77	0.77	(2)	(2)

[1] Less than 0.5 percent.
[2] Not applicable.

Note.—Apparent consumption and unit values may not add to values shown due to rounding.

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

Table A-12
Egg products: U.S. production, imports for consumption, exports of domestic merchandise, apparent U.S. consumption, ratio of imports to consumption, and ratio of exports to production, 1994-98

Year	U.S. production	U.S. imports	U.S. exports	Apparent U.S. consumption	Ratio of imports to consumption	Ratio of exports to production
	Quantity *(million dozen)*				*Percentage*	
1994	1,403	5	163	1,245	([1])	11.6
1995	1,428	5	204	1,229	([1])	14.3
1996	1,511	8	274	1,244	0.6	18.2
1997	1,590	7	249	1,348	0.5	15.7
1998	1,645	8	223	1,430	0.5	13.5
	Quantity *(million pounds)*					
1994	1,407	3	59	1,350	([1])	4.2
1995	1,456	2	63	1,395	([1])	4.3
1996	1,622	4	81	1,545	([1])	5.0
1997	1,704	6	82	1,628	([1])	4.8
1998	1,761	5	64	1,701	([1])	3.7
	Value *(million dollars)*					
1994	762	2	53	711	([1])	7.0
1995	846	2	60	788	([1])	7.1
1996	1,116	4	86	1,033	([1])	7.7
1997	1,014	4	88	930	([1])	8.7
1998	945	4	64	885	([1])	6.8
	Unit value *(dollars per dozen)*					
1994	0.54	0.41	0.32	0.57	([2])	([2])
1995	0.59	0.39	0.30	0.64	([2])	([2])
1996	0.74	0.51	0.31	0.83	([2])	([2])
1997	0.64	0.62	0.35	0.69	([2])	([2])
1998	0.57	0.49	0.29	0.62	([2])	([2])

[1] Less than 0.5 percent.
[2] Not applicable.

Note.—Apparent consumption and unit values may not add to values shown due to rounding.

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

Table A-13
Hatching eggs: U.S. production, imports for consumption, exports of domestic merchandise, apparent U.S. consumption, ratio of imports to consumption, and ratio of exports to production, 1994-98

Year	U.S. production	U.S. imports	U.S. exports	Apparent U.S. consumption	Ratio of imports to consumption	Ratio of exports to production
	Quantity *(million dozen)*				*Percentage*	
1994	906	2	28	880	(1)	3.0
1995	847	2	29	820	(1)	3.4
1996	864	2	28	838	(1)	3.2
1997	895	1	39	857	(1)	4.3
1998	922	1	54	869	(1)	5.8
	Value *(million dollars)*					
1994	1,166	25	53	1,138	2.2	4.5
1995	1,178	15	52	1,140	1.3	4.4
1996	1,244	16	58	1,201	1.3	4.7
1997	1,295	9	76	1,228	0.7	5.9
1998	1,256	5	108	1,154	0.5	8.6
	Unit value *(dollars per dozen)*					
1994	1.29	16.36	1.91	1.29	(2)	(2)
1995	1.39	9.57	1.79	1.39	(2)	(2)
1996	1.44	8.06	2.09	1.43	(2)	(2)
1997	1.45	7.08	1.95	1.43	(2)	(2)
1998	1.36	6.10	2.01	1.33	(2)	(2)

[1] Less than 0.5 percent.
[2] Not applicable.

Note.—Apparent consumption and unit values may not add to values shown due to rounding.

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

Table A-14
Eggs: International comparison of prices, costs and net returns, 1998

Country	Cost	Price	Net return
		Cents per pound	
United States	20	26	6
Canada	21	47	26
Brazil	21	41	20
Ukraine	22	45	23
India	24	24	0
France	25	35	10
Mexico	26	36	10
Holland	26	34	8
Russia	27	68	41
Poland	31	51	20
China	34	24	(10)
Japan	41	59	18

Source: "International Comparison of Egg Costs," *Egg Industry*, Nov. 1998, pp. 14-16.

Table A-15
Eggs: U.S. production by type, 1994-98

Type	1994	1995	1996	1997	1998
	Quantity *(million dozen, shell egg equivalent)*				
Hatching eggs	906	847	864	895	922
Table eggs	3,868	3,941	4,003	3,988	4,092
Egg products	1,403	1,428	1,511	1,590	1,645
Total	6,177	6,216	6,378	6,473	6,659
	Percentage of total				
Hatching eggs	15	14	14	14	14
Table eggs	63	63	63	62	61
Egg products	23	23	24	25	25
Total	100	100	100	100	100

Note.—Figures may not add to totals shown due to rounding.

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

Table A-16
Eggs: World exports, less hatching eggs, by selected countries and country groups, 1994-98

Countries and groups	1994	1995	1996	1997	1998
			Million eggs		
North America:					
Canada	295	341	393	323	355
Mexico	0	0	0	0	0
United States	2,251	2,507	3,037	2,734	2,625
Subtotal	2,546	2,848	3,430	3,057	2,980
South America:					
Brazil	15	12	15	20	25
Subtotal	15	12	15	20	25
European Union (excluding intra-EU trade):					
Belgium-Luxembourg	61	57	100	90	60
Denmark	117	68	77	77	77
France	246	129	50	340	340
Germany	279	239	219	179	125
Greece	3	3	5	8	8
Ireland	8	0	0	10	15
Italy	111	224	112	185	185
Netherlands	2,333	1,621	988	1,689	1,902
Portugal	3	3	3	3	3
Spain	22	30	23	8	15
United Kingdom	9	25	29	71	78
Subtotal	3,192	2,399	1,606	2,660	2,808
Eastern Europe:					
Poland	2	26	23	5	10
Subtotal	2	26	23	5	10
Former Soviet Union:					
Russia	50	50	50	50	50
Subtotal	50	50	50	50	50
Middle East:					
Turkey	164	155	400	465	600
Subtotal	164	155	400	465	600
Asia:					
China	647	501	715	990	900
Hong Kong	30	43	31	10	6
India	0	0	0	0	0
Japan	117	57	22	250	350
Singapore	0	0	0	0	0
Taiwan	9	7	9	10	10
Thailand	1	24	65	50	99
Subtotal	804	632	842	1,310	1,365
Total	6,773	6,122	6,366	7,567	7,838

Source: USDA, FAS post reports, official statistics, and interagency analysis. Reported in USDA, FAS, Livestock and Poultry: World Markets and Trade, Mar. 29, 1999, found at Internet address http://www.fas.usda.gov/dlp/circular/1999/99-03LP/toc.htm, retrieved June 1999.

Table A-17
Eggs: World imports, less hatching eggs, by selected countries and country groups, 1994-98

Countries and groups	1994	1995	1996	1997	1998
			Million eggs		
North America:					
Canada	551	426	607	666	700
Mexico	144	83	157	217	253
United States	44	49	65	83	70
Subtotal	739	558	829	966	1,023
South America:					
Colombia	31	60	50	28	29
Subtotal	31	60	50	28	29
European Union (excluding intra-EU trade):					
Belgium-Luxembourg	16	7	20	20	20
Denmark	0	7	0	0	0
France	7	72	57	215	212
Germany	220	43	264	111	75
Greece	2	0	0	0	0
Ireland	12	0	0	0	20
Italy	87	3	243	5	5
Netherlands	122	33	124	136	195
Portugal	0	20	20	20	20
Spain	5	16	1	11	6
United Kingdom	10	9	38	25	25
Subtotal	481	210	767	543	578
Eastern Europe:					
Poland	220	596	178	77	100
Subtotal	220	596	178	77	100
Former Soviet Union:					
Russia	50	50	50	50	60
Subtotal	50	50	50	50	60
Middle East:					
Turkey	2	21	20	3	2
Subtotal	2	21	20	3	2
Asia:					
China	7	25	3	14	5
Hong Kong	1,691	1,681	1,732	1,489	1,485
Japan	1,696	1,820	1,817	1,741	1,730
Korea	66	86	115	65	43
Subtotal	3,460	3,612	3,667	3,309	3,263
Total	4,983	5,107	5,561	4,976	5,055

Source: USDA, FAS post reports, official statistics, and interagency analysis. Reported in USDA, FAS, Livestock and Poultry: World Markets and Trade, Mar. 29, 1999. Found at Internet address http://www.fas.usda.gov/dlp/circular/1999/99-03LP/toc.htm, retrieved June 1999.

Table A-18
Eggs: U.S. exports of domestic merchandise, imports for consumption, and merchandise trade balance, by selected countries and country groups, 1994-98[1]

Item/country (group)	1994	1995	1996	1997	1998
			Million dollars		
U.S. exports of domestic merchandise:					
Canada	38	32	44	51	61
Mexico	16	14	23	29	44
Japan	32	38	50	44	32
Hong Kong	26	26	34	18	14
Jamaica	6	5	6	7	6
Germany	5	3	4	6	5
Netherlands	3	4	8	6	4
Costa Rica	(2)	(2)	(2)	2	4
Trinidad & Tobago	1	2	2	3	3
Nicaragua	2	3	2	2	3
All other	28	38	33	39	30
Total	158	164	207	207	207
Latin America	35	40	46	58	77
APEC	114	114	159	154	157
ASEAN	1	1	2	3	2
CBERA	14	15	16	20	28
Eastern Europe	1	1	2	2	1
EU-15	13	11	17	16	12
Middle East Gulf	10	12	5	2	2
Pacific Rim	59	66	88	68	50
Sub-Sahara Africa	(2)	(2)	(2)	(2)	(2)
U.S. imports for consumption:					
Canada	11	11	14	11	8
Mexico	1	(2)	1	0	0
Japan	(2)	(2)	(2)	(2)	(2)
Hong Kong	(2)	0	(2)	(2)	0
Jamaica	0	0	0	0	0
Germany	(2)	(2)	(2)	(2)	(2)
Netherlands	(2)	(2)	(2)	(2)	(2)
Costa Rica	(2)	0	0	0	0
Trinidad & Tobago	0	0	0	0	0
Nicaragua	0	0	0	0	0
All other	18	9	9	7	6
Total	30	20	24	19	14
Latin America	1	(2)	1	(2)	(2)
APEC	15	16	19	18	12
ASEAN	(2)	1	1	1	(2)
CBERA	(2)	0	(2)	(2)	(2)
Eastern Europe	(2)	0	0	0	0
EU-15	8	4	4	1	1
Middle East Gulf	0	0	0	0	0
Pacific Rim	4	4	5	6	5
Sub-Sahara Africa	5	(2)	(2)	(2)	0

See footnotes at end of table.

Table A-18—*Continued*
Eggs: U.S. exports of domestic merchandise, imports for consumption, and merchandise trade balance, by selected countries and country groups, 1994-98[1]

Item/country (group)	1994	1995	1996	1997	1998
			Million dollars		
U.S. merchandise trade balance:					
Canada	27	21	30	40	53
Mexico	16	14	22	29	44
Japan	32	38	50	44	32
Hong Kong	26	26	34	18	14
Jamaica	6	5	6	7	6
Germany	5	3	4	6	5
Netherlands	3	3	8	6	4
Costa Rica	(2)	(2)	(2)	2	4
Trinidad & Tobago	1	2	2	3	3
Nicaragua	2	3	2	2	3
All other	10	29	24	32	24
Total	128	144	183	188	193
Latin America	35	40	45	57	77
APEC	99	98	139	136	145
ASEAN	0	1	2	2	1
CBERA	14	15	16	20	28
Eastern Europe	1	1	2	2	1
EU-15	5	6	12	16	12
Middle East Gulf	10	12	5	2	2
Pacific Rim	55	62	84	61	46
Sub-Sahara Africa	(5)	(3)	(3)	(2)	(2)

[1] Import values are based on customs value; export values are based on f.a.s. value, U.S. port of export.
[2] Less than $500,000.
[3] Less than -$500,000.

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

Table A-19
Eggs: U.S. imports for consumption, by principal sources, 1994-98

Source	1994	1995	1996	1997	1998
			1,000 dollars		
Canada	10,800	11,143	13,986	11,297	7,750
China	2,055	2,860	2,808	3,940	2,976
Taiwan	878	756	915	1,171	728
New Zealand	255	304	374	388	391
Thailand	209	534	482	617	380
France	323	592	480	296	315
United Kingdom	7,543	3,611	3,895	166	296
Israel	1,526	([1])	([1])	269	278
India	([1])	1	([1])	250	250
Netherlands	70	85	11	90	103
Japan	199	24	32	136	102
Denmark	65	117	66	107	76
Panama	0	0	54	153	56
Other	6,094	427	718	139	18
Total	30,017	20,454	23,821	19,019	13,719

[1] Not applicable.

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

Table A-20
Hatching eggs:[1] U.S. imports by principal suppliers, 1994-98

Country	1994	1995	1996	1997	1998
	Quantity *(1,000 dozen)*				
Canada	1,090	1,428	1,883	1,200	857
France	8	15	10	10	6
United Kingdom	217	57	33	4	21
India	0	(2)	0	1	(2)
Netherlands	7	16	3	8	11
Denmark	2	7	4	4	4
Germany	0	1	1	2	(2)
Mexico	23	(2)	(2)	0	0
Namibia	3	1	(2)	0	0
Israel	1	0	0	0	0
All other	162	(2)	(2)	0	0
Total	1,514	1,527	1,935	1,229	900
	Value *(1,000 dollars)*				
Canada	9,356	9,879	11,065	7,863	4,472
France	286	551	424	260	306
United Kingdom	7,541	3,569	3,895	166	296
India	(3)	1	(3)	250	250
Netherlands	70	85	11	90	103
Denmark	25	117	66	72	56
Germany	(3)	2	2	3	3
Mexico	537	25	75	(3)	(3)
Namibia	3,287	365	63	(3)	(3)
Israel	1,526	(3)	(3)	(3)	(3)
All other	2,140	11	2	0	(3)
Total	24,767	14,605	15,602	8,704	5,487
	Unit value *(dollars per dozen)*				
Canada	8.58	6.92	5.88	6.55	5.22
France	36.74	36.24	41.35	25.07	50.86
United Kingdom	34.77	62.66	117.59	37.73	14.23
India	(3)	3.48	(3)	490.20	925.93
Netherlands	9.68	5.19	4.20	11.36	8.89
Denmark	13.22	15.63	14.81	16.08	14.10
Germany	(3)	1.80	1.80	1.80	8.00
Mexico	22.82	297.62	297.62	(3)	(3)
Namibia	1029.77	435.89	595.24	(3)	(3)
Israel	2264.62	(3)	(3)	(3)	(3)
All other	13.20	21.86	4.44	(3)	(3)
Average	16.36	9.57	8.06	7.08	6.10

[1] HTS item 0407.00.0020.
[2] Less than 500.
[3] Not applicable.

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

Table A-21
Shell eggs, other than for hatching:[1] U.S. imports by principal suppliers, 1994-98

Country	1994	1995	1996	1997	1998
	Quantity *(1,000 dozen)*				
China	1,115	1,720	1,693	2,468	2,379
Taiwan	295	229	325	405	224
New Zealand	60	87	86	88	93
Israel	0	0	0	661	691
Thailand	23	175	83	148	177
Canada	8	23	34	39	21
Panama	0	0	117	367	188
Denmark	9	0	0	2	1
Germany	16	0	0	0	4
Hong Kong	32	0	64	74	0
All other	16	5	0	1	0
Total	1,572	2,239	2,402	4,255	3,778
	Value *(1,000 dollars)*				
China	1,821	2,617	2,783	3,937	2,952
Taiwan	796	630	857	1,061	511
New Zealand	255	304	374	388	391
Israel	(2)	(2)	(2)	269	278
Thailand	20	94	84	120	98
Canada	31	86	131	114	84
Panama	(2)	(2)	54	153	54
Denmark	40	(2)	(2)	35	20
Germany	30	(2)	(2)	(2)	7
Hong Kong	46	(2)	108	113	(2)
All other	29	56	(2)	3	(2)
Total	3,069	3,786	4,389	6,193	4,396
	Unit value *(dollars per dozen)*				
China	1.63	1.52	1.64	1.60	1.24
Taiwan	2.70	2.75	2.64	2.62	2.29
New Zealand	4.28	3.49	4.33	4.41	4.19
Israel	(2)	(2)	(2)	0.41	0.40
Thailand	0.88	0.54	1.01	0.81	0.55
Canada	4.07	3.79	3.85	2.89	3.96
Panama	(2)	(2)	0.46	0.42	0.30
Denmark	4.43	(2)	(2)	18.14	17.52
Germany	1.90	(2)	(2)	(2)	1.69
Hong Kong	1.44	(2)	1.69	1.52	(2)
All other	1.85	10.88	(2)	1.79	(2)
Average	1.95	1.69	1.83	1.46	1.16

[1] HTS items 0407.00.0030, 0407.00.0040, and 0407.00.0090.
[2] Not applicable.

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

Table A-22
Egg products:[1] U.S. imports by principal suppliers, 1994-98

Country	1994	1995	1996	1997	1998
	Quantity *(metric tons)*				
Canada	1,008	555	1,430	2,448	2,022
Thailand	137	299	227	311	213
Taiwan	20	60	27	54	87
Japan	26	3	5	24	22
China	100	41	12	3	15
Belgium	0	2	0	0	1
France	5	5	7	5	1
Mexico	0	0	94	0	0
Brazil	0	0	1	0	0
Vietnam	11	0	0	2	0
All other	0	4	0	2	0
Total	1,307	969	1,801	2,848	2,361
	Value *(1,000 dollars)*				
Canada	1,413	1,178	2,790	3,319	3,194
Thailand	188	440	398	498	282
Taiwan	81	126	58	109	217
Japan	199	24	32	136	102
China	203	243	25	3	24
Belgium	(2)	4	(2)	(2)	9
France	36	41	56	36	9
Mexico	(2)	(2)	467	(2)	(2)
Brazil	(2)	(2)	4	(2)	(2)
Vietnam	54	(2)	(2)	2	(2)
All other	7	7	(2)	19	(2)
Total	2,181	2,063	3,829	4,122	3,836
	Unit value *(dollars per metric ton)*				
Canada	1,402	2,124	1,951	1,356	1,580
Thailand	1,372	1,469	1,758	1,597	1,328
Taiwan	3,988	2,097	2,153	2,022	2,499
Japan	7,644	9,181	6,858	5,796	4,639
China	2,032	5,903	2,038	1,213	1,582
Belgium	(2)	1,810	(2)	(2)	8,653
France	8,026	8,476	8,369	6,955	6,016
Mexico	(2)	(2)	4,982	(2)	(2)
Brazil	(2)	(2)	4,575	(2)	(2)
Vietnam	5,037	(2)	(2)	1,090	(2)
All other	109,733	1,655	(2)	10,746	(2)
Average	1,669	2,129	2,126	1,448	1,625

[1] HTS items
[2] Not applicable.

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

Table A-23
Eggs: Harmonized Tariff Schedule subheadings; description;[1] U.S. col 1. rate of duty as of Jan. 1, 1999; U.S. exports, 1998; and U.S. imports, 1998

HTS subheading	Suffix	Brief description	Col. 1 rate of duty as of Jan. 1, 1999 General	Col. 1 rate of duty as of Jan. 1, 1999 Special[2]	Exports 1998	Imports 1998
					1,000 dollars	
0407.00.00	20	Birds' eggs, in shell, fresh, preserved or cooked, for hatching	2.9¢/doz.	Free (A,CA,E,IL,J,MX)	[3]143,343	5,487
0407.00.00	30	Birds' eggs, in shell, fresh, preserved or cooked, fresh table eggs (consumer grades)	2.9¢/doz.	Free (A,CA,E,IL,J,MX)	([3])	895
0407.00.00	90	Birds' eggs, in shell, fresh, preserved or cooked, other	2.9¢/doz.	Free (A,CA,E,IL,J,MX)	([3])	3,501
0408.11.00	00	Egg yolks, dried	49.6¢/kg	Free (A+,CA,E,IL,J,MX)	8,264	2
0408.19.00	00	Egg yolks, other than dried	10.1¢/kg	Free (A+,CA,E,IL,J,MX)	22,782	910
0408.91.00	00	Birds' eggs, not in shell, dried	49.6¢/kg	Free (A+,CA,E,IL,J,MX)	9,360	3
0408.99.00	00	Birds' eggs, not in shell, other than dried	10.1¢/kg	Free (A+,CA,E,IL,J,MX)	3,541	1,511
3502.11.00	00	Egg albumin, dried	49.6¢/kg	Free (A+,CA,E,IL,J,MX)	16,559	872
3502.19.00	00	Egg albumin, other than dried	10.1¢/kg	Free (A+,CA,E,IL,J,MX)	3,317	539

[1] Some tariff descriptions have been condensed. For the precise legal tariff description see HTS Chapters 4 and 35.

[2] 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: North American Free Trade Agreement: Goods of Canada (CA); North American Free Trade Agreement, Goods of Mexico (MX); Caribbean Basin Economic Recovery Act (E); United States-Israel Free Trade Act (IL); Andean Trade Preference Act (J); General System of Preferences (A) or (A+). For more information on these programs, see appendix B.

[3] Imports under HTS subheadings 0407.00.0020, 0407.00.0030 and 0407.00.0090 correspond to exports under Schedule B subheadings 0407.00.0000. Exports under Schedule B subheadings 0407.00.0000 are reported under the first relevant subheading in the table.

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

Table A-24
U.S. egg imports: Ad valorem equivalent rates of duty based on customs value and dutiable value, average 1994 and 1998

Product	Duty based on customs value		Duty based on dutiable value	
	1994	1998	1994	1998
	Percentage			
Hatching eggs[1]	0.1	0.0	0.1	0.1
Shell eggs[2]	1.8	1.8	1.8	2.1
Egg products[3]	4.1	1.3	4.1	5.4
All eggs	0.6	0.9	0.7	2.3

[1] HTS item 0407.00.0020.
[2] HTS items 0407.00.0030, 0407.00.0040, and 0407.00.0090.
[3] HTS items 0408.11.0000, 0408.19.0000, 0408.91.0000, 0408.99.0000, 3502.10.1000, 3502.10.5000, 3502.11.0000, and 3502.19.0000.

Source: U.S. Department of Commerce.

Table A-25
Eggs: U.S. exports by major markets, 1994-98

Source	1994	1995	1996	1997	1998
	1,000 dollars				
Canada	37,801	31,789	44,206	51,286	61,225
Mexico	16,441	13,753	22,921	29,201	44,155
Japan	31,883	37,857	49,752	44,177	32,263
Hong Kong	25,572	25,799	34,220	18,033	14,333
Jamaica	6,365	5,252	6,102	6,827	5,889
Germany	4,720	3,020	4,077	5,856	4,788
Netherlands	2,936	3,514	8,015	5,789	3,995
Costa Rica	241	424	137	1,680	3,840
Trinidad & Tobago	1,238	1,560	2,321	2,706	3,420
Nicaragua	2,333	2,601	2,243	1,586	3,176
Dominican Republic	119	1,276	240	1,014	2,561
Guyana	723	940	984	1,317	1,894
Korea	478	930	1,822	2,500	1,841
Other	27,032	35,299	29,718	34,570	23,786
Total	157,882	164,014	206,758	206,542	207,166

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

Table A-26
Hatching eggs:[1] U.S. exports by major markets, 1994-98

Country	1994	1995	1996	1997	1998
	Quantity *(1,000 dozen)*				
Canada	10,893	7,651	9,168	11,751	17,513
Mexico	3,834	1,793	4,181	9,910	15,651
Jamaica	3,232	3,068	3,107	3,500	3,195
Costa Rica	164	222	42	690	1,082
Trinidad & Tobago	905	1,182	1,439	1,769	2,090
Netherlands	683	278	414	536	704
Nicaragua	2,072	2,886	2,303	1,054	3,244
Germany	450	159	157	527	1,966
Dominican Republic	76	780	112	400	770
Guyana	434	513	529	645	863
All other	4,826	10,603	6,471	8,102	6,657
Total	27,568	29,136	27,923	38,884	53,735
	Value *(1,000 dollars)*				
Canada	23,849	17,779	25,144	28,651	39,348
Mexico	4,207	2,278	4,737	13,589	26,967
Jamaica	6,339	5,252	6,102	6,775	5,879
Costa Rica	177	344	73	1,410	3,382
Trinidad & Tobago	1,238	1,531	2,321	2,702	3,332
Netherlands	1,985	2,664	2,407	1,793	3,178
Nicaragua	2,333	2,601	2,234	1,586	3,176
Germany	606	1,053	1,125	2,487	3,032
Dominican Republic	97	1,268	229	968	2,440
Guyana	712	877	984	1,317	1,887
All other	11,215	16,402	12,918	14,497	15,471
Total	52,757	52,048	58,275	75,775	108,092
	Unit value *(dollars per dozen)*				
Canada	2.19	2.32	2.74	2.44	2.25
Mexico	1.10	1.27	1.13	1.37	1.72
Jamaica	1.96	1.71	1.96	1.94	1.84
Costa Rica	1.08	1.55	1.74	2.04	3.13
Trinidad & Tobago	1.37	1.30	1.61	1.53	1.59
Netherlands	2.91	9.58	5.81	3.35	4.51
Nicaragua	1.13	0.90	0.97	1.50	0.98
Germany	1.35	6.62	7.17	4.72	1.54
Dominican Republic	1.28	1.63	2.04	2.42	3.17
Guyana	1.64	1.71	1.86	2.04	2.19
All other	2.32	1.55	2.00	1.79	2.32
Average	1.91	1.79	2.09	1.95	2.01

[1] Schedule B number 0407.00.0020.

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

Table A-27
Shell eggs, other than for hatching:[1] U.S. exports by major markets, 1994-98

Country	1994	1995	1996	1997	1998
	Quantity *(1,000 dozen)*				
Hong Kong	42,267	42,663	52,892	27,749	20,639
Canada	14,317	10,625	8,906	13,683	18,061
Mexico	6,285	3,398	7,224	6,417	4,603
United Arab Emirates	11,832	12,589	6,167	3,363	1,973
Bermuda	58	70	49	106	29
Peru	419	157	19	283	647
Western Samoa	15	0	59	87	632
Russia	49	1,085	598	1,196	173
Korea	257	303	305	218	310
Japan	287	658	580	17	307
All other	7,062	8,319	9,114	7,539	1,279
Total	82,847	79,868	85,914	60,660	48,653
	Value *(1,000 dollars)*				
Hong Kong	25,239	24,983	33,300	16,205	13,381
Canada	8,324	7,548	7,533	9,608	11,393
Mexico	5,884	3,892	8,377	7,663	6,305
United Arab Emirates	6,466	7,133	3,749	1,733	1,360
Bermuda	648	709	837	785	403
Peru	251	365	632	524	385
Western Samoa	12	([2])	36	68	383
Russia	54	812	547	997	294
Korea	222	249	227	258	194
Japan	191	407	523	14	190
All other	4,825	5,707	6,354	4,629	964
Total	52,114	51,806	62,115	42,483	35,251
	Unit value *(dollars per dozen)*				
Hong Kong	0.60	0.59	0.63	0.58	0.65
Canada	0.58	0.71	0.85	0.70	0.63
Mexico	0.94	1.15	1.16	1.19	1.37
United Arab Emirates	0.55	0.57	0.61	0.52	0.69
Bermuda	11.17	10.13	17.08	7.41	13.90
Peru	0.60	2.32	33.26	1.85	0.60
Western Samoa	0.80	([2])	0.61	0.78	0.61
Russia	1.10	0.75	0.91	0.83	1.70
Korea	0.86	0.82	0.74	1.18	0.63
Japan	0.67	0.62	0.90	0.82	0.62
All other	0.68	0.69	0.70	0.61	0.75
Average	0.63	0.65	0.72	0.70	0.72

[1] Schedule B number 0407.00.0040.
[2] Not applicable.

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

Table A-28
Egg products:[1] U.S. exports by major markets, 1994-98

Country	1994	1995	1996	1997	1998
	Quantity *(metric tons)*				
Japan	15,272	16,508	18,360	16,225	12,040
Mexico	3,044	3,519	3,654	2,852	3,844
Canada	5,457	5,821	8,972	9,976	8,909
Germany	1,296	556	905	1,421	640
Korea	78	229	620	891	680
Singapore	122	69	263	380	553
United Kingdom	106	236	418	362	282
Hong Kong	178	312	446	735	528
Netherlands	269	190	826	306	286
Costa Rica	15	21	11	144	215
All other	1,029	1,261	2,254	4,011	1,257
Total	26,868	28,722	36,729	37,303	29,234
	Value *(1,000 dollars)*				
Japan	31,689	37,421	49,137	43,594	32,004
Mexico	6,350	7,583	9,807	7,949	10,883
Canada	5,628	6,462	11,529	13,027	10,484
Germany	3,922	1,812	2,704	3,248	1,733
Korea	257	678	1,586	2,230	1,566
Singapore	231	188	630	681	896
United Kingdom	587	743	1,231	1,064	884
Hong Kong	248	612	720	1,562	839
Netherlands	951	575	2,969	1,526	781
Costa Rica	64	62	52	269	458
All other	3,083	4,023	6,001	13,133	3,295
Total	53,010	60,159	86,367	88,285	63,823
	Unit value *(dollars per metric ton)*				
Japan	2,075	2,267	2,676	2,687	2,658
Mexico	2,086	2,155	2,684	2,787	2,831
Canada	1,031	1,110	1,285	1,306	1,177
Germany	3,026	3,259	2,988	2,286	2,708
Korea	3,295	2,961	2,558	2,503	2,303
Singapore	1,893	2,725	2,395	1,792	1,620
United Kingdom	5,538	3,148	2,945	2,939	3,135
Hong Kong	1,393	1,962	1,614	2,125	1,589
Netherlands	3,535	3,026	3,594	4,987	2,731
Costa Rica	4,267	2,952	4,727	1,868	2,130
All other	2,996	3,190	2,662	3,274	2,621
Average	1,973	2,095	2,351	2,367	2,183

[1] Schedule B number 0408.11.0000, 0408.19.0000, 0408.91.0000, 0408.99.0000, 3502.10.1000, 3502.10.5000, 3502.11.0000, and 3502.19.0000.

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

Table A-29
Eggs: Summary of trade measures among NAFTA partners

Importing country	Partner	Product	Trade measures
United States	Canada	Eggs and products	Tariff rates of "Free" and no quantitative restrictions
	Mexico	Eggs and products	Tariff rates of "Free" and no quantitative restrictions
Canada	United States	Shell eggs and egg products	Quota level For 1995, higher of 12.822 million dozen (WTO), or 2.988% of 1994 roduction (FTA) For 2000, higher of 21.370 million dozen (WTO), or 2.988% of 1999 production (FTA) Tariff level (see table A-30) In-quota imports assessed duty rate of “Free” Over-quota imports assessed MFN duty rates (i.e., U.S. receives no preferential treatment)
		Broiler hatching eggs and chicks	Quota level For 1995-2000, higher of 7.949 million dozen (WTO), or 21.1% of anticipated annual production (BHE) Tariff level (see table A-30) In-quota imports assessed duty rate of “Free” Over-quota imports assessed MFN duty rates (i.e., U.S. receives no preferential treatment)
	Mexico	Egg and products	Excluded from NAFTA (MFN treatment applies)
Mexico	United States	Shell eggs	Quota level TRQ set at 6,500 tons for 1995 and is increasing at a 3% compounded annual rate to 2005 Tariff level (see table A-30) In-quota imports assessed duty rate of “Free” Over-quota imports initially assessed 50% duty in 1995. Over first 6 years of Agreement, 24% of tariff is being eliminated, remainder being phased out over rest of 10-year transition period.
	Canada	Egg and products	Excluded from NAFTA (MFN treatment applies)

Note.—WTO World Trade Organization; FTA Canada-U.S. Free Trade Agreement; BHE Bilateral Canada-U.S. agreement on broiler hatching eggs and chicks.

Source: APEC tariff database, found at Internet address: http://www.apectariff.org, retrieved July, 1999.

Table A-30
Eggs: 1998 applied most favored nations (MFN) tariff rates and final bound WTO tariff rates, by selected countries

Country/Products	Country tariff code	1998 U.S. exports	1998 applied MFN tariff rates		Final bound WTO tariff rates	
		($1,000)				
Canada:						
Birds' eggs, in shell, fresh, preserved, or cooked:						
- Hatching eggs for broilers	04070011 04070012[1]	39,348	In-quota Over-quota	C2.17¢/doz 252% not C308¢/kg[1]	In-quota Over-quota	C1.51¢/dozen 238.3% not less than C291.7¢/kg
- Other	04070018 04070019[1]	11,393	In-quota Over-quota	C2.17¢/doz 173% not C84.6¢/kg[1]	In-quota Over-quota	C1.51¢/dozen 163.5% not less than C79.9¢/kg
Birds' eggs, not in shells, and egg yolks:						
- Egg yolks: Dried	04081110 04081120[2]	332	In-quota Over-quota	12% ad C648¢/kg[2]	In-quota Over-quota	8.6% ad valorem C612.1¢/kg
- Egg yolks: Other	04081910 04081920[2]	2,964	In-quota Over-quota	C9.56¢/kg C161¢/kg[2]	In-quota Over-quota	C6.63¢/kg C151.7¢/kg
- Other: Dried	04089110 04089120[2]	2,002	In-quota Over-quota	12% ad C648¢/kg	In-quota Over-quota	8.6% ad valorem C612.1¢/kg
- Other: Other	04089910 04089920[2]	1,625	In-quota Over-quota	C9.56¢/kg C161¢/kg	In-quota Over-quota	C6.63¢/kg C151.7¢/kg
Egg albumin:						
- Dried	35021110 35021120[2]	1,034	In-quota Over-quota	12% ad C648¢/kg	In-quota Over-quota	8.6% ad valorem C612.1¢/kg
- Other	35021910 35021920[2]	2,527	In-quota Over-quota	C9.56¢/kg C161¢/kg	In-quota Over-quota	C6.63¢/kg C151.7¢/kg
Mexico:[3]						
Birds' eggs, in shell, fresh, preserved, or cooked:						
- Fresh, including fertilized	04070001	26,967	46% ad valorem		45% ad valorem	
- Other	04070002	6,305	20% ad valorem		37.5% ad valorem	
Birds' eggs, not in shells, and egg yolks	0408	1,254	20% ad valorem		37.5% ad valorem	
Egg albumin:						
- Dried	35021101	9,113	10% ad valorem		37% ad valorem	
- Other	35021999	517	10% ad valorem		37% ad valorem	

See notes at end of table

Table A-30—*Continued*
Eggs: 1998 applied most favored nations (MFN) tariff rates and final bound WTO tariff rates, by selected countries

Country/Products	Country tariff code	1998 U.S. exports	1998 applied MFN tariff rates	Final bound WTO tariff rates
		($1,000)		
Japan:				
Birds' eggs, in shell, fresh, preserved, or cooked:				
- Hatching eggs	04070010	70	Free	Free
- Other	04070021	190	18% ad valorem	17% ad valorem
Birds' eggs, not in shells, and egg yolks:				
- Egg yolks: Dried	040811	6,057	20.9% ad valorem	18.8% ad valorem
- Egg yolks: Other	040819	16,934	Greater of 21.7% and 52¥/kg	Greater of 20% and 48¥/kg
- Other: Dried	040891	3,798	22.5% ad valorem	21.3% ad valorem
- Other: Other	040899	448	Greater of 22.5% and 54¥/kg	Greater of 21.3% and 51¥/kg
Egg albumin:				
- Dried	350211	4,736	Free	8% ad valorem
- Other	350219	31	5.7% ad valorem	2.9% ad valorem
Hong Kong:				
Birds' eggs, in shell, fresh, preserved, or cooked	0407	13,470	Free	Free
Birds' eggs, not in shells, and egg yolks	0408	792	Free	Free
Egg albumin	3502	47	Free	Free
European Union:				
Birds' eggs, in shell, fresh, preserved, or cooked:				
- Hatching eggs for turkey and geese	04070011	0	125 Ecu/ton	10
- Other hatching eggs	04070019	8,278	42 Ecu/ton	35
- Other shell eggs	04070030 04070030[5]	67	In-quota 152 Ecu/ton Over-quota 361 Ecu/ton	In- 152 Ecu/ton Ov 304 Ecu/ton

See notes at end of table

Table A-30—*Continued*
Eggs: 1998 applied most favored nations (MFN) tariff rates and final bound WTO tariff rates, by selected countries

Country/Products	Country tariff code	1998 U.S. exports	1998 applied MFN tariff rates		Final bound WTO tariff rates	
		($1,000)				
European Union:—*continued*						
Birds' eggs, not in shells, and egg yolks:						
- Egg yolks: Dried	04081180	520	In-quota	711 Ecu/ton	In-quota	711 Ecu/ton
	04081180[6]		Over-quota	1,690 Ecu/ton	Over-quota	1,423 Ecu/ton
- Egg yolks: Other, liquid	04081981	0	In-quota	310 Ecu/ton	In-quota	310 Ecu/ton
	04081981[6]		Over-quota	736 Econ/ton	Over-quota	620 Ecu/ton
- Egg yolks: Other, including frozen	04081989	0	In-quota	331 Ecu/ton	In-quota	331 Ecu/ton
	04081989[6]		Over-quota	787 Econ/ton	Over-quota	663 Ecu/ton
- Other: Dried	04089180	2,495	In-quota	687 Ecu/ton	In-quota	687 Ecu/ton
	04089180[6]		Over-quota	1,632 Ecu/ton	Over-quota	1,374 Ecu/ton
- Other: Other	04089980	425	In-quota	176 Ecu/ton	In-quota	176 Ecu/ton
	04089980[6]		Over-quota	419 Ecu/ton	Over-quota	353 Ecu/ton
Egg albumin:						
- Dried	35021190	604	In-quota	617 Ecu/ton	In-quota	617 Ecu/ton
	35021190[7]		Over-quota	1,582 Ecu/ton	Over-quota	1,235 Ecu/ton
- Other	35021990	0	In-quota	83 Ecu/ton	In-quota	83 Ecu/ton
	35021990[7]		Over-quota	214 Ecu/ton	Over-quota	167 Ecu/ton

[1] During 1995-2000, over-quota rate applied when imports entering under tariff codes 04070011 and 04070018 exceed 7.949 million dozen.
[2] In 1998, over-quota rate applied when imports entering under tariff codes 04081110, 04081910, 04089110, 04089910, 35021110, and 35021920 exceeded 17.9508 million tons (TRQ quantity for 2000 is 21.37 million tons).
[3] Mexico implementation, 1995-2004
[4] In 1998, over-quota rate applied when imports entering under tariff codes 04070030 exceeded 96,181 tons (TRQ quantity for 2000 is 180,000 tons).
[5] In 1998, over-quota rate applied when imports entering under tariff codes 04081180, 04081981, 04081989, 04089180, and 04089980 exceeded 6,463 tons (TRQ quantity for 2000 is 7,000 tons).
[6] In 1998, over-quota rate applied when imports entering under tariff codes 35021190 and 35021990 exceeded 10,835 tons (TRQ quantity for 2000 is 20,000 tons).

Source: Bound tariff rates from WTO, The Results of the Uruguay Round, 1996 (CDROM). Applied tariff data for Canada and Mexico from tariff schedules posted by the APEC Secretariat, found at http://www.apectariff.org; EU applied MFN tariffs from Official Journal of European Communities, L292, Vol. 41, Oct. 30, 1998; Japan applied rates from Customs Tariff Schedule of Japan, 1998. U.S. exports from official statistics of the U.S. Department of Commerce.

Table A-31
Eggs: Top 10 producing countries, average production level, share of world production, and annual growth, 1994-98

Country	Average production level	Share of world production	Average annual growth
	(1,000 tons)	*(Percentage)*	*(Percentage)*
China	15,374	34.2	10.3
European Union	5,246	11.7	-0.6
United States	4,531	10.1	1.9
Japan	2,571	5.7	-0.0
Russia	1,842	4.1	-5.9
India	1,543	3.4	2.8
Mexico	1,412	3.1	0.3
Brazil	1,295	2.9	3.4
Indonesia	600	1.3	10.6
Turkey	580	1.3	6.5
Rest of the world	9,907	22.1	1.4
World	44,902	100.0	3.8

Source: *WATT Poultry Statistical Yearbook, 1999*, pp. 12-18.

Table A-32
Eggs: Top 10 exporting and importing countries, average trade level, share of world trade, and annual growth, 1994-97

Country	Average trade level	Share of world trade	Average annual growth
	(Million dollars)	*(Percentage)*	*(Percentage)*
Exporting:			
European Union	192	30.1	4.1
United States	184	28.9	9.9
China	39	6.1	12.8
Malaysia	37	5.8	9.3
Canada	36	5.6	6.7
Turkey	16	2.6	69.6
India	16	2.5	197.0
Hungary	12	1.9	27.6
Czech Republic	9	1.5	19.8
Israel	8	1.5	20.3
Rest of the world	87	13.7	21.7
World	636	100.0	11.6
Importing:			
Japan	111	17.9	4.7
Hong Kong	106	17.1	7.5
Switzerland	54	8.7	4.1
Singapore	51	8.3	4.9
Canada	43	6.9	13.4
European Union	38	6.2	2.0
United States	22	3.5	-11.9
Mexico	20	3.1	20.7
Russia	12	2.0	32.9
Oman	11	1.7	9.9
Rest of the world	153	24.5	13.5
World	622	100.0	6.8

Source: United Nations, Trade Statistics.

Table A-33
World egg trade: Major world egg-exporting countries and export destination; major world importing countries and import source, based on value of trade, 1994-97 average

Leading exporting country[1]	Export destination[2]	Leading importing country[3]	Import source[4]
1. European Union[5] (30)	1. Switzerland (24)	1. Japan (18)	1. United States (43)
	2. Japan (16)		2. EU (33)
	3. Hong Kong (10)		3. Canada (8)
	4. United Arab Emirates (4)		4. Brazil (5)
	5. Libya (3)		5. Thailand (3)
2. United States (29)	1. Canada (22)	2. Hong Kong (17)	1. United States (32)
	2. Japan (21)		2. China (32)
	3. Hong Kong (14)		3. EU (22)
	4. Mexico (11)		4. Vietnam (9)
	5. EU (7)		5. Thailand (2)
3. China (6)	1. Hong Kong (66)	3. Switzerland (9)	1. EU (91)
	2. Japan (7)		2. United States (2)
	3. Macau (7)		3. Czech Rep. (1)
	4. United States (6)		
	5. Singapore (4)		
4. Malaysia (6)	1. Singapore (97)	4. Singapore (8)	1. Malaysia (83)
	2. Hong Kong (2)		2. Vietnam (6)
			3. China (4)
			4. Taiwan (3)
			5. United States (1)
5. Canada (6)	1. United States (34)	5. Canada (7)	1. United States (95)
	2. EU (32)		2. China (4)
	3. Japan (20)		
	4. Hungary (2)		
	5. Australia (2)		
6. Turkey (3)	1. Azerbaijan (30)	6. European Union[5] (6)	1. United States (37)
	2. Georgia, Rep. (23)		2. Canada (27)
	3. Iran (18)		3. Israel (8)
	4. Romania (18)		4. Hungary (5)
	5. Bulgaria (2)		5. Bulgaria (3)

[1] Percent of world exports (excluding intra-EU trade) in parenthesis.
[2] Percent of exporting country exports shipped to destination in parenthesis.
[3] Percent of world imports (excluding intra-EU trade) in parenthesis.
[4] Percent of importing country imports received from source in parenthesis.
[5] Excludes intra-EU trade.

Source: Compiled from official statistics of the United Nations.

APPENDIX B
TARIFF AND TRADE AGREEMENT TERMS

TARIFF AND TRADE AGREEMENT TERMS

In the ***Harmonized Tariff Schedule of the United States*** (HTS), chapters 1 through 97 cover all goods in trade and incorporate in the tariff nomenclature the internationally adopted Harmonized Commodity Description and Coding System through the 6-digit level of product description. Subordinate 8-digit product subdivisions, either enacted by Congress or proclaimed by the President, allow more narrowly applicable duty rates; 10-digit administrative statistical reporting numbers provide data of national interest. Chapters 98 and 99 contain special U.S. classifications and temporary rate provisions, respectively. The HTS replaced the *Tariff Schedules of the United States* (TSUS) effective January 1, 1989.

Duty rates in the ***general*** subcolumn of HTS column 1 are normal trade relations rates, many of which have been eliminated or are being reduced as concessions resulting from the Uruguay Round of Multilateral Trade Negotiations. Column 1-general duty rates apply to all countries except those listed in HTS general note 3(b) (Afghanistan, Cuba, Laos, North Korea, and Vietnam) plus Serbia and Montenegro, which are subject to the statutory rates set forth in ***column 2***. Specified goods from designated general-rate 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 rate of duty column 1 or in the general notes. If eligibility for special tariff rates is not claimed or established, goods are dutiable at column 1-general rates. The HTS does not enumerate those countries as to which a total or partial embargo has been declared.

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 for 10 years and extended several times thereafter, applies to merchandise imported on or after January 1, 1976 and before the close of June 30, 1999. Indicated by the symbol "A", "A*", or "A+" in the special subcolumn, 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 4 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. Indicated by the symbol "E" or "E*" in the special subcolumn, the CBERA provides duty-free entry to eligible articles, and reduced-duty treatment to certain other

articles, which are the product of and imported directly from designated countries, as set forth in general note 7 to the HTS.

Free rates of duty in the special subcolumn followed by the symbol "IL" are applicable to products of Israel under the ***United States-Israel Free Trade Area Implementation Act*** of 1985 (IFTA), as provided in general note 8 to the HTS.

Preferential nonreciprocal duty-free or reduced-duty treatment in the special subcolumn followed by the symbol "J" or "J*" in parentheses is afforded to eligible articles the product of designated beneficiary countries under the ***Andean Trade Preference Act*** (ATPA), enacted as title II of Public Law 102-182 and implemented by Presidential Proclamation 6455 of July 2, 1992 (effective July 22, 1992), as set forth in general note 11 to the HTS.

Preferential free rates of duty in the special subcolumn followed by the symbol "CA" are applicable to eligible goods of Canada, and rates followed by the symbol "MX" are applicable to eligible goods of Mexico, under the ***North American Free Trade Agreement***, as provided in general note 12 to the HTS and implemented effective January 1, 1994 by Presidential Proclamation 6641 of December 15, 1993. Goods must originate in the NAFTA region under rules set forth in general note 12(t) and meet other requirements of the note and applicable regulations.

Other special tariff treatment applies to particular ***products of insular possessions*** (general note 3(a)(iv)), products of the West Bank and Gaza Strip (general note 3(a)(v)), goods covered by the Automotive Products Trade Act (APTA) (general note 5) and the ***Agreement on Trade in Civil Aircraft*** (ATCA) (general note 6), ***articles imported from freely associated states*** (general note 10), ***pharmaceutical products*** (general note 13), and ***intermediate chemicals for dyes*** (general note 14).

The ***General Agreement on Tariffs and Trade 1994*** (GATT 1994), pursuant to the Agreement Establishing the World Trade Organization, is based upon the earlier GATT 1947 (61 Stat. (pt. 5) A58; 8 UST (pt. 2) 1786) as the primary multilateral system of disciplines and principles governing international trade. Signatories' obligations under both the 1994 and 1947 agreements focus upon most-favored-nation treatment, the maintenance of scheduled concession rates of duty, and national treatment for imported products; the GATT also provides the legal framework for customs valuation standards, "escape clause" (emergency) actions, antidumping and countervailing duties, dispute settlement, and other measures. The results of the Uruguay Round of multilateral tariff negotiations are set forth by way of separate schedules of concessions for each participating contracting party, with the U.S. schedule designated as Schedule XX. Pursuant to the ***Agreement on Textiles and Clothing*** (ATC) of the GATT 1994, member countries are phasing out restrictions on imports under the prior "Arrangement Regarding International Trade in Textiles" (known as the ***Multifiber Arrangement*** (MFA)). Under the MFA, which was a departure from GATT 1947 provisions, importing and exporting countries negotiated bilateral agreements limiting textile and apparel shipments, and importing countries could take unilateral action in the absence or violation of an agreement. Quantitative limits had been established on