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Industry & Trade Summary

**Lamps and Lighting
Fittings**



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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 area and contains information on product uses, U.S. and foreign producers, and customs treatment. Also included is an analysis of the basic factors affecting trends in consumption, production, and trade of the commodity, as well as those bearing on the competitiveness of U.S. industries in domestic and foreign markets.¹

This report on lamps and lighting fittings covers the period 1986 through 1990 and represents 1 of approximately 250-300 individual reports to be produced in this series during the first half of the 1990s. Listed below are the individual summary reports published to date on the miscellaneous manufactures sector.

<i>USITC publication number</i>	<i>Publication date</i>	<i>Title</i>
2426(GM-1)	November 1991	Toys and Models
2476(GM-2)	January 1992	Lamps and Lighting Fittings

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.

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INTRODUCTION

This report provides information on the domestic and foreign industries producing lamps and lighting fittings, U.S. and foreign tariff policies and nontariff measures in effect for these products, and the U.S. industry performance in domestic and foreign markets. The report covers the period 1986 through 1990.

The products covered here include electric ceiling and wall lighting fittings; electric table, desk, bedside, and floorstanding lamps; incandescent lamps operated by propane or other gas; illuminated electric and neon signs; lighting sets used for Christmas trees; globes and shades of glass; and other parts of lamps and lighting fittings. These items are used in residential, commercial, industrial, and institutional environments for (1) general illumination of areas; (2) task lighting or "localized lighting" for specific work areas; and (3) accent or decorative lighting that consists of concentrated beams of light used frequently by architects and interior designers to highlight art displays, decorations, and other specific points of interest within a room. Illuminated signs are used principally for advertising and other promotional business activities.

Processes used in the manufacture of lamps and lighting fittings vary widely, from customized work requiring the refined skills and expertise of well-trained artisans to high-speed, mass production by machines. The ratio of labor to capital differs from product to product. Materials commonly used to make lamps and lighting fittings include carbon steel, alloy steel, stainless steel, aluminum and aluminum-base alloy, magnet wire, plastics, flat glass (plate, float, and sheet), and sand and soda ash for making glass (see figure 1).

U.S. INDUSTRY PROFILE

Industry Structure

The U.S. industry examined in this report covers Standard Industrial Classification (SIC) 3645, Residential Electric Lighting Fixtures; SIC 3646, Commercial, Industrial, and Institutional Electric Lighting Fixtures; SIC 3648, Lighting Equipment, Not Elsewhere Classified (NEC) (excluding hand portable equipment); part of SIC 3229, Pressed and Blown Glass and Glassware, NEC (specifically chimneys, globes, and shades of glass and other lighting glassware); and part of SIC 3993, Signs and Advertising Specialties (specifically electric illuminated signs and nameplates). This report does not cover electric light bulbs and tubes that are classified in SIC 3641, nor does it cover vehicular lighting equipment (such as automobile headlights) classified in SIC 3647.

Approximately 1,600 establishments produced lamps, lighting fittings, and parts in the United States

in 1990. This total is down 4-percent from an estimated 1,660 in 1986. A number of mergers and acquisitions by some of the large manufacturers caused the lamps and lighting fittings industry to become slightly more concentrated during 1986-90. The most highly concentrated sector within the industry is that producing commercial lamps and lighting fittings. Seventeen manufacturers accounted for an estimated 60 percent of U.S. domestic shipments of commercial lamps and lighting fittings. In contrast, 16 manufacturers accounted for only 30 percent of domestic shipments of residential lamps and lighting fittings. Sixty percent of such shipments are accounted for by 200 manufacturers.

The leading U.S. lamps and lighting fittings manufacturers include Bairnco, The Chartwell Group Ltd., Cooper Industries, DFT Industries, Emersion Electric, General Electric, GTE Sylvania Lighting, Kitchler, Lightolier, Lithonia Lighting, Progress Lighting, Seagull Lighting, Thomas Industries, and Universal Fixtures. In general, large manufacturers such as these usually offer wide product lines that include both mass-produced and custom-designed products of varying qualities and prices. Many of these manufacturers engage in vertically integrated production. They are involved in the entire spectrum of production from the processing of raw materials used in their products to final assembly. In contrast, smaller manufacturers usually specialize in a narrow range of products and engage in fewer phases of production.

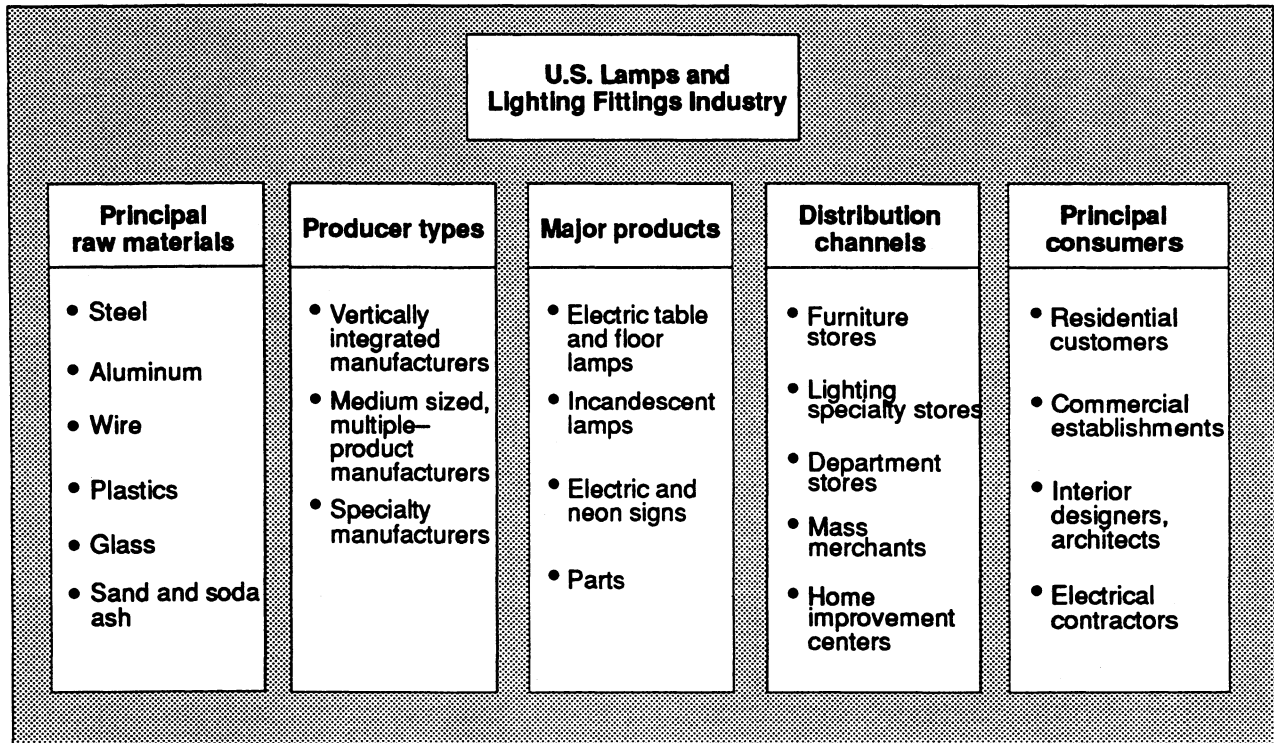
U.S. lighting manufacturers are widely dispersed throughout the country. However, many are in California, New York, Ohio, Pennsylvania, and Florida. No criteria specific to the lamps and lighting fittings industry are reported to influence the selection of sites for manufacturing plants. However, a few manufacturers have stated that the availability of skilled labor and low business taxes motivated their choice of particular manufacturing sites.

Estimated U.S. employment in this industry totaled 75,000 in 1990, up from approximately 73,000 in 1986, but down from an estimated 80,000 in 1987 and 1988. The onset of the recession in 1990 resulted in workforce reductions at numerous plants. Capacity utilization for U.S. commercial and residential lamps and lighting fittings establishments nationwide averaged an estimated 65 percent of capacity in 1990, up from an estimated 63 percent in 1986 but down from an estimated 69 percent in 1987.

Production processes in the lighting industry run the gamut. Highly labor-intensive processes may require the refined skills of an artisan or craftsman and hours of time to produce a dozen or fewer fixtures per day. Also capital-intensive manufacturing may produce dozens of fixtures mechanically per minute. The labor or capital-intensity of production depends on the technical requirements of an individual product and on whether the product is standardized or custom-designed. Some of the most labor-intensive production

Figure 1

U.S. lamps and lighting fittings Industry: Principal raw materials, producer types, major products, distribution channels, and principal consumers



Source: U.S. Department of Commerce: Bureau of the Census, *Census of Manufactures, 1987*; industry sources.

occurs in the manufacture of such varied lighting products as neon signs, high-end Tiffany-style lamps, and Christmas tree lighting sets. Some neon tubes used in electric signs have to be bent to highly specific patterns and shapes which requires skilled manual manipulation and dexterity. Such a process is difficult to automate.

Tiffany-style lamps and lighting fittings also require extensive hand crafting. At least five different steps are involved in producing a Tiffany-style lamp: glass cutting, assembly, the application of finishing solutions, the application of copper foil to the glass, and the selection of proper wattage and base.

Christmas tree lighting sets require labor-intensive mass production. U.S. manufacturers have explored methods to automate production of Christmas tree lighting sets, but the capital investment required has discouraged them. Also, a recent change in the number of bulbs contained in each lighting set from 35 to 50 has further deterred a shift to automated production. Such a change can be accommodated more easily, quickly, and less expensively by using labor rather than capital-intensive production.

In recent years, the number of Christmas tree lighting sets produced in the United States has been

very limited. U.S. manufacturers have not been able to compete with very low-priced Christmas tree lighting sets imported from the Far East, where the cost of labor is much cheaper than in the United States. In response to competition from the Far East, some U.S. manufacturers have transferred the assembly of Christmas tree lighting sets to Mexico to take advantage of substantially lower labor costs and to match the prices of imports from the Far East.

In contrast to the products just discussed, the production of parts for lamps of glass (a major sector of the lamps and lighting fittings industry) by large U.S. manufacturers is highly automated. Some of the machines that manufacture glass blownware operate rapidly, producing between 50 and 70 glass globes, shades, and other items per minute. This type of production frequently occurs around-the-clock because a certain level of heat must be maintained at all times for production, and because high energy costs require that the company make the most efficient use of the heat that is used by huge tanks to produce both the "hard" glass (i.e., hard to melt because of the very high temperature required) and "soft" glass (easy to melt because of the lower temperature required).

Certain manufacturers produce a wide range of products (e.g., a combination of incandescent,

fluorescent, low-voltage downlighting, and track lamps and lighting fittings) that require production that has both labor and capital-intensive processes. The early stages of production may lend themselves to automated processing to produce a large volume of certain standard components of a particular line of lamps and lighting fittings. However, later stages of production may involve labor-intensive activities by employees such as assembly, adjustments needed for product differentiation, and testing.

One of the most important developments in the U.S. lamps and lighting fittings industry has been a consolidation resulting from a series of mergers and acquisitions during 1986-90. One of the largest recent acquisitions was the 1989 acquisition of Emerson Electric Company's Day-Bright commercial and industrial lighting unit by industry giant, Thomas Industries, Inc., which dominates the U.S. commercial and industrial lighting market.

Consolidation within the lamps and lighting fittings industry can have significant short term and long-term effects. In the short term, consolidation can create problems among sales representatives who suddenly find themselves handling competitive lines and different sales packages. In addition, the acquisition of lighting companies by financial holding companies can as in other industries, result in mismanagement and financial troubles.¹ Holding companies frequently lack experience with the lighting industry and/or have tried to juggle too many different types of companies simultaneously.

However, in the longer term, mergers and acquisitions, especially those between lighting companies, can also offer substantial advantages to companies. Some of the leading lamps and lighting fittings manufacturers have acquired many smaller companies, and have combined their strengths with those of the acquired companies to manage the resulting operations effectively and profitably. Furthermore, mergers between lamps and lighting fittings companies can allow these companies to become more competitive by widening product lines, which in turn leads to more volume-driven production and, ultimately, to greater economies of scale.² This, in turn, affords more opportunities for automation.

As shown in figure 1, the marketing of lamps and lighting fittings occurs through several distinct distribution channels. According to some industry surveys, furniture stores account for as much as 36 percent of lamps and lighting fittings sales and are viewed as the channel with the greatest potential for sales growth. Large furniture chains such as Levitz and Seaman's, and lifestyle specialists like IKEA and Conran's, have emerged as major distributors of lamps and lighting fittings.

¹ Statement made by representative of Day-Brite Lighting Division of Emerson Electric Co. during field visit, May 19, 1988.

² *Ibid.*

Lighting specialty showrooms, national retailers, home centers, and hardware stores comprise an especially sophisticated and aggressive group of lighting and accessories retailers. A rise in the number of retail outlets in recent years has intensified competition in the industry as more retailers vie for the same consumer. Consequently, although the lighting industry has traditionally invested little in promotion and advertising to the end-user (compared with the much larger furniture industry), lighting retailers are becoming more aggressive in promoting lamps and lighting fittings to customers who have become increasingly sophisticated and demanding.

Lighting specialty showrooms emphasize the value of their individual service and product expertise to end-users. Home centers specialize in offering reduced prices and self-service. National retailers, led by JC Penney, have had increasing sales in lamps, lighting fittings, and accessories because of the broad variety of products that they offer.³

Department stores have been traditionally an important distribution channel for lighting fittings and accessories. A shakeout in the industry resulting in the closing of some major department stores has reduced the number of vendors and subsequently contracted the volume of sales of lamps and lighting fittings handled by this channel.⁴ Also, many department stores have reduced their selection and inventory of lamps and lighting fittings because they have not been able to compete with the prices offered by discount-oriented mass merchants.

Most research and development efforts by the lamps and lighting fittings industry have focused on progressive improvements and refinements in design and also in function to complement and enhance increasingly energy-efficient light sources (bulbs). For example, U.S. lamps and lighting fittings manufacturers have responded to the development of halogen bulbs, which are brighter and last longer than ordinary light bulbs. They have created new features and adjusted the dimensions of lamps and lighting fittings to make the most efficient use of the light emanating from these improved bulbs.

The U.S. Environmental Protection Agency (EPA) estimates that generating electricity for lighting accounts for 20 to 25 percent of all electricity consumed in the United States and 40 percent of electrical use in commercial buildings. The development of energy-efficient lighting designs and technologies that can reduce energy consumption while also delivering better quality lighting has become a key concern of leading lamps and lighting fittings manufacturers. Some companies have announced plans to accelerate development of new lines of energy-saving fixtures over the next 2 years.

³ *Ibid.*

⁴ "Lighting and Accessories Outshine Furniture at Retail," *HFD*, Nov. 27, 1989

To encourage the use of energy-efficient lighting equipment including lamps and lighting fittings "wherever it is profitable,"⁵ in 1990, the EPA launched its "Green Lights" program. Corporations that join the Green Lights program agree to survey their facilities and to install lighting systems composed of both energy-efficient bulbs and lamps and lighting fittings that will maximize energy savings without sacrificing corporate profits. The corporations also agree to complete lighting upgrades within 5 years and to document improvements. The EPA, in turn, will work closely with the lighting industry (which includes the lamps and lighting fittings industry) to offer substantial technical support to Green Light partners. As of December 1990, this voluntary, nonregulatory program had 20 corporations as partners including Amoco, Bechtel, General Dynamic, Gillette, and Polaroid. The lighting industry will keep EPA informed about its products, help to clarify the needs of lighting systems installers, and identify and upgrade export systems.⁶

Industry sources believe that if the Green Lights program is successful, and if energy-efficient lighting equipment, including lamps and lighting fittings, are used everywhere possible (without sacrificing profits), the electricity required for lighting will decline by 50 percent and aggregate national electricity demand will fall by more than 10 percent.

Although most research and development in the lighting industry has focused on improving design and increasing energy efficiency, some companies are exploring a "revolutionary" lighting innovation being developed, the concept of delivering light from a central source.⁷ This new system called a "light engine" has a powerful light source that acts as a "reservoir" from which light is siphoned through fiber optics and optical pipes (i.e., hollow plastic tubes with mirrorlike interior surfaces) to wherever it is needed with minimal loss in intensity. This system of central lighting is expected to eliminate the need for fixtures and electrical outlets for lamps and thereby is expected to improve the quality and safety of lighting products. Other expected future applications for central lighting include the installation of light reservoirs in the basements of homes from which light would be channeled into all the rooms via fiber optics.

Despite its promising future, the concept of central lighting has numerous hurdles to overcome, including a dearth of suppliers willing to handle the substantial amount of custom work required to develop it. Consequently, its impact on the lighting industry is not expected to be seen immediately.

During 1986-90, the number of U.S. firms involved in joint ventures, foreign investments, and acquisitions

⁵ *Lighting Design and Application*, Feb. 1991.

⁶ *Ibid.*

⁷ Kuma Naj, Amal, "Lighting Researchers Aim to Show Bulbs and Fixtures Belong in the Dark Ages," *Wall Street Journal*, Feb. 22, 1991.

grew. In late 1989, Lithonia Lighting, a major U.S. lighting manufacturer that had been exporting about one percent of its production to Canada, acquired York Lighting, a Canadian company. In the spring of 1990, Thomas Industries Inc. formed a joint venture with Schreder Lighting of Brussels, Belgium, to manufacture and market tunnel lighting products. Thomas will use design and technology developed by Schreder to manufacture the products in the Thomas plant in Milan, IL. Thomas expects this arrangement to accelerate its opportunities to market an expanded high-quality line of tunnel lighting products.

Like companies in other U.S. industries, some lamps and lighting fittings firms (e.g., Cooper Industries and Westwood Lighting⁸) have shifted certain production activities to maquiladora operations⁹ in Mexico to take advantage of lower labor costs to remain competitive with low-priced lamps and lighting fittings imported from the Far East.

Consumer Characteristics and Factors Affecting Demand

U.S. consumption of lamps and lighting fittings is linked primarily to the level of new U.S. construction activity and of retrofitting or modernization work, and indirectly to interest rates, the availability of credit, and the general health of the U.S. economy. Demand by architectural contractors for special effects and new uses of lighting has also recently affected (albeit to a smaller degree) the consumption of lamps and lighting fittings.

Quality, workmanship, price points, and style set by fashion trends in architecture and interior design are the most important determinants of consumer demand for specific types of lamps and lighting fittings. Concern about the environment has also begun to motivate a small but expanding number of consumers to buy energy-efficient lamps and lighting fittings.

In addition, some industry experts believe that changes in the economy influence consumer preferences. For example, some lamp vendors claim that the onset of an economic recession in 1990 caused a resurgence in consumer preference for lamps and lighting fittings containing brass. According to one industry source, "the richness of the metal always adds

⁸ Westwood Lighting is reportedly the nation's third-largest manufacturer of handcrafted portable lamps and lighting fittings, with annual sales of more than \$25 million.

⁹ "Maquiladora" operations in Mexico assemble and/or process goods for export to foreign markets (usually the United States). Imported machinery, components, and materials enter Mexico free of duty but under bond—which is returned when the product and/or machinery is exported. Maquiladoras are either subsidiaries of foreign companies (usually U.S. firms) or Mexican firms performing contract assembly for foreign firms. Over 90 percent of the components used in maquiladora assembly operations are made in the United States. No U.S. duty is applied to the value of U.S.-made components contained in imports from maquiladora operations.

to whatever the product is People always associate metals with a substantial item."¹⁰ Thus, during times of economic uncertainty, consumers reportedly feel more comfortable buying lamps and lighting fittings containing "basic" metals such as brass, which they believe will last longer.

Like other fashion- or style-driven products, lamps and lighting fittings undergo cycles of rising and waning popularity. Industry sources report that high-tech and contemporary lamps are now in the "fall and winter of their life cycle" and "are facing a period of transition as traditional merchandise continues to grow in popularity."¹¹ Track lighting had been in high demand in the 1980s, but it began slipping in popularity in favor of recessed lighting by the end of that decade. Much of this decline in popularity for track lighting has been attributed to its widespread copying by foreign manufacturers. As track lighting became common, this method of lighting lost its appeal to many customers, which accelerated the life cycle of the product.

In the past, concern about style was limited to consumers of high-end lamps and lighting fittings. However, lamp and lighting fittings manufacturers report that in the past few years, a larger share of consumers of lamps and lighting fittings have become increasingly sophisticated and concerned about the style and design of the lamps and lighting fittings they buy. A survey conducted by a major lighting company revealed that in the portable, residential lamps and lighting fittings market, for example, "more than 80 percent of consumers indicated that design was the most important consideration when buying a lamp."¹²

FOREIGN INDUSTRY PROFILE

Taiwan, China, Thailand, Mexico, and Korea are the major foreign producers of lamps and lighting fittings. The dominant competitive advantage of these top five producers over U.S. manufacturers has been lower labor costs. The majority of U.S. imports of lamps and lighting fittings are composed of lightweight, simply designed, residential lighting fittings, and Christmas tree lighting sets, which require labor-intensive production processes.

Although Taiwan remained the leading source of imports for the United States in 1990, U.S. imports from Taiwan plummeted by 13 percent between 1989 and 1990. Taiwan lost much of its market share to China whose imports more than doubled. This shift has resulted probably (1) from a decline in the price competitiveness of imports from Taiwan after its loss of GSP eligibility in 1989, (2) a surge in labor costs in

¹⁰ "Demand for Basics to Boost Brass Lamp Business in '91," *Accessories Today*, Jan. 14, 1991.

¹¹ "High-Tech Enters Twilight," *HFD, The Weekly Home Furnishings Newspaper*, Dec. 10, 1990, p. 25.

¹² "Lamp vendors bank on fashion: Style and service driving forces as competition heats up at retail," *Furniture Today*, June 20, 1988, p. 10.

Taiwan, and (3) an appreciation of the Taiwan dollar relative to the U.S. dollar. Also, increased production of lamps and lighting fittings in China may have been stimulated by China's exceptionally low labor costs relative to its Asian neighbors, and the possible transfer of certain production operations from Taiwan to China because of these lower labor costs. China's status as a most-favored-nation (MFN) trading partner with the United States has also allowed it to rapidly expand its exports to the United States.

Although the quality of foreign-manufactured lamps and lighting fittings from the Far East tended to be poorer than U.S.-made products in the past, the quality of imports from the Far East has improved significantly.¹³ In particular, Taiwan has become aware of the need to compete in the higher-end sector of the U.S. market and has been rapidly improving the quality of its products.

Historically, Mexico has been a competitive supplier of glass lamps and lighting fitting parts, such as globes, shades, and chimneys. These goods are produced in various types of manufacturing operations ranging from small hand shops to large, highly automated plants such as those belonging to Vitrocrisa, a major Mexican manufacturer of glass products. Relatively low labor costs plus the devaluation of the peso (which accelerated in 1987) made these and other lamps and lighting fittings products highly price competitive compared with those manufactured in the United States. Some U.S. manufacturers of handmade glass lamps and lighting fittings attribute the decline of their industry to the rise in imports of these products from Mexico.

Although European manufacturers are less significant suppliers of U.S. imports of lamps and lighting fittings, they are often ranked as world leaders in lamps and lighting fittings production. European manufacturers are known for specializing in detail work and producing state-of-the-art, high-technology lamps and lighting fittings usually geared to the higher-end market. Because European producers do not have cost advantages over comparable U.S.-made products, penetration of the U.S. market by European competitors is based on factors such as product distinction or "brand-name" recognition. Trade between the United States and the members of the European Community in these goods has historically been limited. Low labor cost countries have penetrated markets in both the United States and Europe for products requiring labor-intensive production.

U.S. TRADE MEASURES

Table 1 shows the rates of duty (as of January 1, 1991), that apply to imports of lamps and lighting fittings under the Harmonized Tariff Schedule of the United States (HTS). The table shows the column 1 general duty rates and column 1 special (see appendix A) duty rates.

¹³ Statement of a representative of Quoizel Lighting, during field visit, Feb. 5, 1991.

Table 1
Lamps and lighting fittings: Harmonized Tariff Schedule subheading; description; U.S. col. 1 rate of duty as of Jan. 1, 1991; U.S. exports, 1990; and U.S. imports, 1990

HTS subheading	Description	Col. 1 rate of duty as of Jan. 1, 1991		U.S. exports, 1990	U.S. imports, 1990
		General	Special ¹		
<i>Million dollars</i>					
9405.10.40	Chandeliers and other electric ceiling or wall lighting fittings, excluding those used for lighting public open spaces, of brass	5.7%	Free (A,C,E,IL) 3.3% (CA)	19	93
9405.10.60	Chandeliers and other electric ceiling or wall lighting fittings, excluding those used for lighting public open spaces, of base metal other than brass	7.6%	Free (A,C,E,IL) 5.3% (CA)	42	123
9405.10.80	Chandeliers and other electric ceiling or wall lighting fittings, excluding those used for lighting public open spaces, other than of base metal	3.9%	Free (A,C,E,IL) 2.7% (CA)	7	81
9405.20.40	Electric table, desk, bedside or floor-standing lamps of brass	3.7%	Free (A,E,IL) 2.5% (CA)	14	52
9405.20.60	Electric table, desk, bedside or floor-standing lamps of base metal other than brass	7.6%	Free (A,E,IL) 5.3% (CA)	12	118
9405.20.80	Electric table, desk, bedside or floor-standing lamps, other than of base metal	3.9%	Free (A,E,IL) 2.7% (CA)	3	65
9405.30.00	Lighting sets used for Christmas trees	8.0%	Free (A ² ,E,IL) 5.6% (CA)	3	305
9405.40.40	Electric lamps and lighting fittings of brass, nesi	5.7%	Free (A,E,IL) 3.3% (CA) ³	18	25
9405.40.60	Electric lamps and lighting fittings of base metal other than brass, nesi	7.6%	Free (A,E,IL) 5.3% (CA) ³	36	50
9405.40.80	Electric lamps and lighting fittings, other than of base metal, nesi	3.9%	Free (A,E,IL) 2.7% (CA) ³	36	91
9405.50.20	Incandescent lamps designed to be operated by propane or other gas, or by compressed air and kerosene or gasoline	3.7%	Free (A,E,IL) 2.5% (CA)	3	4
9405.50.30	Nonelectrical lamps and lighting fittings nesi, of brass	5.7%	Free (A,E,IL) 3.3% (CA)	3	22
9405.50.40	Nonelectrical lamps and lighting fittings nesi, other than of brass	7.6%	Free (A,E,IL) 5.3% (CA)	5	52
9405.60.20	Illuminated signs, illuminated name plates and the like, of brass	5.7%	Free (A,C,E,IL) ⁽⁴⁾ 3.3% (CA)		1
9405.60.40	Illuminated signs, illustrated name plates and the like, of base metal other than brass	7.6%	Free (A,C,E,IL) 5.3% (CA)	14	3
9405.60.60	Illuminated signs, illuminated name plates and the like, other than of base metal	5.3%	Free (A,C,E,IL) 3.7% (CA)	2	6
9405.91.10	Globes and shades of lead crystal glass	14%	Free (A,E,IL) 9.8% (CA)	⁽⁴⁾	1
9405.91.30	Globes and shades of glass, excluding lead crystal	14%	Free (A ⁵ ,E,IL) 9.8% (CA)	8	29
9405.91.40	Chimneys of glass	15%	Free (A,E,IL) 10.5% (CA)	1	2
9405.91.60	Parts of lamps and lighting fittings, of glass, other than globes, shades, and chimneys	6.5%	Free (A,E,IL) 4.5% (CA) ³	1	56
9405.92.00	Parts of lamps and lighting fittings, of plastics	5.3%	Free (A,C,E,IL) 3.7% (CA) ³	14	12
9405.99.20	Parts of lamps and lighting fittings, of brass	5.7%	Free (A,C,E,IL) 3.7% (CA) ³	15	31

Table 1
Lamps and lighting fittings: Harmonized Tariff Schedule subheading; description; U.S. col. 1 rate of duty as of Jan. 1, 1991; U.S. exports, 1990; and U.S. imports, 1990

HTS subheading	Description	Col. 1 rate of duty as of Jan. 1, 1991		U.S. exports, 1990	U.S. imports, 1990
		General	Special ¹		
9405.99.40	Parts of lamps and lighting fittings, other than of brass, glass, or plastics, nesl	7.6%	Free (A,C,E,IL) 5.3% (CA) ³	60	89

¹ Programs under which special tariff treatment may be provided, and the corresponding symbols for such programs as they are indicated in the "Special" subcolumn, are as follows: Generalized System of Preferences (A); Automotive Products Trade Act (B); Agreement on Trade in Civil Aircraft (C); United States-Canada Free-Trade Agreement (CA); Caribbean Basin Economic Recovery Act (E); and United States-Israel Free-Trade Area (IL).

² Thailand has been proclaimed by the President as not eligible for GSP treatment for articles included under this HTS subheading.

³ Duty is temporarily suspended (subheading 9905.94.10) on certain dental lamps and parts thereof originating in the territory of Canada.

⁴ Less than \$500,000.

⁵ Mexico has been proclaimed by the President as not eligible for GSP treatment for articles included under this HTS subheading.

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

The 1991 U.S. general rate of duty for lamps and lighting fittings ranged from a low of 3.7 percent for electric table, desk, bedside, and floor-standing lamps and for incandescent lamps designed to be operated by propane or other gas, or by compressed air and kerosene or gasoline; to a high of 15 percent for chimneys of glass. The aggregate trade-weighted, average rate of duty for all lamps and lighting fittings was 5.7 percent in 1990.

Imports of lamps and lighting fittings under HTS heading 9405 from designated beneficiary countries enter free of duty under the Generalized System of Preferences (GSP), the Caribbean Basin Economic Recovery Act (CBERA), and under the free trade agreement with Israel. U.S. imports of lamps and lighting fittings for use in aircraft, entering under subheadings 9405.10.40-9405.10.80, 9405.60.20-9405.60.60, and 9405.92.00-9405.99.40 also enter free of duty under the Agreement on Trade in Civil Aircraft. Under the U.S.-Canada Free-Trade Agreement, annual staged reductions in tariffs on bilateral trade in lamps and lighting fittings will occur until 1997. Effective January 1, 1998, all duties between the United States and Canada will be reduced to zero.

Effective July 1, 1990, HTS subheading 9405.91.20 (globes and shades of glass) was divided into subheadings 9405.91.10, globes and shades of lead crystal glass, and 9405.91.30, globes and shades of glass, excluding lead crystal. Lead crystal glass is not manufactured in the United States. This distinction allows for the duty-free entry of imports of lead crystal glass globes and shades into the United States from Mexico while maintaining noneligible status for duty-free treatment under the GSP for imports from Mexico of globes and shades of glass other than lead crystal. Globes and shades of glass have relatively high rates of duty and are produced very competitively by foreign manufacturers, especially producers in Mexico and Taiwan.

There are no known U.S. nontariff trade measures that significantly influence trade in the products in this report.

FOREIGN TRADE MEASURES

Tariff Measures

In general, the duty rates on lamps and lighting fittings imposed by the United States' leading trading partners tend to be higher than U.S. duty rates. However, in recent years, these rates have been generally declining. Effective January 1, 1991, Canada's rates of duties on lamps and lighting fittings range between a low of 6.4 percent on motion picture or theatrical spotlights, to a high of 10.5 percent for gas lamps and lighting fittings and parts of gas lighting fittings other than of glass or plastics. As previously discussed, the duty rates in both Canada and the United States will continue to be reduced under the U.S.-Canada Free-Trade Agreement and are scheduled to become zero by January 1, 1998.

Since 1985, Mexico has implemented a broad tariff reduction program and has consolidated the number of tariff levels. In December 1987, Mexico unilaterally set the maximum applied tariff at 20 percent. The average trade-weighted Mexican tariff on imports of lamps and lighting fittings in 1990 was 20 percent. However, negotiations are now underway on a U.S.-Mexico Free-Trade Agreement which, like the U.S.-Canada Free-Trade Agreement, would reduce tariffs of both countries, presumably during a transition period, to zero.

Japan has a 2-percent average tariff rate on industrial products, one of the lowest in the world. It still imposes high tariff rates on certain manufactured products such as lamps and lighting fittings. In 1991, Japan's rate of duty on most lamps and lighting fittings was 20 percent, except for a 30-percent rate of duty on illuminated signs and on lighting parts of plastics.

Saudi Arabia, the fourth-leading U.S. export market for lamps and lighting fittings has an average tariff rate of 12 percent. The rates of duty on lamps and lighting fittings imposed by the European Community range between 5 and 10 percent.

Despite the generally higher tariff rates imposed by the major trading partners of the United States, tariff rates in general have been a relatively minor constraint on U.S. exports of lamps and lighting fittings. Transport and freight charges, breakage problems, and stiff price competition from overseas manufacturers have had a much greater impact in limiting U.S. exports.

Nontariff Measures

Foreign nontariff barriers to U.S. exports have been defined as "government laws, regulations, policies, or practices (excluding tariffs and other import charges) that either protect domestic producers from foreign competition or artificially stimulate exports of particular domestic products."¹⁴ Canada, the largest export market of the United States for the products in this report, has no known nontariff measures that have significantly restricted Canadian imports of U.S.-made lamps and lighting fittings.

U.S. MARKET

Consumption

U.S. consumption of lamps and lighting fittings increased at an average annual rate of 6 percent, from \$7.5 billion in 1986 to \$9.4 billion in 1990 (see table 2). The overall steady growth in consumption during the 1986-90 period can be attributed to a generally strong economy, a flurry of remodeling and renovations, and increased interest by architects, interior decorators, and others in special effects and new uses of lighting. However, by mid-1990, the onset of the recession led to a reduction in commercial construction activity and housing starts, and caused consumption to slow.

¹⁴ *The 1990 National Trade Estimate Report on Foreign Trade Barriers*, Office of the United States Trade Representative.

Table 2

Lamps and lighting fittings: U.S. shipments, exports of domestic merchandise, imports for consumption, and apparent U.S. consumption, 1986-90

Year	U.S. shipments ¹	U.S. exports	U.S. imports	Apparent U.S. consumption	Ratio of imports to consumption
	Million dollars				Percent
1986	7,000	139	674	7,535	9.0
1987	7,700	157	838	8,381	10.0
1988	8,000	203	1,020	8,817	11.6
1989	8,300	246	1,243	9,297	13.4
1990	8,400	315	1,311	9,396	14.0

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

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

The overall rise in consumption during 1986-90 was met by an increase in both U.S. production and imports. However, imports increased at a faster rate than U.S. production. The ratio of imports to apparent consumption rose from 9 percent in 1986 to 14 percent in 1990. The U.S. residential lamps and lighting fittings sector has been the sector most heavily penetrated by imports. These lamps and lighting fittings are easier and less expensive to ship because they are lighter in weight and less fragile than other types of lamps and lighting fittings. The low price of imports from Taiwan and other Asian countries has allowed them to be very competitive in a part of the market made up largely of lower end, standardized, easily substitutable products. For example, import penetration by Christmas tree lights was particularly substantial during 1986-90.

Several important changes in consumption trends occurred during 1986-1990. One of the most significant of these has been the evolution of halogen lamps and lighting fittings from exclusive niche products to a rapidly expanding and increasingly competitive market. The development of halogen bulbs was an important innovation for the U.S. lighting industry because of the higher purity of the light and because the life of the bulbs is considerably longer than standard bulbs. Lamps and lighting fittings designed to complement halogen bulbs were subsequently developed. Until the end of the 1980s, halogen lamps were sold primarily in the high-end market for prices between \$200 and \$600 dollars, beyond the price range of the average consumer. Consequently, according to lighting manufacturers and dealers, halogen lamps and lighting fittings accounted for less than 5 percent of the portable lamps and lighting fitting market during most of the 1980s.

"Halogen grew in popularity as a result of the ground-breaking design of contemporary specialists. It became the stylish thing to have."¹⁵ The increase in popularity of halogen lamps prompted lighting manufacturers in Taiwan and China to start manufacturing and exporting inexpensive halogen lamps to the United States.

¹⁵ Major, Brian, "Halogen's Hotter than Ever," *HFD-The Weekly Home Furnishings Newspapers*, Jan. 7, 1991.

Lighting specialists estimate that halogen lamps now comprise about 28 percent of the market for portable lamps and lighting fittings. Halogen lamps now range in retail price from as low as \$19.99 for desk lamps to \$129.00 for floor lamps. In addition, these lamps are not only available in contemporary styles, but also come in traditional styles and therefore appeal to a broader market. Some industry representatives speculate that within a few years, halogen lamps could occupy as much as 75 percent of the lamps and lighting fittings market.

Another key trend in consumption of lamps and lighting fittings is a shift toward more energy-efficient lamps and lighting fittings. Concern about the environment and energy conservation has prompted Federal and State initiatives and legislation that both indirectly and directly encourage lighting manufacturers to develop and consumers to buy more energy-efficient lamps and lighting fittings. For example, the industry has attributed its recent emphasis on accelerating the development of energy-efficient lamps and lighting fittings, in part, to an expected 20-percent rise in electric utility rates resulting from the Federal Government's acid-rain legislation. Also, as previously discussed, the EPA's Green Lights program is encouraging lighting manufacturers to develop more energy efficient products. Cash incentives offered by utility companies in some States have motivated consumers to buy energy-conserving lamps and lighting fittings.

Another recent trend in the consumption of lamps and lighting fittings has been the renewed interest of consumers in brass lamps or lamps containing brass and other materials. In addition to the increased popularity of lamps made of traditional materials such as brass, lamps that are Victorian, neo-classic, romantic, and ornate in style have also increased in popularity.

Other lamps and lighting fittings that have enjoyed a recent increase in demand and popularity include outdoor architectural lamps and lighting fittings, Christmas tree lighting sets, emergency lighting systems, recessed lamps and lighting fittings, and more sophisticated dimming products. Although contemporary, high-tech lamps and lighting fittings

continue to maintain a solid niche that is reportedly driven by efficient, technically advanced new products that combine high functional value at relatively low cost, this category of lamps and lighting fittings has lost some market share to the traditional lighting sector.

In general, U.S. manufacturers have several important competitive advantages in the U.S. market over imported products, particularly in the higher end and commercial sectors. In these sectors, customer service and the quality and reputation of the products are crucial to success. The width of product lines is also important because many customers have indicated that they prefer to buy entire packages of lamps and lighting fittings from a single supplier. For certain niches of the lighting market, such as architectural lighting, the ability to offer custom-designed fittings can be a significant advantage. U.S. manufacturers maintain a competitive edge over foreign manufacturers in these areas. There are well-developed U.S. distribution networks which U.S. manufacturers heavily rely on to serve their customers effectively and efficiently. This makes another advantage U.S. manufacturers have over their foreign competitors.

The onset of the recession in mid-1990 has had at least a short-term effect on the products now being introduced into the U.S. market place by lighting manufacturers. Fewer leading manufacturers are introducing new products. Instead, they are concentrating on extending or modifying existing product lines.

Production

U.S. producers' shipments of lamps and lighting fittings increased from an estimated \$7.0 billion in 1986 to approximately \$8.4 billion in 1990, annually averaging about a 5-percent rise during the period. This increase reflects the overall strength of the economy throughout most of the period, and a resulting general rise in housing starts until the beginning of the recession in 1990. In addition, the creation of new uses and special applications for lighting by architects and interior designers also helped to boost U.S. shipments. Residential lamps and lighting fittings comprised approximately 25 percent of total U.S. production in 1990. Roughly three-quarters of U.S. production was accounted for by commercial lamps and lighting fittings (which includes institutional and industrial lighting, and electric signs and lighting equipment).

Imports

U.S. imports of lamps and lighting fittings increased at an average annual growth rate of 18 percent during 1986-90, faster than that of producers' shipments, rising from \$0.7 billion in 1986 to \$1.3 billion in 1990. Consequently, imports' share of U.S. consumption rose from 9 percent in 1986 to 14 percent in 1990 (see table 2, figure 2).

Imports of many types of lamps and lighting fittings rose significantly over the period, with the

largest absolute increase being that of lighting sets of a kind used for Christmas trees, which more than doubled from \$122 million in 1986 to \$305 million in 1990. Imports under several other lamps and lighting fittings categories also surged. U.S. imports of electric lamps and lighting fittings, other than of brass or other base metal, jumped from \$9 million in 1986 to \$91 million in 1990. Imports of lamps parts, other than of brass, glass, or plastics, rose from \$40 million in 1986 to almost \$89 million in 1990. Of total U.S. imports of lamps and lighting fittings in 1990, residential lamps and lighting fittings accounted for 48 percent of U.S. imports; Christmas tree lighting sets accounted for 23 percent; lighting parts accounted for 17 percent; and commercial lamps and lighting fittings accounted for the remaining 12 percent.

The relatively light weight, small size, and durability of residential lamps and lighting fittings and Christmas tree lighting sets makes them easier and less expensive to ship and better suited to international trade than other types of lamps and lighting fittings. Furthermore, because production of these products is highly labor intensive, foreign manufacturers that have access to substantially lower cost labor have a significant advantage compared with U.S. producers. Tables showing U.S. imports of nine categories of lamps and lighting fittings, including the principal sources of these imports during 1986-90, are in appendix B.

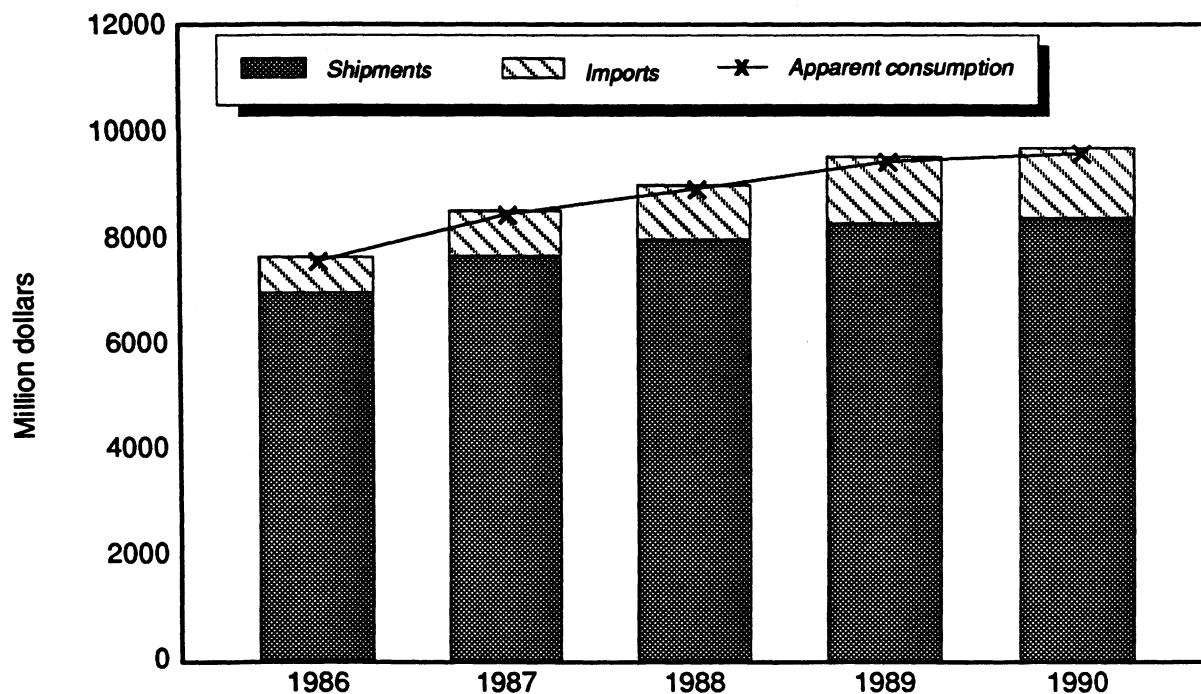
Principal Import Suppliers

Taiwan is by far the leading foreign supplier of lamps and lighting fittings to the United States, accounting for 41 percent of total U.S. imports of lamps and lighting fittings in 1990. China supplied 10 percent of U.S. imports, Thailand 9 percent, and Mexico and Korea 6 percent each.

Taiwan, the leading supplier to the United States during 1986-90, provided imports valued at \$534 million in 1990 (see table 3, figure 3). However, Taiwan's share of U.S. imports declined during the period from 53 percent to 41 percent. A major portion of Taiwan's lost share of U.S. imports was gained by China, Thailand, and Mexico. In addition, although Italy, Canada, Korea, and Hong Kong followed Taiwan as leading suppliers of imports to the United States in 1986 and their imports continued to grow during the period, they also lost substantial market share to China, Thailand, and Mexico.

The slide in Taiwan's share of imports is attributed to several developments in the late 1980s. The price of imports from Taiwan rose because of Taiwan's loss of GSP eligibility in 1989, and because of the appreciation of the Taiwan dollar relative to the U.S. dollar. Consequently, there has been a rise in imports from other, lower cost suppliers. Taiwan's share of U.S. imports also dropped because rising wage rates and a shrinking supply of assembly labor have motivated

Figure 2
Lamps and lighting fittings: U.S. Imports, producers' shipments¹, and apparent consumption²



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

² Apparent Consumption = Producers' Shipments + Imports-Exports.

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

numerous manufacturers in Taiwan to move their production facilities to foreign locations that have low cost labor.

China emerged as the second-leading source of U.S. imports of lamps and lighting fittings because (1) its large pool of exceptionally low-cost labor makes its products very price competitive and (2) the recent opening of the country to foreign investment permitted the establishment of foreign production facilities by neighboring countries that wished to take advantage of China's lower labor costs. U.S. imports of lamps and lighting fittings from China rose from \$1.9 million, or less than 0.05 percent of total U.S. imports in 1986 to \$130 million, or almost 10 percent of such imports in 1990 (see figure 3). Most of this increase was accounted for by U.S. imports of lighting sets for Christmas trees, which as previously discussed, require highly labor-intensive production.

Thailand was the third-largest supplier of U.S. imports of lamps and lighting fittings in 1990. Like China, Thailand shifted from supplying a negligible share, less than 0.05 percent, of U.S. imports in 1986 to supplying 9 percent in 1990. Also like China, most of this increase was dominated by imports of lighting sets for Christmas trees. Most of the rise in U.S. imports of Christmas tree lighting sets from Thailand occurred

between 1986, when U.S. imports totaled only \$102,000, and 1989, when they reached almost \$97 million. U.S. imports of Christmas tree lighting sets climbed more slowly between 1989 and 1990 after Thailand lost its GSP eligibility for these products. Low labor costs in Thailand have been the country's primary competitive advantage in manufacturing lamps and lighting fittings.

Imports from Mexico, the fourth-ranked supplier to the United States, more than quadrupled during 1986-90, rising from \$17 million in 1986 to almost \$77 million in 1990. Forty percent, or \$32 million, of the lamps and lighting fittings imported from Mexico into the United States in 1990 entered under a special classification provision, subheading 9802.00.80, of the HTS.¹⁶ This subheading provides special tariff treatment for eligible imported goods that contain U.S.-made components. Duty is applied on the value of the imported product minus the value of the U.S.-made components. The value of the U.S.-origin content of these imports totaled \$22 million in 1990. More than

¹⁶ For more detailed information on this special classification provision, see USITC, *Production Sharing: U.S. Imports Under Harmonized Tariff Schedule Subheadings 9802.00.60 and 9802.00.80, 1986-89*, USITC publication 2365, Mar. 1991.

Table 3

Lamps and lighting fittings: U.S. exports of domestic merchandise, imports for consumption, and merchandise trade balance, by selected countries and country groups, 1986-90¹

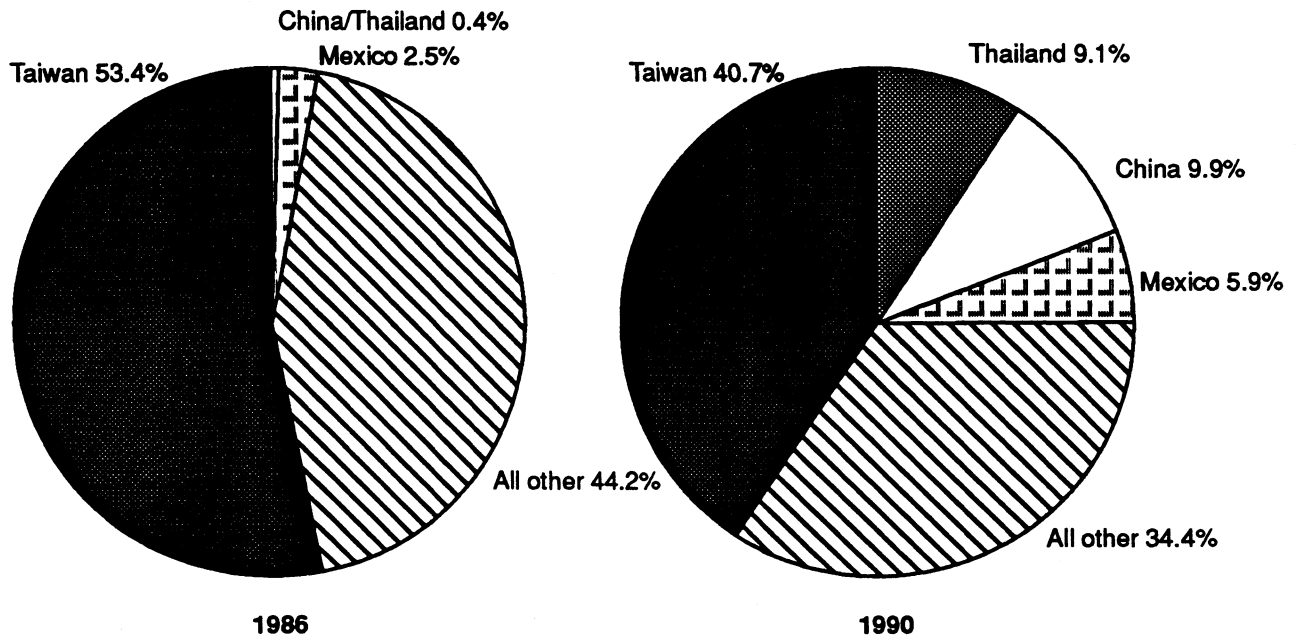
(Million dollars)

Item	1986	1987	1988	1989	1990
U.S. exports of domestic merchandise:					
Taiwan	4	3	4	4	6
Canada	36	38	48	55	111
Peoples Republic of China	1	2	1	1	1
Mexico	10	13	22	37	48
Thailand	0	0	1	1	1
Korea, Republic of	5	8	11	10	6
Italy	1	1	3	4	4
Hong Kong	2	2	4	4	4
Japan	9	9	9	14	19
Germany	6	5	6	4	6
All other	65	74	95	112	110
Total	139	157	203	246	315
EC-12	24	28	35	36	35
OPEC	21	19	25	34	30
ASEAN	5	4	9	7	9
CBERA	11	12	13	21	21
Eastern Europe	0	0	0	0	0
U.S. imports for consumption:					
Taiwan	358	462	508	616	534
Canada	38	47	53	38	42
Peoples Republic of China	2	6	22	60	130
Mexico	17	23	39	72	77
Thailand	1	3	26	100	119
Korea, Republic of	37	58	97	84	69
Italy	46	47	42	54	57
Hong Kong	33	33	34	41	43
Japan	30	30	39	19	22
Germany	30	33	36	30	34
All other	83	98	123	131	185
Total	674	838	1,020	1,243	1,311
EC-12	125	139	145	141	156
OPEC	0	0	0	0	1
ASEAN	3	6	36	117	157
CBERA	1	1	2	1	1
Eastern Europe	2	3	5	6	7
U.S. merchandise trade balance:					
Taiwan	-354	-459	-504	-612	-528
Canada	-2	-9	-5	17	69
Peoples Republic of China	-1	-4	-21	-59	-129
Mexico	-7	-10	-17	-35	-29
Thailand	-1	-3	-25	-99	-118
Korea, Republic of	-32	-50	-86	-74	-63
Italy	-45	-46	-39	-50	-53
Hong Kong	-31	-31	-30	-37	-39
Japan	-21	-21	-30	-5	-3
Germany	-24	-28	-30	-26	-28
All other	-18	-24	-28	-19	-75
Total	-535	-681	-817	-997	-996
EC-12	-101	-111	-110	-105	-121
OPEC	21	19	25	34	29
ASEAN	2	-2	-27	-110	-148
CBERA	10	11	11	20	20
Eastern Europe	-2	-3	-5	-6	-7

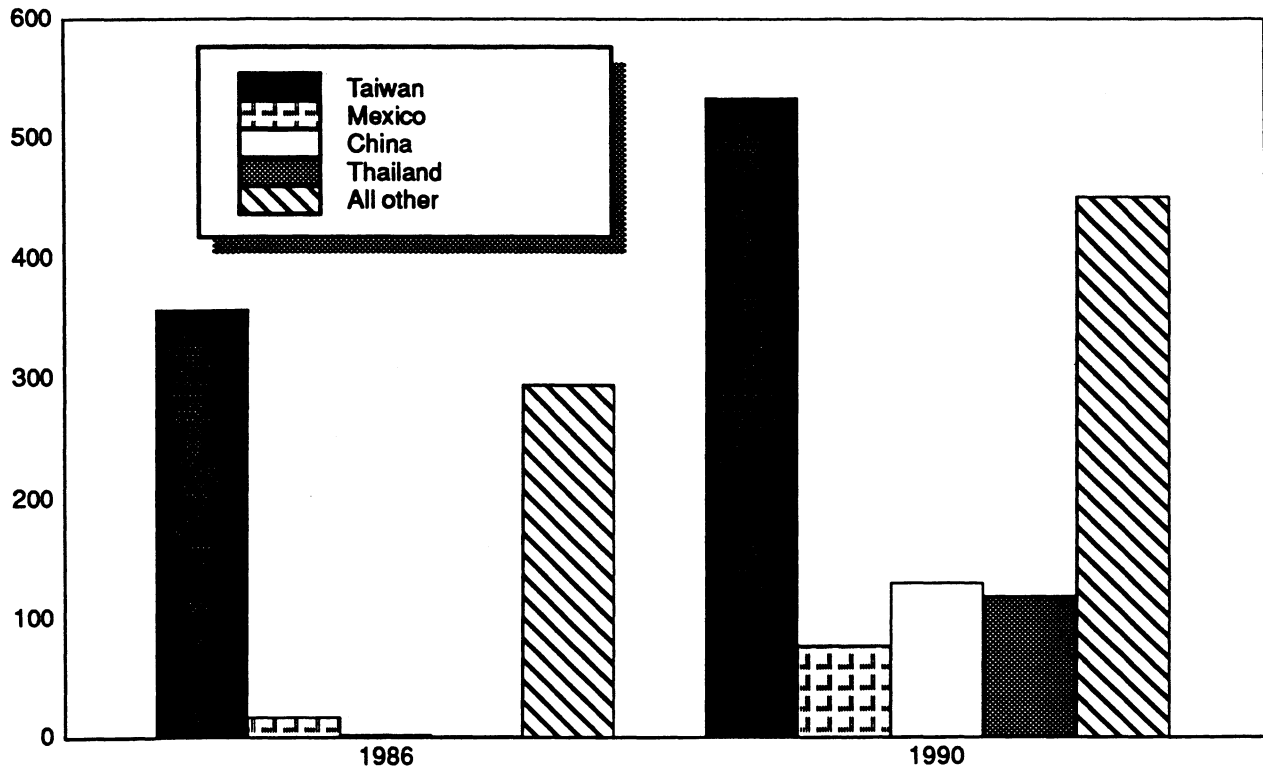
¹ Import values are based on customs values; export values are based on f.a.s. value, U.S. port of export. U.S. trade with East Germany is included in "Germany" but not "Eastern Europe."

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

Figure 3
Lamps and lighting fittings: U.S. imports from leading sources, by share of total and by value, 1986 and 1990



Thousand dollars



Source: Based on official statistics of the U.S. Department of Commerce.

half (\$19 million) of the lamps and lighting fittings imported from Mexico under HTS 9802.00.80 were chandeliers and other electric ceiling or wall lighting fittings of base metal other than brass (HTS 9405.10.60). Other electric lamps and lighting fittings (HTS 9405.40.80) and lighting sets of a kind used for Christmas trees (HTS 9405.30.00) also accounted for a substantial share of U.S. imports of lamps and lighting fittings imported under HTS 9802.00.80. Mexico's lower labor costs compared with those in the United States reportedly motivated a number of major U.S. lighting manufacturers to shift their labor-intensive assembly operations to Mexico to stay competitive with low-priced imports from the Far East.

The Mexican industry that produces parts for lamps of glass traditionally has been fairly competitive with those manufactured in the United States. Therefore, parts for lamps of glass accounted for 22 percent of all U.S. imports from Mexico and only a negligible amount (\$24,000) was imported from U.S. affiliated firms under HTS 9802.00.80 in 1990.

U.S. Importers

No one type of business dominated U.S. importers of lamps and lighting fittings. The largest importers in 1990 consisted of a combination of several large and medium-sized lamp and lighting fittings manufacturers (who import certain parts they do not wish to manufacture and who wish to supplement their product lines); major retailers were also significant importers of these products.

FOREIGN MARKETS

Foreign Market Profile

Until the mid-1980s, exporting was not a priority for U.S. lamp and lighting fitting manufacturers. High freight and shipping costs and the fragility of many of the types of lighting fittings¹⁷ in which U.S. manufacturers have been most competitive limited the volume of exports of these products. In addition, stiff competition from foreign manufacturers in producing price competitive, lightweight, residential lamps and lighting fittings, the types of products best suited to international trade, reportedly discouraged the U.S. industry from aggressively pursuing export markets for these products.

By setting up several new joint ventures, acquiring foreign subsidiaries, and establishing new contracts with foreign distributors, the U.S. industry significantly boosted the level of its export activities during 1986-90. Consequently, the share of total U.S. production accounted for by U.S. exports of lamps and lighting fittings rose from 2 percent in 1986 to 4 percent in 1990 (see table 2). The top export markets

¹⁷ Examples include neon signs, fluorescent tubes, and other similar products that can shatter easily.

for U.S. lamps and lighting fittings in 1990 were Canada, Mexico, Saudi Arabia, Japan, and the United Kingdom. Additional significant markets included other countries in Western Europe and the Far East (see table 3).

The U.S.-Canada Free-Trade Agreement which went into effect on January 1, 1989, is gradually reducing the import tariffs applied to lamps and lighting fittings exported between these countries. All duties are to be eliminated by 1998. U.S. exports of lamps and lighting fittings to Canada more than doubled between 1989 and 1990 as a result of (1) the U.S.-Canada Free-Trade Agreement, (2) the purchase in 1989 of York Lighting (a major Canadian lighting manufacturer) by Lithonia Lighting (a leading U.S. lamps and lighting manufacturer), and (3) the appreciation of the Canadian dollar relative to the U.S. dollar in 1990.

The elimination of additional barriers to trade within the European Community (EC) market after 1992 (e.g., elimination of internal customs frontiers) may help boost U.S. exports to that market. Some U.S. manufacturers have already begun or have stepped up their marketing activities in the EC market because they expect unification of the European Community to create freer movement for goods, services, people, and capital within the 12-country bloc. Several manufacturers participated for the first time in major European trade fairs such as the 1991 International Light Show, held in the United Kingdom, to introduce their products to that market. Unless the value of the U.S. dollar rises prohibitively relative to European currencies, the unification of the EC should encourage the growth of U.S. exports to that market. Industry sources state that the high quality of U.S. lamps and lighting fittings, in addition to a recent emphasis on styling, should appeal to the European consumer.

A free trade agreement with Mexico is expected to reduce and eventually eliminate duties on trade between both countries. During 1986-90, the volume of U.S. exports of lamps and lighting fittings to Mexico, especially parts, rose because a growing number of U.S. manufacturers began shipping lamps and lighting fittings components to production facilities in Mexico for low-cost assembly and return to the United States.

U.S. industry sources expect Japan to become an even more significant export market for lamps and lighting fittings from both the United States and Europe in the next few years. They attribute this potential to (1) a boom in private housing construction during the last few years in Japan; (2) a rise in real income and willingness to spend money by Japan's increasingly influential younger generation; and (3) a growing taste for Western design in interior decoration.

In contrast to the significant trade deficit of about \$1 billion in 1989 in lamps and lighting fittings experienced by the United States (table 3), the European Community in that year had a trade surplus of \$474 million.¹⁸ Switzerland was the leading export

¹⁸ Based on official statistics of the European Community.

market for EC exports of lamps and lighting fittings, absorbing \$140 million of EC exports (14 percent of the EC total). Austria and the United States followed as markets for EC exports at \$126 million and \$119 million, respectively, with shares of roughly 12 percent each. The United States accounted for only 8 percent (\$42 million) of EC imports of lamps and lighting fittings in 1989. The leading foreign suppliers to the EC market were Austria (22 percent), Taiwan (18 percent), and Sweden (11 percent). The United States was most competitive in the EC market in the supply of parts for lamps made of glass. The United States accounted for 15 percent of EC imports in this category in 1989 (Austria accounted for 38 percent) and this category accounted for one-third of total EC imports from the United States.

U.S. Exports

U.S. exports of lamps and lighting fittings rose from \$139 million in 1986 to \$315 million in 1990. The largest increase in U.S. exports during 1986-90 occurred between 1989 and 1990 when U.S. exports rose by \$69 million.

Principal products exported from the United States during 1986-90 were (1) electric lamps and lighting fittings, other than table, desk, bedside, or floorstanding lamps, which rose from \$39 million in 1986 to \$90 million in 1990; (2) parts for lamps and lighting fittings, other than of glass or plastic, which surged from \$18 million in 1986 to \$75 million in 1990; and (3) chandeliers and other electric ceiling and wall lighting fittings for commercial and institutional use, which jumped from \$8 million in 1986 to \$51 million in 1990.

Four-fifths of the rise in U.S. exports of lamps and lighting fittings between 1989 and 1990 was accounted for by exports to Canada, the leading U.S. export market. U.S. exports to Canada more than doubled, rising from \$55 million in 1989 to \$111 million in 1990 and accounting for 35 percent of total U.S. exports in the latter year (see table 3, figure 4). As discussed earlier, much of the rise in U.S. exports to Canada is attributable to the implementation of the U.S.-Canada Free-Trade Agreement, the acquisition of a Canadian lighting company by a major U.S. manufacturer, and the appreciation of the Canadian dollar relative to the U.S. dollar.

Mexico was the second leading destination for U.S. exports in 1990, which totalled \$48 million and included products sent to Mexico for assembly and

re-export to the United States. As discussed earlier, no duty is applied to the U.S.-origin content of U.S. imports from assembly plants in Mexico. Subtracting the U.S. content of imports from Mexico, net exports to Mexico totaled \$25 million in 1990.

The third-ranked recipient of U.S. exports of lamps and lighting fittings in 1990 was Saudi Arabia. Exports were valued at \$24 million compared to \$29 million the previous year. The fourth-ranked export market for U.S. lamps and lighting fittings was Japan, which received \$19 million in 1990 compared with \$14 million in 1989. U.S. exports to the United Kingdom declined to \$15 million from \$16 million in 1989.

Although exports grew during 1986-90 and are expected to expand further in the next few years, they are likely to continue to account for only a minor share of U.S. production for some time. The large growth in U.S. exports¹⁹ to Canada and Mexico (which absorbed half of total U.S. exports of lamps and lighting fittings in 1990) is a result in large part of the proximity of these two countries to the United States, similarities in consumer taste (particularly in Canada), rationalization of production between the United States and Canada, and the expansion of U.S. assembly operations in Mexico. However, the growth of export markets is still not an industry priority and it does not appear that this will change dramatically in the next few years. The large size of the U.S. domestic market, the continued high cost of freight and shipping, the strong competition in foreign markets from low-cost producers in lower cost products, the differences in foreign consumer tastes that limit the market for U.S.-made products, and other barriers to entering and establishing a major presence in many foreign markets make it likely that U.S. manufacturers will continue to focus principally on the U.S. domestic market.

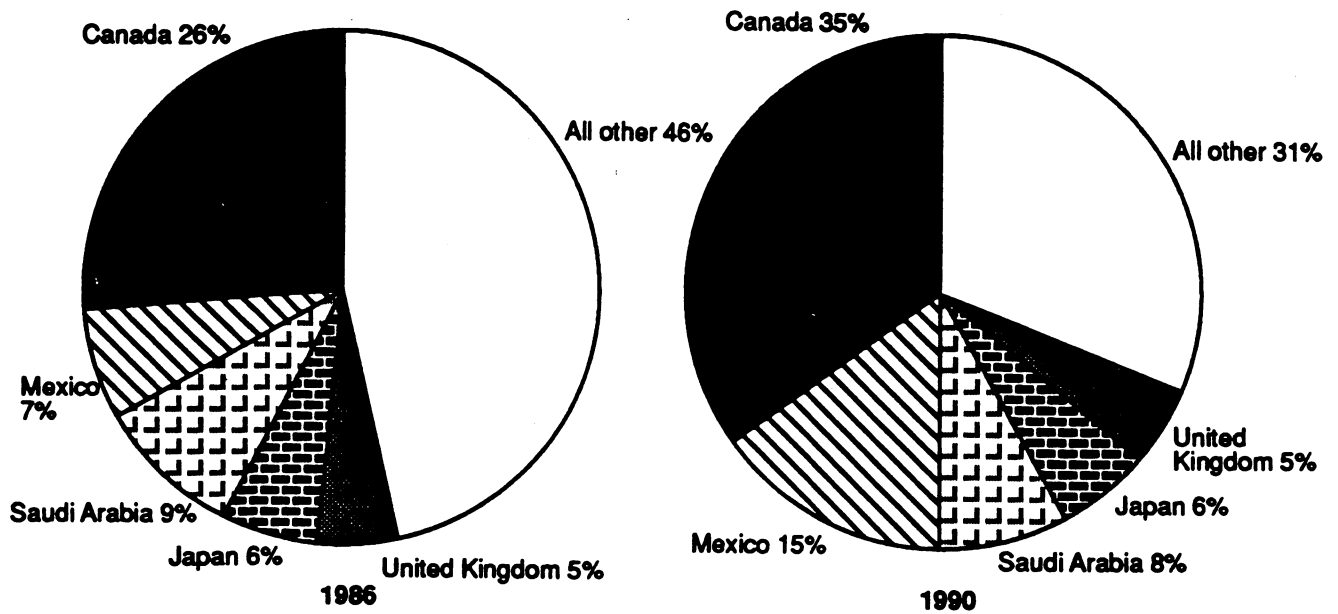
U.S. TRADE BALANCE

In 1990, the U.S. trade balance for lamps and lighting fittings recorded a deficit of \$996 million (table 3). The trade deficit widened beginning in 1986, when imports exceeded exports by \$535 million. A surge in imports of primarily low-end lamps and lighting fittings from Taiwan, Thailand, China, and Korea during 1986-90 was the major contributor to enlarging the U.S. trade deficit.

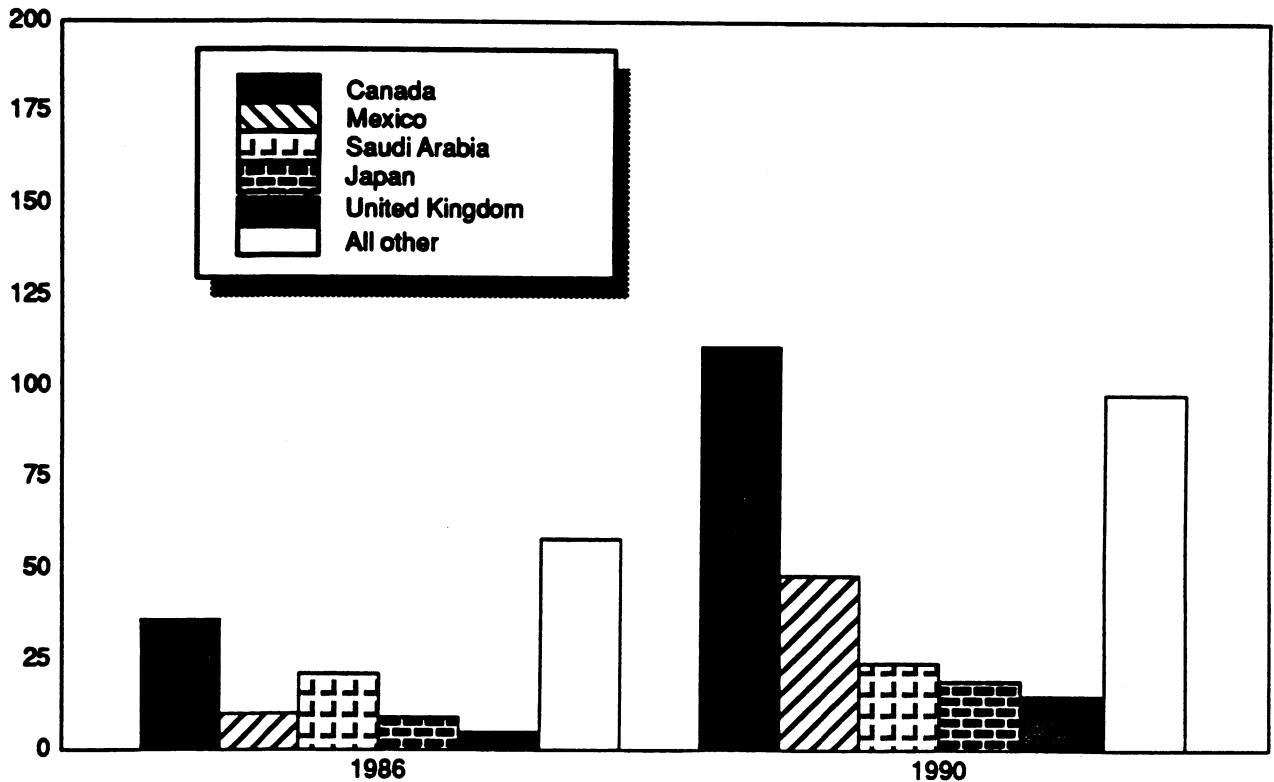
¹⁹ A major share of U.S. exports is believed to be accounted for by leading U.S. manufacturers that have foreign subsidiaries and/or foreign assembly operations.

Figure 4

Lamps and lighting fittings: U.S. Exports to leading markets, by share of total and by value, 1986 and 1990



Thousand dollars



Source: Based on official statistics of the U.S. Department of Commerce.

APPENDIX A
EXPLANATION OF TARIFF AND TRADE AGREEMENT TERMS

TARIFF AND TRADE AGREEMENT TERMS

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

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

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

The *Caribbean Basin Economic Recovery Act* (CBERA) affords nonreciprocal tariff preferences to developing countries in the Caribbean Basin area to aid their economic development and to di-

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

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

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

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

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

measures. Results of GATT-sponsored multilateral tariff negotiations are set forth by way of separate schedules of concessions for each participating contracting party, with the U.S. schedule designated as schedule XX.

Officially known as "The Arrangement Regarding International Trade in Textiles," the *Multifiber Arrangement* (MFA) provides a framework for the negotiation of bilateral agreements between importing and producing countries, or for unilateral action by importing countries in the absence

of an agreement. These bilateral agreements establish quantitative limits on imports of textiles and apparel, of cotton and other vegetable fibers, wool, manmade fibers, and silk blends, in order to prevent market disruption in the importing countries—restrictions that would otherwise be a departure from GATT provisions. The United States has bilateral agreements with more than 30 supplying countries, including the four largest suppliers: China, Hong Kong, the Republic of Korea, and Taiwan.

APPENDIX B
STATISTICAL TABLES

Table B-1
Chandeliers and other electric ceiling or wall lighting fittings, excluding those of a kind used for lighting public open spaces or thoroughfares: U.S. imports for consumption, by principal sources, 1986-90

(In thousands of dollars)

Source	1986	1987	1988	1989	1990
Taiwan	61,918	89,425	105,766	140,766	135,385
Mexico	2,338	3,955	7,790	33,341	36,723
Korea	4,001	10,036	23,174	28,658	31,520
Italy	11,197	12,368	11,968	20,353	22,532
China	109	767	4,900	8,898	19,207
Spain	11,408	13,397	14,876	15,397	17,535
Canada	7,944	8,946	8,450	11,873	9,928
Hong Kong	6,545	6,004	5,636	8,833	6,853
Japan	8,184	7,395	9,285	4,148	4,850
Germany ¹	5,727	7,927	8,027	2,039	2,986
All other	10,143	10,589	12,123	9,765	9,433
Total	129,514	170,809	211,995	284,071	296,952

¹ U.S. imports from eastern Germany, formerly the German Democratic Republic, are included in "Germany" effective July 1, 1990.

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

Table B-2
Electric table, desk, bedside or floor-standing lamps: U.S. imports for consumption, by principal sources, 1986-90

(In thousands of dollars)

Source	1986	1987	1988	1989	1990
Taiwan	77,030	104,823	99,172	158,039	177,866
China	496	1,597	4,443	6,402	14,412
Italy	8,116	8,103	7,752	8,383	8,445
Hong Kong	7,105	6,246	7,222	3,963	4,811
Mexico	593	883	4,297	9,388	4,698
Japan	3,724	4,093	6,195	2,089	4,393
Korea	3,438	3,242	4,580	3,930	3,937
Canada	1,324	1,646	1,538	1,756	2,805
Sweden	1,399	1,613	2,179	1,498	2,228
France	1,616	1,423	1,556	1,982	2,195
All other	12,304	12,362	12,712	11,134	9,376
Total	117,145	146,031	151,646	208,564	235,166

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

Table B-3
Lighting sets of a kind used for Christmas trees: U.S. imports for consumption, by principal sources, 1986-90

(In thousands of dollars)

Source	1986	1987	1988	1989	1990
Thailand	102	1,210	23,193	96,641	115,010
China	242	436	6,520	25,669	61,598
Taiwan	102,760	123,467	174,496	134,062	47,823
Macao	0	0	0	4,828	21,268
Philippines	149	85	337	3,441	20,445
Korea	14,377	22,458	36,507	33,476	13,774
Hong Kong	394	360	679	3,647	10,750
Malaysia	40	1,300	4,427	8,607	8,499
Mexico	117	148	2,141	1,613	3,528
Indonesia	0	0	0	0	996
All other	3,611	3,340	4,110	2,140	1,417
Total	121,792	152,804	252,410	314,124	305,108

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

Table B-4
Other electric lamps and lighting fittings: U.S. imports for consumption, by principal sources, 1986-90
(In thousands of dollars)

Source	1986	1987	1988	1989	1990
Taiwan	14,667	19,657	15,901	70,793	64,817
China	55	346	1,574	11,992	20,062
Mexico	1,037	2,467	3,809	8,382	11,980
Canada	1,654	1,854	2,516	5,795	11,178
Germany ¹	2,030	1,709	2,681	10,120	10,447
Hong Kong	2,016	2,221	2,141	13,027	8,521
Korea	1,551	3,051	5,276	7,939	7,991
Japan	4,720	4,430	5,299	7,563	7,302
Italy	1,622	1,478	1,893	6,616	5,296
Malaysia	47	35	217	1,344	3,888
All other	4,015	4,087	4,747	11,239	13,855
Total	33,414	41,335	46,054	154,810	165,337

¹ U.S. imports from eastern Germany, formerly the German Democratic Republic, are included in "Germany" effective July 1, 1990.

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

Table B-5
Nonelectrical lamps and lighting fittings: U.S. imports for consumption, by principal sources, 1986-90
(In thousands of dollars)

Source	1986	1987	1988	1989	1990
Taiwan	6,742	8,211	6,859	25,672	22,365
India	1,634	2,791	5,260	9,609	9,980
China	257	670	566	4,253	6,753
Germany ¹	534	705	503	3,478	6,230
United Kingdom	1,047	1,663	2,247	2,411	3,476
Austria	25	0	41	1,706	3,182
Hong Kong	2,618	2,909	3,390	4,083	3,105
France	354	262	254	1,158	2,863
Italy	2,917	2,257	932	2,065	2,679
Thailand	214	364	491	1,409	2,180
All other	3,951	6,279	7,005	11,220	15,224
Total	20,293	26,111	27,548	67,064	78,037

¹ U.S. imports from eastern Germany, formerly the German Democratic Republic, are included in "Germany" effective July 1, 1990.

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

Table B-6
Illuminated signs, illuminated nameplates and the like: U.S. imports for consumption, by principal sources, 1986-90
(In thousands of dollars)

Source	1986	1987	1988	1989	1990
China	129	405	2,056	346	3,155
Canada	5,090	6,121	8,361	1,472	1,671
Taiwan	19,480	26,450	22,050	1,066	796
Hong Kong	2,636	2,887	2,851	775	696
Japan	4,805	4,425	5,898	449	593
United Kingdom	1,231	1,486	1,578	426	492
Italy	2,417	2,315	2,713	694	420
Germany ¹	3,601	3,456	4,938	106	399
Mexico	1,041	2,596	4,588	48	263
France	795	930	989	90	251
All other	6,177	9,260	13,190	538	592
Total	47,402	60,331	69,212	6,010	9,328

¹ U.S. imports from eastern Germany, formerly the German Democratic Republic, are included in "Germany" effective July 1, 1990.

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

Table B-7
Parts for lamps of glass: U.S. imports for consumption, by principal sources, 1986-90

(In thousands of dollars)

Source	1986	1987	1988	1989	1990
Taiwan	28,831	27,628	24,021	27,754	28,285
Austria	8,534	10,375	11,790	14,090	13,229
Mexico	8,727	8,944	10,398	11,377	10,617
Italy	8,772	8,573	7,142	6,305	7,863
Germany ¹	6,507	4,599	3,350	5,373	7,040
Yugoslavia	613	2,158	4,098	2,836	2,884
France	2,748	2,988	3,141	3,459	2,711
Korea	2,258	2,705	3,890	2,155	2,614
Spain	1,633	2,564	1,701	1,839	2,191
Turkey	109	71	203	505	1,339
All other	8,547	11,668	12,334	11,239	10,211
Total	77,279	82,273	82,068	86,932	88,983

¹ U.S. imports from eastern Germany, formerly the German Democratic Republic, are included in "Germany" effective July 1, 1990.

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

Table B-8
Parts for lamps of plastic: U.S. imports for consumption, by principal sources, 1986-90

(In thousands of dollars)

Source	1986	1987	1988	1989	1990
Taiwan	7,504	10,724	12,427	6,552	5,264
Canada	9,715	12,137	15,768	1,944	1,801
Hong Kong	3,648	3,756	4,058	574	984
Sweden	608	653	672	184	852
Germany ¹	5,579	6,265	7,849	625	737
France	1,228	1,493	1,805	7	485
Italy	1,306	1,448	1,373	462	274
United Kingdom	1,856	2,217	2,418	136	266
Japan	5,769	6,544	9,211	213	187
Korea	3,265	5,042	5,836	217	137
All other	6,596	8,316	11,963	785	591
Total	47,074	58,595	73,380	11,699	11,578

¹ U.S. imports from eastern Germany, formerly the German Democratic Republic, are included in "Germany" effective July 1, 1990.

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

Table B-9
Other parts for lamps and lighting fittings: U.S. imports for consumption, by principal sources, 1986-90

(In thousands of dollars)

Source	1986	1987	1988	1989	1990
Taiwan	39,294	51,209	47,781	51,596	51,341
Canada	5,189	7,913	8,827	11,693	12,832
Italy	9,253	9,925	3,584	8,769	9,106
Mexico	942	1,030	1,697	6,190	8,131
Korea	4,763	5,742	8,752	6,210	6,838
Hong Kong	7,535	7,841	7,429	5,418	6,580
Germany ¹	3,856	5,631	7,018	4,237	4,651
Spain	2,395	3,378	4,687	4,118	4,325
China	41	253	451	1,552	3,584
Japan	1,438	1,511	1,852	2,125	2,506
All other	5,419	5,642	8,238	8,297	10,213
Total	80,125	100,075	105,316	110,205	120,107

¹ U.S. imports from eastern Germany, formerly the German Democratic Republic, are included in "Germany" effective July 1, 1990.

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