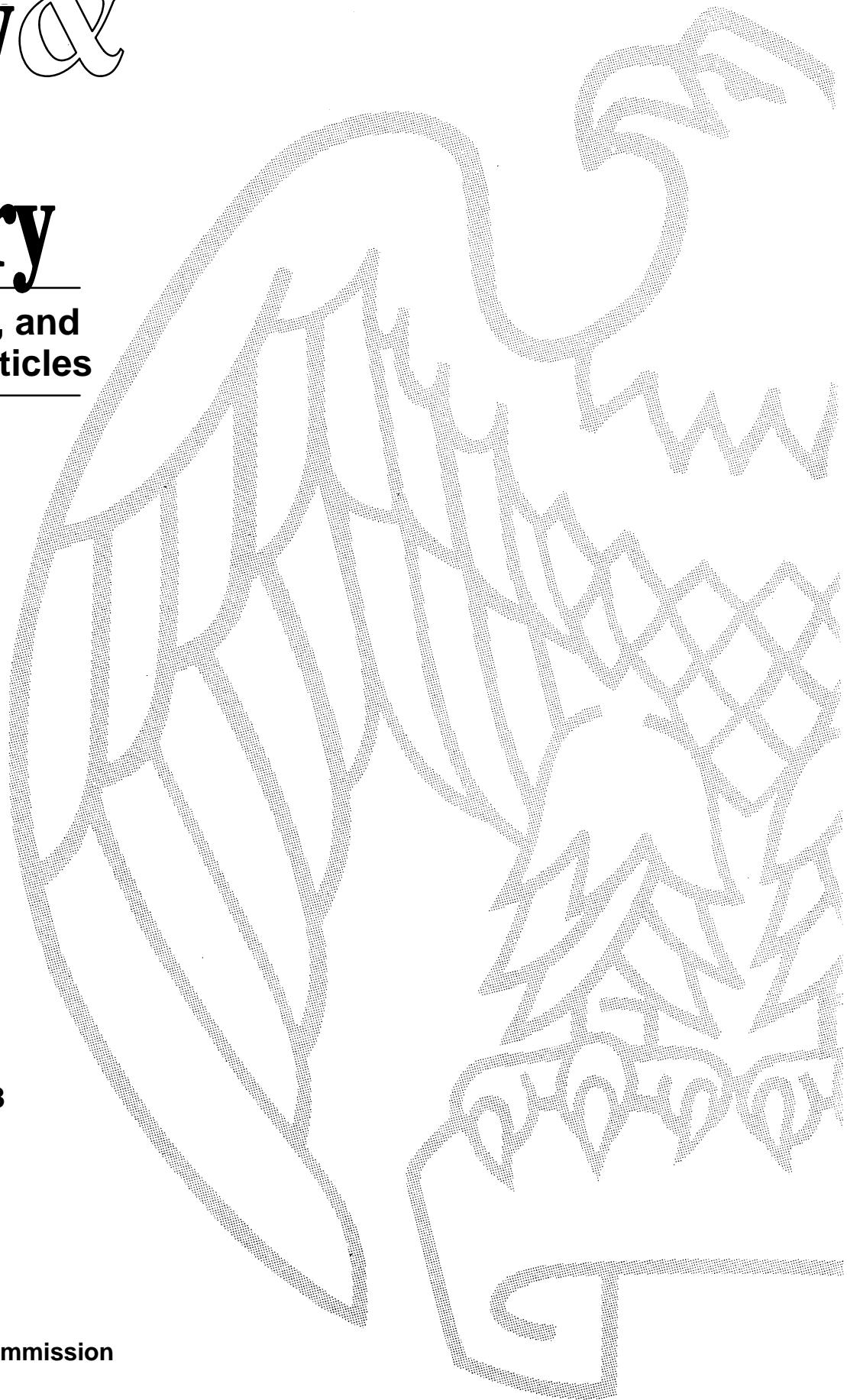


Industry & Trade Summary

**Brooms, Brushes, and
Hair-Grooming Articles**

**USITC Publication 2748
March 1994**

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



UNITED STATES INTERNATIONAL TRADE COMMISSION

COMMISSIONERS

Don E. Newquist, Chairman
Peter S. Watson, Vice Chairman
David B. Rohr
Anne E. Brunsdale
Carol T. Crawford
Janet A. Nuzum

Robert A. Rogowsky
Director of Operations

Vern Simpson
Director of Industries

This report was prepared principally by

J. Gail Burns

under the direction of

Larry L. Brookhart, Division Chief
Ralph J. Watkins, Branch Chief

Minerals, Metals, and Miscellaneous Manufactures Division
Miscellaneous Manufactures Branch

Address all communications to
Secretary to the Commission
United States International Trade Commission
Washington, DC 20436

PREFACE

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

This report on brooms, brushes, and hair-grooming articles covers the period 1988 through 1992 and represents one of approximately 250 to 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 minerals, metals, and miscellaneous manufactures sector.

<i>USITC publication number</i>	<i>Publication date</i>	<i>Title</i>
2426	November 1991	Toys and models
2475	July 1992	Fluorspar and certain other mineral substances
2476	January 1992	Lamps and lighting fittings
2504	November 1992	Ceramic floor and wall tiles
2523	June 1992	Prefabricated buildings
2587	January 1993	Heavy structural steel shapes
2623	April 1993	Copper
2653	June 1993	Glass containers
2692	November 1993	Refractory ceramic products
2694	November 1993	Flat glass and certain flat glass products
2738	February 1994	Structural ceramics
2742	March 1994	Fiberglass products
2748	March 1994	Brooms, brushes, and hair-grooming articles

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

CONTENTS

	<i>Page</i>
Preface	i
Introduction	1
Manufacturing processes and raw materials	1
U.S. industry profile	4
Industry structure	4
Combs, hairbrushes, and hair ornaments	5
Brooms	5
Brushes	5
Technological developments	6
Marketing	6
Consumer characteristics and factors affecting demand	6
Foreign industry profile	7
U.S. trade measures	8
Foreign trade measures	12
U.S. market	12
Consumption	12
Production	12
Imports	12
Foreign markets	16
Foreign market profile	16
U.S. exports	17
U.S. trade balance	19
Appendixes	
A. Explanation of tariff and trade agreement terms	A-1
B. Figures	B-1
C. Statistical tables	C-1
Figures	
1. U.S. broom, brush, and hair-grooming articles industries: Principal raw materials, producer types, major products, and principal consumers	2
2. Brush manufacturing	3
3. Brooms, brushes, and hair-grooming articles: U.S. imports, producers' shipments, and apparent consumption	13
4. Brooms, brushes, and hair-grooming articles: U.S. imports from principal sources, by share of total, and by value, 1989 and 1992	15
5. U.S. imports, by selected product segment, in terms of value, 1992	16
6. Brooms, brushes, and hair-grooming articles: U.S. exports to leading markets, by share of total, and by value, 1989 and 1992	18
7. Brooms, brushes, and hair-grooming articles: U.S. exports, imports, and trade balances, 1989-92	21
8. Brooms, brushes, and hair-grooming articles: Bilateral U.S. trade balances, 1989-92	21

CONTENTS—Continued

Page

Figures—Continued

B-1.	Brooms of broom corn: U.S. imports from principal sources, by value, 1989 and 1992	B-2
B-2.	Brooms other than of broom corn: U.S. imports from principal sources, by value, 1989 and 1992	B-2
B-3.	Toothbrushes: U.S. imports from principal sources, by value, 1989 and 1992	B-2
B-4.	Hairbrushes, cosmetic brushes, and other personal brushes: U.S. imports from principal sources, by value, 1989 and 1992	B-3
B-5.	Artists' brushes, writing brushes, and other similar brushes: U.S. imports from principal sources, by value, 1989 and 1992	B-3
B-6.	Paint brushes, pads, and rollers: U.S. imports from principal sources, by value, 1989 and 1992	B-3
B-7.	Industrial brushes: U.S. imports from principal sources, by value, 1989 and 1992	B-4
B-8.	Feather dusters, squeegees, and brooms and brushes not specifically provided for: U.S. imports from principal sources, by value, 1989 and 1992	B-4
B-9.	Combs: U.S. imports from principal sources, by value, 1989 and 1992	B-4
B-10.	Hair accessories: U.S. imports from principal sources, by value, 1989 and 1992	B-5
B-11.	Nonthermic hair rollers: U.S. imports from principal sources, by value, 1989 and 1992	B-5

Tables

1.	Brooms, brushes, and hair-grooming articles: Harmonized Tariff Schedule subheading; description; U.S. col. 1 rate of duty as of Jan. 1, 1993; U.S. exports, 1992; and U.S. imports, 1992	9
2.	Brooms, brushes, and hair-grooming articles: U.S. shipments, exports of domestic merchandise, imports for consumption, and apparent consumption, 1988-92	13
3.	Brooms, brushes, and hair-grooming articles: U.S. imports for consumption, by principal sources, 1988-92	14
4.	Brooms, brushes, and hair-grooming articles: U.S. exports of domestic merchandise, by principal markets, 1988-92	17
5.	Brooms, brushes, and hair-grooming articles: U.S. exports of merchandise, imports for consumption, and merchandise trade balance, by selected countries and country groups, 1988-92	20
C-1.	Brooms of broom corn: U.S. imports for consumption, by principal sources, 1988-92	C-2
C-2.	Brooms, other than of broom corn: U.S. imports for consumption, by principal sources, 1988-92	C-2
C-3.	Toothbrushes: U.S. imports for consumption, by principal sources, 1988-92	C-2
C-4.	Hairbrushes, cosmetic brushes, and other personal brushes: U.S. imports for consumption, by principal sources, 1988-92	C-3
C-5.	Artists' brushes, writing brushes, and other similar brushes: U.S. imports for consumption, by principal sources, 1988-92	C-3
C-6.	Paint brushes, pads, and rollers: U.S. imports for consumption, by principal sources, 1988-92	C-4
C-7.	Brushes constituting parts of machines, appliances, or vehicles (industrial brushes): U.S. imports for consumption, by principal sources, 1988-92	C-4
C-8.	Feather dusters, squeegees, and brooms and brushes not specifically provided for: U.S. imports for consumption, by principal sources, 1988-92	C-5

CONTENTS—Continued

	<i>Page</i>
Tables—Continued	
C-9. Combs: U.S. imports for consumption, by principal sources, 1988-92	C-5
C-10. Hair accessories, including barrettes, clips, and bobby pins: U.S. imports for consumption, by principal sources, 1988-92	C-6
C-11. Nonthermic hair rollers: U.S. imports for consumption, by principal sources, 1988-92	C-6
C-12. Brooms and brushes of vegetable materials, bound together, with or without handles: U.S. exports of domestic merchandise, by principal markets, 1988-92	C-6
C-13. Toothbrushes: U.S. exports of domestic merchandise, by principal markets, 1988-92	C-7
C-14. Hair brushes, cosmetic brushes, and other personal brushes: U.S. exports of domestic merchandise, by principal markets, 1988-92	C-7
C-15. Artists' brushes, writing brushes, and other similar brushes: U.S. exports of domestic merchandise, by principal markets, 1988-92	C-8
C-16. Paint brushes, pads, and rollers: U.S. exports of domestic merchandise, by principal markets, 1988-92	C-8
C-17. Brushes constituting parts of machines, appliances, or vehicles (industrial brushes): U.S. exports of domestic merchandise, by principal markets, 1988-92	C-9
C-18. Combs and other hair accessories: U.S. exports of domestic merchandise, by principal markets, 1988-92	C-9
C-19. Nonthermic hair rollers and certain other hair curling devices: U.S. exports of domestic merchandise, by principal markets, 1988-92	C-10

INTRODUCTION

This summary covers the broom, brush,¹ and hair-grooming articles industries for the years 1988-92. Although numerous distinct industries are covered in this report, the industries share certain characteristics. The industries will be either treated as a whole or in terms of the following subgroups: household brooms; grooming and household brushes; artists' and make-up brushes; paint applicators; industrial brushes; and combs, hairbrushes, and hair ornaments. Virtually all of the products included in this summary are produced worldwide. U.S. imports often are less expensive than competing U.S.-made articles and, in general, are produced by methods that are more labor intensive than those commonly used by U.S. manufacturers. Competition from imports during the last decade forced consolidation in the domestic industries producing these goods, and these industries are now static, with import penetration holding at one-quarter of the market.

Brooms and brushes accounted for over 90 percent of total product shipments covered by this summary in 1992 and accounted for 60 percent of U.S. imports. Hair-grooming articles and hair accessories are relatively more important among imported products, resulting from relatively low, highly transferable production technology that combines with other cost advantages (lower labor costs, lower rents, lower taxes, and fewer regulations) of operating in developing countries. In 1992, these items accounted for an estimated 40 percent of the import total.

MANUFACTURING PROCESSES AND RAW MATERIALS

Processes used in the manufacture of brooms, brushes, and hair-grooming articles vary widely, from customized work requiring well-trained workers to high-speed, mass production by machines. Materials commonly used to make brooms, brushes, and hair-grooming articles include broom corn or other vegetable materials,² synthetic and natural fibers (horse hair, hog bristle, and other natural hairs), mop yarn, plastic, rubber, wood, and metals (see figure 1). Certain hair ornaments are also made of tortoise and other shell and ivory, some set with imitation pearls or imitation gemstones.

¹ The products covered in this report do not include mechanical brooms and brushes, or electric toothbrushes and parts thereof, provided for in HTS subheadings 8509.80.00 (other electromechanical appliances) and 8509.90.40 (other parts of other electromechanical appliances).

² The vegetable fibers most widely used are those known as "tampico" hemp, obtained from plants of a cactus family which grows in Mexico. "Bassine" and "palmyra" are tough, strong, long-wearing fibers obtained from palm trees which grow in Ceylon and India. African "bass," obtained from the feather-leaf palm found in Central Africa, is adapted for use in street and barn brooms; "bahia," a tapered fiber which grows in northern Brazil, has very long-lasting wearing qualities. "Palmetto," the only natural plant fiber produced commercially in the United States, comes from the palmetto tree of Florida and is valued for its extreme elasticity, durability, and water-resistant qualities.

Brooms are cleaning tools of stiff fiber made from broom corn, other vegetable fiber or, increasingly, plastic fibers. Brooms made from broom corn supply about half of the U.S. broom market; the other half is supplied mostly by brooms made from synthetic materials. The manufacturing process to make broom corn brooms is particularly labor intensive, requiring skilled craftsmen in both the winding and stitching of the product. The sweeping portion of the broom is bound by wire or sewn together, generally by machine, and then, for household brooms (versus whiskbrooms), is attached to a long, slim, rounded handle, usually of wood. Push brooms are made principally from plastic fiber or vegetable fibers other than broom corn and are mounted or set in a head, usually of wood, with the handles offset at an angle.

The brush industry consists of companies that make manual toothbrushes; household brushes; grooming brushes, artists' brushes, and cosmetic brushes; paint brushes and paint rollers; industrial brushes; and other brushes. Various types of synthetics and plastics are used on a major scale in brush manufacturing, especially for less expensive brushes, because of their inherent advantages. Plastic does not crack as easily in water as wood; plastic products are generally more uniform; plastic does not warp; plastic is frequently less expensive than alternative materials, such as wood; and plastic brushes tend to last longer than wood brushes.

There has been a recent explosion in the development of dental health care products, particularly toothbrushes. Toothbrushes are sold in a variety of styles and sizes with special designs for children and adults. There is a wide variance in the quality of toothbrushes, ranging from toothbrushes with ripple, multi-level and domed bristles to ones with angled handles, handles that change color, and handles with textured grips. Toothbrush heads come in compact and full-size, diamond-shaped and rectangular. Bristles can be ultra-soft, soft, medium, or hard. Plastics are now dominant, both for toothbrush backs and filling materials, in the proportion of seventy-five percent nylon and twenty-five percent bristles. Rust-resistant wire of nickel silver or coated steel is used for stapling purposes. The manufacture and packaging of toothbrushes is highly mechanized, beginning with an injection molding process that forms the plastic and then a process that automatically extrudes and staples bristles of nylon filament into holes at the end of the brush.

Grooming brushes include hairbrushes, hand brushes, bath brushes, shaving brushes, nail brushes, and all other brushes used for personal care (except toothbrushes). The processes for producing most grooming brushes are somewhat similar to that for making toothbrushes, except they are much more labor intensive and the packaging processes are less automated. The manufacturing process for many hairbrushes, for example, basically consists of four stages: (1) molding the plastic handle and base;

Figure 1
U.S. broom, brush, and hair-grooming articles industries: Principal raw materials, producer types, major products, and principal consumers

U.S. Broom, Brush, and Hair-Grooming Articles Industries			
Principal raw materials	Producer types	Major products	Principal consumers
<ul style="list-style-type: none"> • Bristles • Broom corn • Mop yarn • Plastics • Rubber • Alloy steels • Synthetic and natural fibers • Tin • Nickel • Copper • Aluminum • Wire • Wood 	<ul style="list-style-type: none"> • Diversified manufacturers • Single product manufacturers • Cottage industry entrepreneurs 	<ul style="list-style-type: none"> • Brooms • Toothbrushes • Artists' brushes • Paint brushes • Household brushes • Industrial brushes • Cosmetic and grooming brushes • Combs • Barrettes • Hair rollers 	<ul style="list-style-type: none"> • Retailers • Wholesalers • Government contracts • Educational institutions

Source: *Broom, Brush, & Mop*, various issues; *Brushware*, various issues.

(2) bristling;³ (3) application of epoxy⁴ to the bristle tips (if applicable); and (4) packaging (see figure 2). While a majority of these brushes are made with plastic handles and nylon filaments, there are a large number of wooden brushes with all natural fibers, especially at the higher-priced end of the market. The high price for some shaving brushes, for example, reflects the costly hours of hand labor needed to select, grade, and match badger hairs for length and color. Grooming brushes are produced in a wide range of styles and types, from totally molded plastic brushes to brushes with rubber pads glued to the handle and bristles inserted into the

³ Bristling is accomplished by drilling holes in the plastic handle, then inserting the bristle or bristles folded around a wire anchor. The anchor acts somewhat like a fishhook to hold the bristle in the brush. Tufted brushes using older technology do not use the anchor method of insertion; rather, the bristles are stapled to the base.

⁴ Epoxy is applied to achieve the "comfort-tip" look on the bristles and avoid hair breakage. After the hairbrush bristles have been trimmed they are then "balled" by adding a drop of epoxy to the tips of each bristle to soften the blunt-cut bristle end. This process is done manually by individual operators. It slows down the production process considerably because the brushes must be left to cure on a rack for several hours.

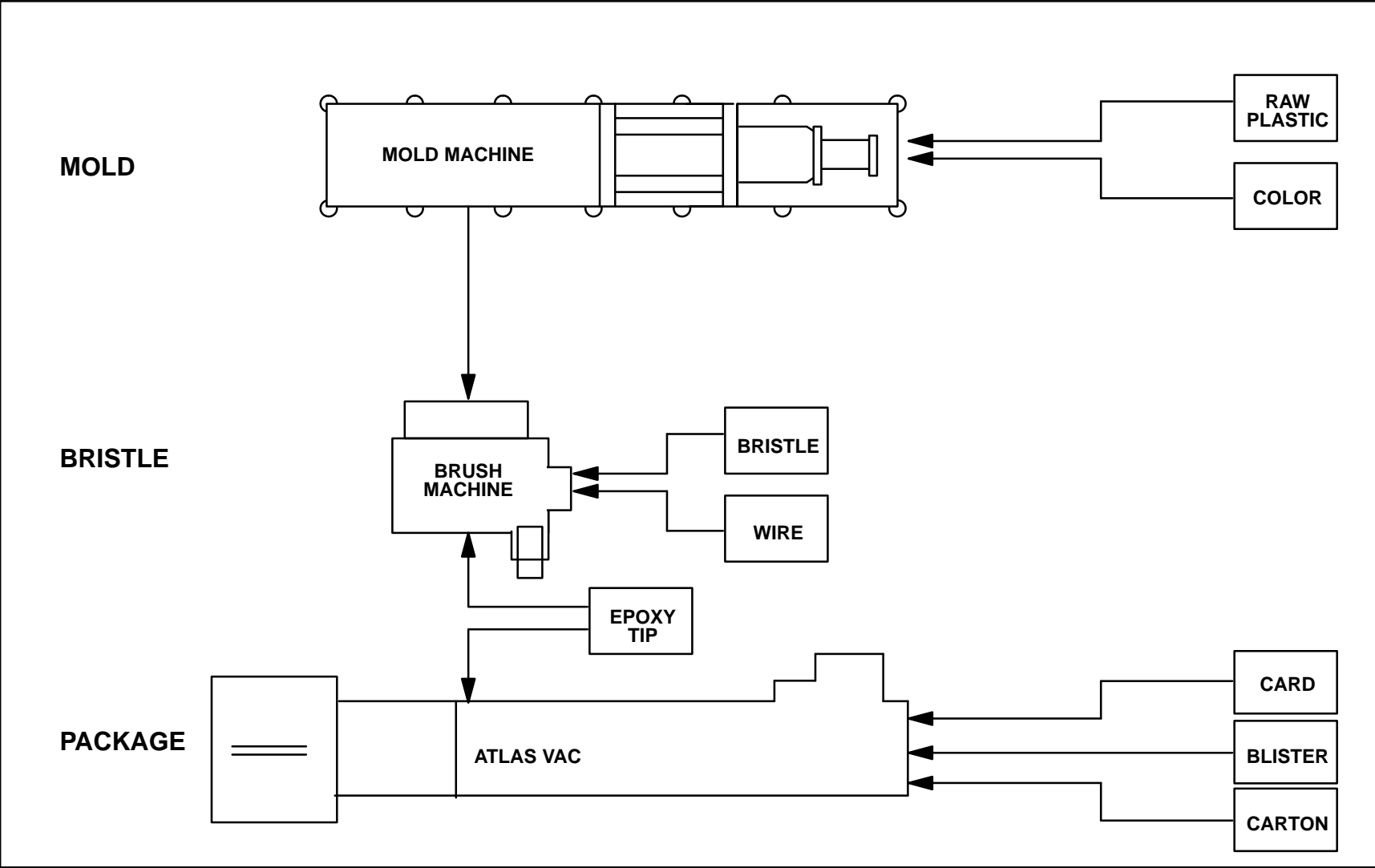
pad, e.g., nail brushes; there is also a wide variance in the quality of these brushes.

Household brushes include all types of cleaning and scrub brushes as well as kitchen and bath brushes. Many of these brushes are produced by placing nylon bristles between twisted wire and attaching the wire to a wooden or plastic handle in a largely automated process. The twisted-in-wire production method is the most highly mechanized brush production process. To make twisted-in-wire brushes, filling material is inserted between two wires and the wires are then wound spirally on a lathe (turning machine). The twisted wire holds the filling material firmly in place and, in many types, also serves as the handle for the brush. Machines produce huge quantities of twisted-in-wire brushes with a minimum amount of labor in simple and automated production processes.

Other types of maintenance and household brushes are produced by a mechanized manufacturing technique known in the trade as "staple set" or "solid block."⁵ Such brushes are made on automatic

⁵ Wurzer, Carl H., "Bristles and Brushes," *Brushware*, January-February 1992, p. 40.

Figure 2
Brush manufacturing



Source: Goody Products Inc.

machines that drill holes in the wooden blocks, fill the holes with brush stock, and staple the stock in place with various wire, e.g., carbon, steel, bronze, or copper, depending on the end use of the brush. The larger manufacturers make their own blocks and handles from selected hardwood, mostly maple, beech, and birch, while others purchase their formed blocks and handles from handle manufacturers.

Artists' brushes and small cosmetic brushes are manufactured in a wide variety of sizes and shapes, with much of the production done by hand. Most of these brushes are thin with long handles and bristles tapered to a point. Bristles for the more expensive brushes are principally made from natural fibers, such as hog or horse hair, Russian sable hair, and ox ear hair. The less-expensive artists' brush bristles are produced with synthetic fibers. The bristles are generally held in place by a ferrule⁶ and are glued or cemented to the handle. These brushes are chiefly used in oil painting, watercolor painting, sign writing, and in applying cosmetics and medicine.

Paint brushes are manufactured in a somewhat similar manner to artists' brushes, with bristles placed inside a metal ferrule and, after being secured by some type of epoxy, attached to a handle. Although the procedure is generally mechanized, there is a large amount of manual labor, particularly in the manufacture of higher quality brushes. For the more expensive brushes, natural boar bristle, imported almost exclusively from China, is used along with finely finished wooden handles. However, the majority of paint brushes, especially those manufactured for the mass, nonprofessional market, have bristles made of synthetic fibers and handles made of plastic.

Paint rollers, used to apply a liquid mixture or protective coating, consist of an L-shaped frame and handle, usually of a strong high-impact plastic and/or metal with a replaceable cover made from treated cardboard and synthetic fibers such as nylon, Dynel, or rayon. Roller production and packaging are highly automated processes, with a minimum of labor required to operate the machinery.

Industrial brushes constitute the bulk of other brushes covered by this summary. They take the form of power-driven disc, end, and cup brushes used singly and in multiple sections in hundreds of manufacturing operations to make products such as textiles, wool, paper, and leather; and in operations such as flour milling, dry cleaning, dairying, bottling, and electroplating. These brushes are both hand and machine made in all types of shapes and designs, and include staple set, twisted-in-wire, and rotary types, and are filled with many kinds and varieties of material, including fiber, bristle, wire, horsehair, and nylon. Industrial brushes may vary from hand-sized to mammoth, revolving sludge extractors used in paper

⁶ A metal ring or cap placed around a pole or shaft to reinforce it or prevent splitting. Ferrules can be made of alloy steels, tin, nickel, copper, and aluminum.

making that are three feet in diameter and twenty feet in length.

Not directly a part of the brush industry but closely associated with it are the importers of brush materials, such as bristle, soft hairs, and vegetable fibers, and the manufacturers of brush ferrules. A few of the larger paint and varnish brush manufacturers make their own ferrules but a greater number are dependent upon outside sources for this necessary component. Ferrules are supplied by about 15 manufacturers that also make metal ferrules for purposes other than the manufacture of brushes.

Hair-grooming articles include combs, nonthermic hair rollers, hair clips, bobby pins, barrettes, or other hair ornaments, all of which are used for adjusting, curling, or confining hair, or for personal adornment. These products are principally machine-made of plastic or rubber, and, to a lesser extent, of metal, wood, ivory, and tortoise and other shell. Most combs are made through an injection molding process, with labor costs representing only a small portion of the manufacturing cost.

U.S. INDUSTRY PROFILE

Industry Structure

The Bureau of the Census reported that the number of establishments producing all types of brooms, brushes, and hair-grooming articles totaled 295 in 1987. According to industry sources, the number of establishments in 1992 remained around 300. Nearly half of the establishments employed 20 or fewer employees, reflecting the large number of very small firms; total employment in these industries⁷ was about 15,000.⁸

With the exception of the comb, hairbrush, and hair ornament industry, the industries covered in this summary consist mostly of small, privately-owned companies that do not have foreign operations, and generally are not vertically integrated. Over the past decade, these industries have become more concentrated as import competition has intensified, encouraging companies to achieve greater economies of scale and to modernize production operations in order to compete more effectively in the world market. Thus, there are a few companies that are horizontally integrated and, in some cases, have diversified product lines, e.g., the larger broom manufacturers have expanded operations to include a full line of janitorial supplies. These companies have been able to compete more successfully with imports than smaller companies because they have been able to lower their costs of production by cutting labor costs and overhead, and by using their raw materials more efficiently.

⁷ The U.S. industries examined in this report cover Standard Industrial Classification (SIC) 3991, Brooms and Brushes; SIC 3965 (pt.), Fasteners, Buttons, Needles, and Pins; SIC 5199 (pt.), Nondurable Goods, Not Elsewhere Classified; SIC 3089 (pt.), Plastic Products, Not Elsewhere Classified; and SIC 3069 (pt.), Fabricated Rubber Products, Not Elsewhere Classified.

⁸ Based on USITC staff estimates and *Annual Survey of Manufacturers, 1990*.

Many of the companies supplying raw materials and parts (such as petrochemicals, steel tubing, and wire) to the industries covered by this summary are considerably larger than the manufacturers of the finished articles. They tend to be vertically integrated and, in some cases, are multinational corporations. These larger supplying companies guarantee sufficient raw materials and parts to the smaller firms making consumer products.

Although the structure of many industries is being transformed through globalization (or internationalization)⁹ of production or ownership, this trend is less prevalent among the industries producing the articles covered in this summary. Based on the latest government data, 2.2 percent of all U.S.-manufacturing industry establishments were foreign-owned, and these firms accounted for nearly 7 percent of manufacturing and employment, and 9.6 percent of shipments. This contrasts with only 0.7 percent of foreign ownership of the establishments in the sub-category covering products in this summary, 5.6 percent of employment, and 8 percent of shipments.¹⁰

Combs, Hairbrushes, and Hair Ornaments

The U.S. comb, hairbrush, and hair ornament industry segment is highly concentrated. Only one U.S. producer, Goody Products, Inc.,¹¹ is vertically (and horizontally) integrated. The few other companies that comprise this industry segment are smaller, less capital-intensive firms and are less vertically integrated or diversified. These companies have primarily entered the market as importers that specialize in the distribution of a particular category of hair accessories such as headbands and barrettes.

Goody, a publicly-held company, headquartered in Kearny, New Jersey, employed approximately 3,300 workers at seven plants in 1992, with 1,400 employed at two plants in Manchester, Georgia. The firm has a reputation in the industry for its innovative production processes and state-of-the-art factories.¹² Although brushes are a major part of Goody's annual sales (\$218 million in 1992),¹³ the company's product line includes extensive styles of barrettes, fashion combs, clips,

bobby pins, and ponytailers in many colors, shapes, and sizes. Goody owns a Canadian plant that manufactures products for the Canadian market and a small packaging operation in Mexico, along with a small export business, shipping primarily to Canada and Latin American countries. Goody also imports from several sources to complement its line and offer products at lower price points. Ace Combs, a subsidiary acquired by Goody in 1986, is the only producer of hard rubber combs in the United States. Several other companies were acquired by Goody in the 1980s, including Goody's Opti-Ray subsidiary, reportedly the largest supplier of sunglasses to the domestic market.¹⁴

Brooms

The U.S. broom corn broom industry, historically centered in the Midwest close to the source of broom corn, has been establishing facilities elsewhere in the United States to develop regional markets for its products, as most of the broom corn used by the industry currently is imported from Mexico. Broom corn must be harvested manually, giving Mexico a competitive advantage in the broom corn broom market because of Mexico's lower labor costs. Many companies have located facilities in the Southeastern United States in order to take advantage of lower wage rates there than in the Midwest or North Atlantic regions. The number of firms producing brooms decreased from approximately 125 in 1988 to an estimated 110 in 1992. An estimated 15 to 20 manufacturers account for over 50 percent of total annual production. Producers also include a number of "lighthouses" for the blind or disabled, a few State and Federal prison workshops, as well as a large number of small, family-run operations with fewer than 20 employees. Broom factories are currently located in a diverse geographic pattern throughout the continental United States with concentrations in Illinois, Pennsylvania, California, and Texas. Today, all major broom corn broom producers also manufacture supplementary items, including deck mops, sponge mops and refills, push brooms, plastic brooms, and assorted small houseware cleaning products.

Brushes

The brush industry is made up of approximately 140 manufacturing units employing 20 or more workers, with an estimated annual gross sales of \$275 million. A large proportion of those units employ fewer than 100 people; only three or four employ as many as 500.¹⁵ Although brush factories are located throughout the United States, most are concentrated in the Middle- and North Atlantic States.

⁹ Globalization of an industry occurs through cross-border investment and often involves operations in different countries. It results in various types of foreign investment (including building new foreign facilities, joint ventures, and purchasing part or all of an existing foreign firm), production-sharing operations (use of foreign assembly facilities and/or international sourcing of parts and materials), licensing, and supplementing domestic production with imported product lines.

¹⁰ *Foreign Direct Investment in the United States: Establishment Data for 1987*, U.S. Department of Commerce, Bureau of Economic Analysis.

¹¹ Newell, a maker of consumer hardware and houseware products, agreed to wholly acquire the remaining 87 percent of Goody Products that it did not already own. The agreement was finalized on November 9, 1993. Interview with industry official, Nov. 10, 1993.

¹² Interview with industry official, Aug. 14, 1992.

¹³ Interview with industry official, Nov. 10, 1993.

¹⁴ Bob Lawrence, "Goody Products-Made in the USA and Number One in Hair Accessories," *Brushware*, Vol. 92, No. 5 (Sept./Oct. 1990), pp. 4-6.

¹⁵ Merrill Denison, "Bristles and Brushes," *Brushware* (Nov./Dec. 1991), p. 38; Merrill Denison, "Bristles and Brushes," *Brushware* (July/Aug. 1992), p. 76.

In 1993, the toothbrush industry, a major and growing segment of the brush industry, was a \$460 million (retail) business.¹⁶ Three companies dominate the toothbrush industry: Colgate-Palmolive Co. with 24 percent of the market, Gillette (Oral-B Laboratories) with 22 percent, and Procter & Gamble (Crest) with 15 percent. According to industry sources, six smaller firms make up the remainder. The domestic toothbrush industry has grown tremendously in recent years. Media advertising spending, for example, soared 250 percent in 1993 to \$75 million annually.¹⁷ Industry sources indicate that imports account for approximately 10 percent of the U.S. market.¹⁸

Industrial brushes are the smallest segment of the brush industry, consisting of fewer than fifteen manufacturers. Most of the brushes produced by this segment are specially designed to meet a particular manufacturing problem. Rotary- and power-driven brushes play an important role in manufacturing a wide variety of articles, from apparel and watches to newspapers. About 75 percent of the entire output of rotary brushes is concentrated in a single plant of the Osborn Company in Cleveland, Ohio.¹⁹

Technological Developments

There have been few major technological changes in any of the summary industries in recent years. Natural fibers for brooms and brushes were challenged by technological advances that led to the development of synthetic fibers in the first half of the twentieth century. For the broom and brush industry, synthetic fibers provided: (1) availability, (2) resistance to deterioration, (3) versatility in size and color, (4) greater resistance to abrasion, and (5) consistency with which the delivered product adhered to specifications. Major disadvantages of synthetic fibers are their limited ability to absorb liquid and their adverse reaction to high temperatures. Because of these characteristics, natural fibers are often still the fiber of choice for certain uses, e.g., artists' and paint brushes.

Computerized instructions and the use of robotics have been employed in the manufacturing process for certain plastic hairbrushes, barrettes, and combs. Although the production of brooms and brushes has become more automated over time, more expensive brushes such as shaving and artists' brushes continue to require a significant amount of manual labor.

A broom corn seed variety has been developed at the University of Illinois that will grow broom corn suitable for mechanical harvesting. Efforts are continuing to develop a new variety that will yield broom corn with pale green or wheat-colored bristles because the current purple color of the new broom corn variety is a potential drawback to public acceptance.²⁰

¹⁶ George Lazarus, *Chicago Tribune*, Dec. 4, 1993.

¹⁷ *Ibid.*

¹⁸ Interview with industry official, July 30, 1992.

¹⁹ Carl H. Wurzer, "Bristles and Brushes," *Brushware*, Jan.-Feb. 1992, p. 42.

²⁰ "Broom Corn Seed Project Continues Steady Progress," *Broom, Brush & Mop*, Vol. 83, No. 1 (Jan. 1993), p. 15.

Because most broom corn is harvested manually in Mexico, industry sources believe the lower costs of the mechanically harvested broom corn will allow U.S. producers of broom corn brooms to be more competitive with imports from Mexico, and possibly offset tariff reductions under the North American Free-Trade Agreement.²¹

A new innovation in paint brushes was introduced in 1992 by the 3M Company. The item, "NewStroke Snap-Off Paint Brushes," is several paint brushes that snap off a multi-pack for one-time use. The handles are made of recycled paperboard, and the bristles are made from a special film that is laminated, then split into tips. The brushes can be used for paints, stains, and varnishes, but not chemical strippers. The product is designed for do-it-yourselfers, most of whom, studies have found, use a paint brush only once.

Rotary- and power-driven industrial brushes represent the pinnacle of brush technology, both in development and application. This segment of the brush industry is the most highly specialized. Brush design and construction are adapted to changes in the manufacturing methods of which they are a part.

Marketing

The marketing of brooms, brushes, and hair-grooming articles occurs primarily through distributors such as mass merchandisers, supermarkets, wholesale grocers, discount stores, drug stores, and, in the case of brooms and brushes, hardware stores and janitorial supply outlets. School boards and the military are also major customers for these industries. As indicated earlier, because technological improvements in these product lines are limited, U.S. producers have focused on distinguishing their products from those of their competitors in the market place. Marketing efforts include using full-color magazine ads and attractive, colorful packaging, and providing retailers with creative display ideas and point-of-purchase merchandisers. Broom manufacturers, in particular, because of the certainty of continuing competition from Mexico, have become more conscious of marketing techniques.²² For example, an emerging marketing strategy is promoting a product's good relationship to the environment. This marketing idea has rapidly gained credibility with environmentally conscious consumers.

Consumer Characteristics and Factors Affecting Demand

The major factors affecting the demand for brooms, brushes, and hair-grooming articles are price, quality, design, and (in the case of hair ornaments) style. Because of the largely commodity-type features and the labor-intensive nature of the production of these products, price usually is the most important

²¹ "New Broom Corn Variety a Possible Weapon Against NAFTA," *Broom, Brush & Mop*, Vol. 83, No. 2 (Feb. 1993), p. 43.

²² "A Look at Marketing in the Industry," *Broom, Brush & Mop*, Vol. 81, No. 11 (Nov. 1991), p. 4.

purchasing consideration. The variety of substitutes for these products increases the importance of price as a determining factor affecting demand. In addition, styling of certain products can influence demand. For example, the consumption of hair ornaments is heavily dependent on consumer preferences as hair accessories can change quickly in response to fashion trends. Unlike some of the other summary subsectors, the comb, hairbrush, and hair ornament industry is characterized by brand-name recognition and loyalty. Brand loyalty, however, is not a critical factor influencing demand for brooms and household brushes, especially ones marketed at the low-end of the price spectrum.

Demand for the majority of products in this summary is largely unaffected by the general economic climate since the products are typically necessities of relatively low cost. However, the demand for some specific products is often directly affected by changes in the economy. For example, the demand for professional paint brushes and paint rollers is affected by the fluctuations of the housing market. The demand for certain industrial brushes is derived from the demand for the final products produced by the user industries, e.g., the textile industry. Thus, the demand for the industrial brushes will be affected if there are dramatic changes in the demand for these end products or if there are technological changes in the industries that render the equipment that uses these brushes obsolete.

FOREIGN INDUSTRY PROFILE

Although the products covered in this summary are produced throughout the world, the major foreign producers are located in Taiwan, Korea, China, and Germany. Because these products are easily shipped, proximity to markets is not a primary factor influencing plant location.

As discussed earlier, the majority of the brooms, brushes, and hair-grooming articles are made using low-technology but capital-intensive production processes. Quality control and packaging practices, however, are often relatively labor intensive, making many of the covered products price sensitive. Hence, Taiwan, Korea, and China have a competitive advantage because of their generally lower labor costs. Countries with higher labor costs, such as the United States, Canada, and the European Union²³ members, are the major markets for these countries. In 1990, Taiwan, Korea, and China supplied about half of the total imports of these products in both the United States and the EU. Many of the East Asian suppliers tend to manufacture low-end brooms, brushes, and hair-grooming articles. A significant portion of national production in Taiwan and Korea is exported to the United States and Europe. Production in East Asia is often performed to specification approved by distributors in those markets. Because most of these products are generally low-cost consumer items and

products are generally low-cost consumer items and there is little brand name recognition, imports from the East Asian suppliers have dominated the low-end segment of the world market. The principal U.S. importers of these products are large discount chain stores such as K-Mart and Wal-Mart.

Most production of summary products in China is oriented toward domestic consumption. The principal exceptions are natural bristle hair brushes and paint brushes, for which China is a major world supplier. China is a major producer of natural bristle brushes because it is the primary source of natural bristle. Exports account for the bulk of China's production of these brushes. K-Mart and Wal-Mart are both major U.S. distributors of natural bristle hair brushes. Different brush plants in China produce paint brushes for different markets. Production processes in each plant are geared to satisfy that market's specific design and style preferences. For example, some plants manufacture brushes for export to the United States and Canada, while others produce for export to the Middle East.

Although European manufacturers are less significant suppliers of U.S. imports of brooms, brushes, and hair-grooming articles (in terms of quantity), they are often ranked as world suppliers of all types of high-quality brushes, particularly hair and artists' brushes. The EU's major export markets for brooms, brushes, and hair-grooming articles in 1990 were the United States, accounting for 21 percent of the total, followed by Switzerland (12 percent), and Austria (11 percent). Major export items included certain brooms, combs and barrettes, personal brushes, and artists' brushes. European export items are normally higher priced or more fashion-oriented than their Far Eastern counterparts. European (particularly French) producers are important sources of upper-end hair accessories such as combs and barrettes. 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 fashion perception. Trade between the United States and the members of the EU in brooms, brushes, and hair-grooming articles has historically been limited because low-labor-cost countries are the chief foreign suppliers to both markets for products requiring labor-intensive production and packaging.

Because broom corn brooms are produced close to areas where broom corn is grown, two of the major world producers are Hungary (whiskbrooms) and Mexico (brooms other than whiskbrooms) since they are both leading growers of broom corn. Historically, Mexico has been a competitive supplier of broom corn brooms to the United States. As indicated earlier, most of the broom corn used by the U.S. industry currently is imported from Mexico. Mexican producers have a significant competitive advantage over U.S. producers in terms of labor costs for both manually harvesting the broom corn and manufacturing the final product.

²³ Formerly European Community.

U.S. TRADE MEASURES

Table 1 shows the U.S. rates of duty in effect on January 1, 1993 that were applicable to imports of brooms, brushes, and hair-grooming articles under the Harmonized Tariff Schedule of the United States (HTS). Column 1-general duty rates are listed for countries accorded most-favored-nation (MFN) treatment, as well as preferential duty rates under column 1-special for qualifying goods from countries covered by special tariff programs (see appendix A for an explanation of tariff and trade agreement terms).

Tariff-rate quotas were established by legislation (Public Law 89-241) in 1965 covering selected broom corn brooms and are still in effect. The below-quota category allows specified quantities of such brooms to enter at a duty rate of 8 percent ad valorem. Whiskbrooms wholly or in part of broom corn are classified under HTS subheadings 9603.10.10, 9603.10.25, 9603.10.30; other brooms made of broom corn are classified under HTS subheadings 9603.10.40, 9603.10.50, or 9603.10.60. The below-quota categories for the two products are subheadings 9603.10.10 (whiskbrooms) and 9603.10.40 (other brooms); the quota limit for the latter product includes all entries of such other brooms, but only those valued not over 96 cents each can receive the 8 percent duty rate. Thus, until the quotas are reached in any given year, whiskbrooms valued not over 45 cents each are classified under subheading 9603.10.10; other brooms valued not over 96 cents each are classified under subheading 9603.10.40. The column 1-general rate of duty for both of these subheadings is 8 percent ad valorem. After the tariff-rate quota is reached in a given calendar year, whiskbrooms valued not over 45 cents each are classified under subheading 9603.10.25; all other whiskbrooms of broom corn are classified under 9603.10.30. Rates of duty for these subheadings are 12 cents each and 32 percent ad valorem, respectively.

Similarly, after the tariff-rate quota for other brooms is reached, those brooms valued not over 96 cents each are classified under subheading 9603.10.50; all other brooms of broom corn are classified under 9603.10.60. General rates of duty for these brooms are 32 cents each for subheading 9603.10.50, and 32 percent ad valorem for subheading 9603.10.60. The general rate of duty for vegetable material brooms, other than broom corn, classified under subheading 9603.10.90 is 10 percent ad valorem.

In accordance with subheading 9905.96.03 of subchapter V, chapter 99 of the HTS, staged tariff reductions for the over-tariff-rate-quota brooms in part of broom corn were accelerated pursuant to the United States-Canada Free-Trade Agreement (CFTA); qualifying imports from Canada of whiskbrooms and other brooms, in part of broom corn (provided for in subheadings 9603.10.25, 9603.10.30, 9603.10.50, and 9603.10.60), receive a duty rate of 5 percent ad valorem in 1993 and 4 percent in 1994.

The aggregate trade-weighted average duty rate on brushes and certain dusters and other brooms (not of broom corn), such as upright brooms and push brooms, entering under subheadings 9603.21.00 through 9603.90.80, was 3.7 percent ad valorem in 1992; the trade-weighted average duty on imports of hair-grooming articles (HTS subheadings 9615.11.10-9615.90.60) was 8.1 percent in 1992.

All imports of brooms, brushes, and hair-grooming articles are eligible for duty-free entry if imported from beneficiary countries under the Caribbean Basin Economic Recovery Act (CBERA), if imported under the free-trade agreement with Israel,²³ or if imported under the Andean Trade Preference Act (ATPA). All articles covered by this summary except brooms wholly or in part of broom corn (under subheadings 9603.10.10-9603.10.60) are eligible for duty-free entry under the Generalized System of Preferences (GSP). U.S. imports of the summary products entering under the CBERA totaled \$7 million in 1992; imports entering under GSP totaled \$46 million.

The recently completed (December 1993) GATT Uruguay Round of trade negotiations may result in further reductions in U.S. and foreign duties on the articles covered by this summary. The U.S. Uruguay Round schedule of concessions was not available at the time that this summary was prepared.

The North American Free-Trade Agreement (NAFTA) was signed on December 17, 1993. In the case of most brooms and brushes (subheadings 9603.10.10-9603.90.80), U.S. tariffs on imports from Mexico meeting the NAFTA rules of origin requirements were reduced to zero on January 1, 1994. The rate of duty on certain brooms under subheading 9603.10.60 (other brooms, wholly or in part of broom corn exceeding 100,000 dozen per year) will be reduced on January 1 of the following years, as shown here: 1994, 22.4 percent; 2000, 16 percent; and 2005, free. Under the implementing legislation for NAFTA (Public Law 103-182), the Administration is required to monitor U.S. imports of broom corn brooms from Mexico. If the elimination of tariffs under the Agreement results in increased imports of Mexican brooms and causes or threatens to cause serious injury to U.S. producers of such brooms, the Executive Branch is required to take action consistent with the Agreement and U.S. law to rectify the situation. Moreover, the Executive Branch is required to consult with the Congress concerning any developments with respect to imports of Mexican brooms to ensure the continuing health and survival of the U.S. broom corn broom industry. Mexico eliminated its duties on imports of all summary products from the United States effective January 1, 1994.

The President of the American Brush Manufacturers Association stated that there is concern within the broom and brush industry about the impact of NAFTA on the industry. Some industry members

²⁴ United States-Israel Free Trade Area Implementation Act (see appendix A).

(paint brush manufacturers in particular) have already established maquiladora²⁴ operations in Mexico to take advantage of the lower labor costs, and these firms supported the NAFTA. Broom corn broom manufacturers, on the other hand, have strongly opposed the NAFTA. In 1990, legislation changed the tariff treatment in the HTS of certain brooms that contain broom corn to restore the higher duties imposed under the former Tariff Schedules of the United States (TSUS) through 1988 (i.e., to “brooms wholly or in part of broom corn”). The measure assesses a 32 percent ad valorem duty rate on imports of higher-value brooms made of broom corn. Broom corn broom manufacturers believe their industry is threatened by staged elimination of these recently restored duties on U.S. imports from Mexico. In addition, these manufacturers assert that blind persons comprise an important share of their labor force and could face unemployment because of NAFTA. However, although the industry is concerned about the potential negative impact on employment resulting from the NAFTA, those manufacturers that import a substantial amount of raw materials (such as broom corn) or parts (such as wooden handles) from Mexico for the production of their brooms and brushes could benefit from the agreement.

No known U.S. nontariff trade measures, other than quotas on broom corn brooms, significantly influence trade in the products covered in this report.

FOREIGN TRADE MEASURES

The most significant markets for U.S. exports of brooms, brushes, and hair-grooming articles are Canada, the EU, and Mexico. As previously noted, duty rates in both Canada and the United States are currently being reduced and are scheduled to be eliminated by January 1, 1998, for trade between the two countries. In 1992, remaining Canadian duty rates on imports from the United States of brooms, brushes, and hair-grooming articles ranged from 1 to 16 percent. The rates of duty imposed by the EU ranged between 5 and 10 percent. Mexico levies a 20-percent duty on all the items covered in this summary except HTS 9603.50.00 (brushes constituting parts of machines, appliances, or vehicles), for which a 15-percent duty is collected. As noted earlier, the NAFTA was signed on December 17, 1993. Under the Agreement, tariffs for qualified U.S. products entering Mexico will be eliminated over a 15-year period. In the case of most summary products the duty was eliminated on January 1, 1994.

²⁵ “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.

No known foreign nontariff trade measures significantly influence trade in the products covered in this report.

U.S. MARKET

Consumption

Between 1988 and 1992, apparent U.S. consumption increased annually. The demand for most brooms is tied to the number of households and type of floor covering. However, consumption for many types of brushes, especially hairbrushes and hair ornaments, is closely related to factors of style and to popular trends or fads. Also, the increase in consumption of most personal brushes, such as toothbrushes, is tied to an increasing population and improved education about health matters. New product development has not been a significant factor in maintaining the consistent upward trend in consumption for brooms, brushes, and hair-grooming articles; rather the industries’ increased emphasis on using bold new colors, often employing fashion merchandising techniques, and more frequent changing of point-of-purchase packaging has maintained consumer interest.

Apparent U.S. consumption of brooms, brushes, and hair-grooming articles increased at an average annual rate of 7.0 percent during 1988-92, from \$1.4 billion to \$1.9 billion (table 2 and figure 3). The rise occurred because of both an increase in producers’ shipments and imports, with imports continuing to hold a fourth of the U.S. market. Despite the U.S. recession during the period, sales in some segments of the industry, certain paint brushes for example, benefitted as they are in the “do-it-yourself” market.

Production

U.S. production, as reflected in estimated domestic shipments of brooms, brushes, and hair-grooming articles, rose each year during 1988-92, from almost \$1.2 billion to \$1.5 billion, representing an average annual growth rate of 6.4 percent (table 2). As stated earlier, brooms and brushes accounted for over 90 percent of the total shipments covered in this summary. The stability of U.S. production reflects the patterns of U.S. apparent consumption discussed above, and some growth in U.S. exports.

Imports

Overall, U.S. imports of brooms, brushes, and hair-grooming articles increased at an average annual growth rate of 8.6 percent during 1988-92, faster than that of U.S. producers’ shipments, rising from \$337 million in 1988 to \$468 million in 1992 (table 3).²⁵ Consequently, imports’ share of the U.S. market showed a slight gain of 1 percentage point during

²⁶ U.S. Department of Commerce data show that in 1991, approximately 12 percent of the total value of imports was accounted for by related parties.

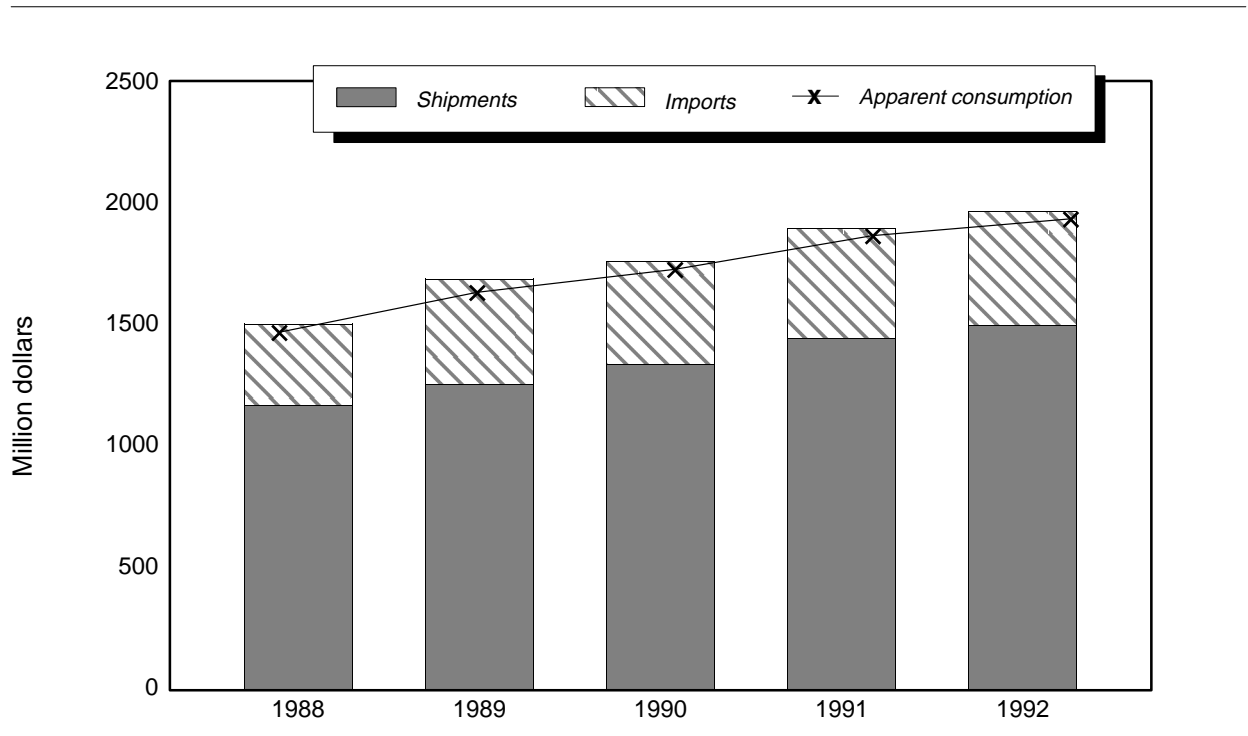
Table 2
Brooms, brushes, and hair-grooming articles: U.S. producers', shipments, exports of domestic merchandise, imports for consumption, and apparent consumption, 1988-92

Year	U.S. producers' shipments ¹	U.S. exports	U.S. imports	Apparent U.S. consumption	Ratio of imports to consumption
	<i>Million dollars</i>				<i>Percent</i>
1988	1,169	90	337	1,416	24
1989	1,255	57	436	1,634	27
1990	1,339	74	423	1,688	25
1991	1,445	95	453	1,803	25
1992	1,500	110	468	1,858	25

¹ Estimated by the staff of the U.S. International Trade Commission, based on official statistics of the U.S. Department of Commerce.

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

Figure 3
Brooms, brushes, and hair-grooming articles: U.S. imports, producers' shipments,¹ and apparent consumption, 1988-92²



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.

Table 3
Brooms, brushes, and hair-grooming articles: U.S. imports for consumption, by principal sources, 1988-92

(In millions of dollars)

Source	1988	1989	1990	1991	1992
Taiwan	(1)	128	113	113	96
Korea	(1)	77	78	94	89
China	(1)	27	39	63	89
Germany ²	(1)	16	16	22	26
Japan	(1)	20	18	17	19
Hong Kong	(1)	66	54	21	19
Thailand	(1)	4	10	14	17
Italy	(1)	16	15	15	15
Mexico	(1)	25	17	26	12
Canada	(1)	5	8	8	11
All other	(1)	53	56	60	74
Total	337	436	423	453	468

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

² U.S. imports from eastern Germany, formerly German Democratic Republic, are included in "Germany" effective July 1, 1990.

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

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

1988-92 (24 percent to 25 percent), although dropping from a peak of 27 percent in 1989 (table 3 and figure 3). The great majority of these imports come from Far Eastern suppliers, principally Taiwan, Korea, and China. In 1992, Taiwan accounted for 21 percent of the total imports; Korea, 19 percent; and China, 19 percent. This was a shift from 1989 when Taiwan made-up 29 percent of the total; Korea, 18 percent; and China, only 6 percent (figure 4). Hong Kong's share of the U.S. import market dropped from 15 percent to 4 percent during 1989-92. To a large extent, this reflects a shift in sourcing by major U.S. importers/distributors from contract suppliers in Taiwan and Hong Kong to producers in China as production costs, especially labor, have risen in these three newly industrialized countries.

Imports in several product sectors rose significantly over the period.²⁶ Hair accessories, including barrettes, clips, and bobby pins, topped all other product categories in terms of the value of imports, representing 31 percent of the total in 1992 (figure 5). U.S. imports of hair accessories increased 90 percent between 1988 and 1991, increasing from \$81 million to \$153 million (table C-10). However, in 1992, these imports fell 6 percent below their 1991 level, or by \$9.7 million. Taiwan, Korea, and China were major sources for hair accessories, accounting for 82 percent of such imports in 1992. Historically, Taiwan had been the chief supplier of these items. In recent years, imports from Korea and China have grown rapidly, partly because of a shift of production

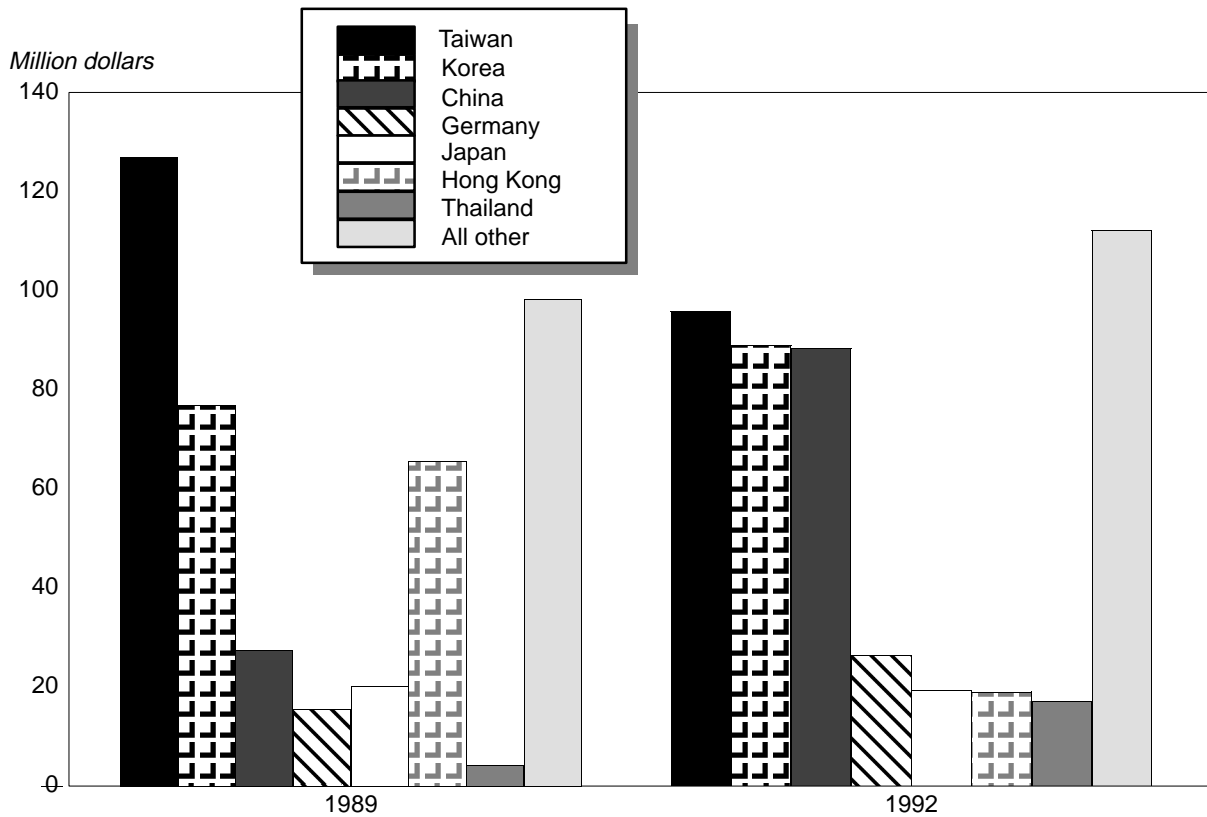
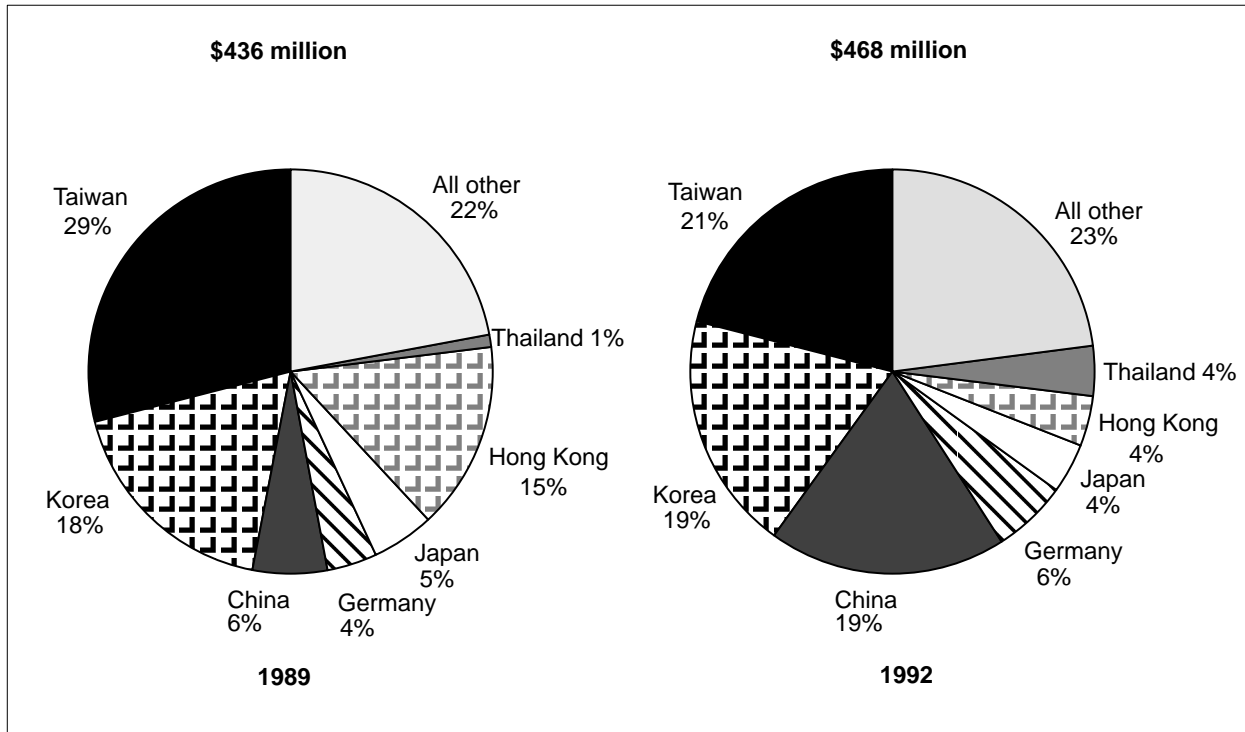
from Taiwan and Hong Kong to China. Imports from Taiwan, for example, fell by 39 percent during 1989-92 from \$67 million to \$41 million; imports from Hong Kong fell by 58 percent to \$3.5 million. Industry sources associate the shift to production in China with the appreciation of the Taiwan dollar relative to the U.S. dollar during the period, rising labor costs in Taiwan, and a reportedly shrinking supply of labor willing to perform low-wage, assembly-type tasks. Thailand has emerged as an alternative to China for companies seeking lower-cost production of labor-intensive articles.

Feather dusters, squeegees, and brushes "not specifically provided for" in other tariff subheadings made up the second largest category of imports accounting for 16 percent of the overall imports in 1992 (figure 5). Imports of these products rose by 36 percent during 1988-92, from \$63 million to \$86 million in 1992 (see table C-8). The leading suppliers were Taiwan, Italy, China, Canada, and Korea; all but Taiwan showed substantial gains during the period. The diversity of the items in this catch-all category of products is reflected in the geographic dispersion of the leading suppliers in 1992. Asian suppliers Taiwan, China, and Korea accounted for 37 percent of U.S. imports; European suppliers Italy, Ireland, and Germany, 24 percent; Latin American suppliers Brazil and Mexico, 12 percent; and Canada, 9 percent. However, the sharpest growth in imports came from China, rising from \$2.3 million in 1989 to \$8.6 million in 1992 (10 percent of total imports).

Hairbrushes and other personal brushes accounted for 13 percent of aggregate summary imports in 1992 (figure 5). Such imports grew from \$46 million in 1988 to \$68 million in 1991, or by 50 percent, before declining to \$62 million in 1992 (table C-4). Asian producers Taiwan, China, Korea, and Hong Kong were

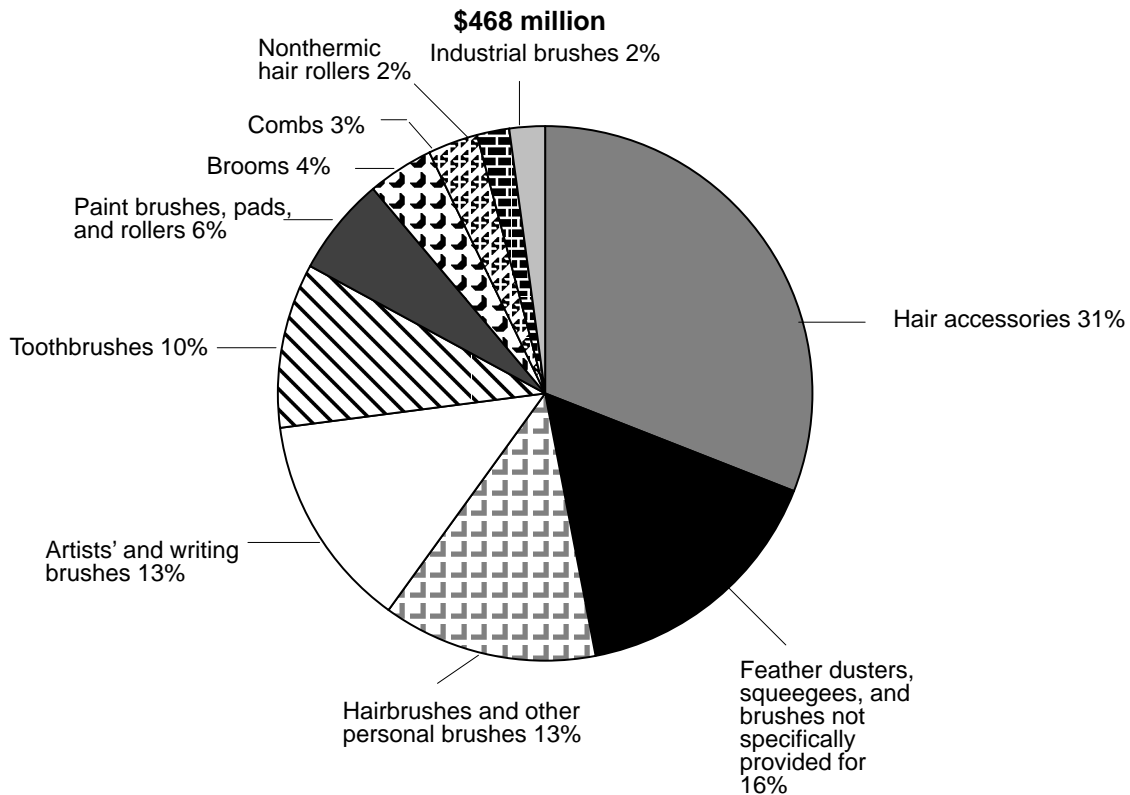
²⁷ For detailed import data on individual market segments of the brooms, brushes, and hair-grooming articles industries, see appendices B (figures B-1 through B-11) and C (tables C-1 through C-11).

Figure 4
Brooms, brushes, and hair-grooming articles: U.S. imports from principal sources, by share of total, and by value, 1989 and 1992



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

Figure 5
U.S. imports, by selected product segment, in terms of value, 1992



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

the principal suppliers of these items, accounting for a combined 81 percent of the total in 1992. China accounted for virtually all of the growth during 1989-92, as imports expanded from \$2.9 million to \$17.5 million (28 percent of total imports).

U.S. imports of artists' brushes, writing brushes, and other similar brushes, also accounted for 13 percent of aggregate summary imports in 1992 (figure 5). Annual imports of these items averaged almost \$60 million during 1989-92 and totaled \$62 million in 1992 (table C-5). Korea was by far the principal supplier of these items and during 1989-92 accounted for nearly 40 percent or more of the total annually. Quality tends to be a more important factor of competition for these brushes than for some other categories of summary products, and better-quality brushes are hand-made. Korea provides a good mix of relatively low-cost artists' brushes with good-quality workmanship.

Toothbrushes made up 10 percent of summary imports in 1992 (figure 5), and amounted to \$46 million (table C-3). Better quality toothbrushes are imported from Europe; lower quality toothbrushes are imported from Asia. Together, Germany, the Netherlands, and the United Kingdom supplied 44

percent of U.S. imports of toothbrushes in 1992; 43 percent came from Hong Kong, China, Taiwan, Thailand, and Korea.

FOREIGN MARKETS

Foreign Market Profile

U.S. producers of brooms, brushes, and hair-grooming articles are not export oriented. Stiff competition from countries with lower labor costs, compounded by high tariffs in potential markets, reportedly discouraged the U.S. industry from aggressively pursuing export markets for these products. U.S. exports represented 7 percent of U.S. producers' shipments in 1992, an increase of less than one percentage point over 1988. Canada, the EU, and Mexico were the major U.S. markets for the products covered in this summary (table 4).

The CFTA appears to have helped make Canada by far the top U.S. market in 1992, accounting for 39 percent of total exports. U.S. exports to Canada increased significantly during the latter three years of the 1989-92 period, concurrent with staged reductions of Canadian tariffs under the CFTA. During 1989-92,

Table 4
Brooms, brushes, and hair-grooming articles: U.S. exports of domestic merchandise, by principal markets, 1988-92

(In thousands of dollars)

Market	1988	1989	1990	1991	1992
Canada	(1)	9,674	28,079	37,053	42,921
Mexico	(1)	8,819	9,006	7,434	10,813
Japan	(1)	7,546	6,545	6,594	6,023
Germany ²	(1)	1,309	1,206	2,823	5,078
Italy	(1)	1,804	2,447	3,006	3,713
France	(1)	2,048	1,353	3,654	3,447
Australia	(1)	1,683	1,505	1,838	2,528
Korea	(1)	2,163	2,183	5,861	2,251
Venezuela	(1)	322	487	852	2,175
Argentina	(1)	41	265	949	1,838
All other	(1)	21,655	20,460	25,161	29,501
Total	89,746	57,062	73,537	95,223	110,289

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

² U.S. imports from eastern Germany, formerly German Democratic Republic, are included in "Germany" effective July 1, 1990.

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

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

the U.S. trade surplus with Canada in brooms, brushes, and hair-grooming articles increased from \$5 million to \$32 million. Rising production costs in Canada compared with those costs in the United States contributed to the increased competitiveness of U.S.-made products in the Canadian market.

The European Union was the second leading foreign market for U.S. products in 1992, accounting for 17 percent of U.S. exports (\$19 million). (From an EU perspective, the United States accounted for 8 percent of the EU's total imports in 1990.) The principal item purchased by the EU was toothbrushes, which accounted for over a fourth of U.S. exports of the summary products to the EU. Nevertheless, the United States had a \$20 million deficit with the EU in the toothbrush trade in 1992; the trade deficit with the EU for all of the summary products was \$56 million in 1992.

Mexico, the third-leading U.S. foreign market, accounted for 10 percent of the U.S. exports in 1992. As stated earlier, the NAFTA eliminated Mexican tariffs on virtually all of the summary products effective January 1, 1994. Some industry sources believe that the elimination of tariffs will boost U.S. exports to that market. U.S. paint brush manufacturers, in particular, who already have maquiladora operations in Mexico to take advantage of the lower labor costs, have already begun or stepped up their marketing activities in Mexico.

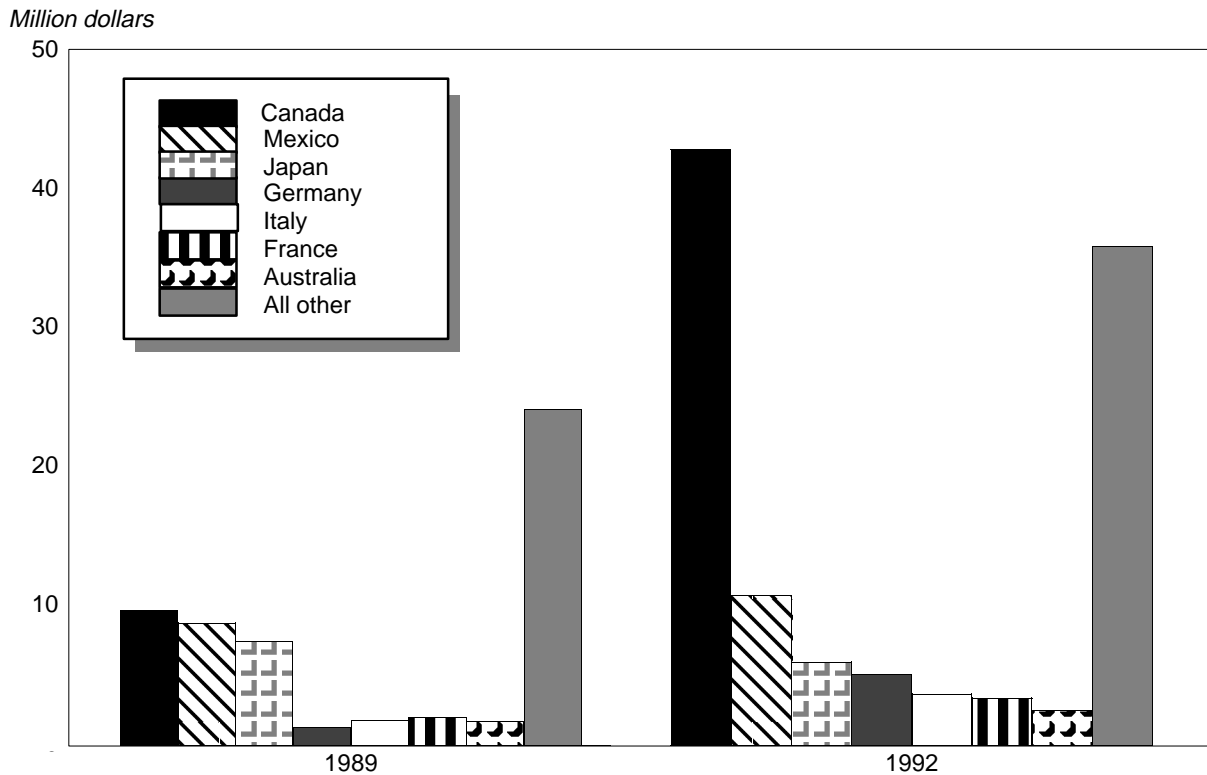
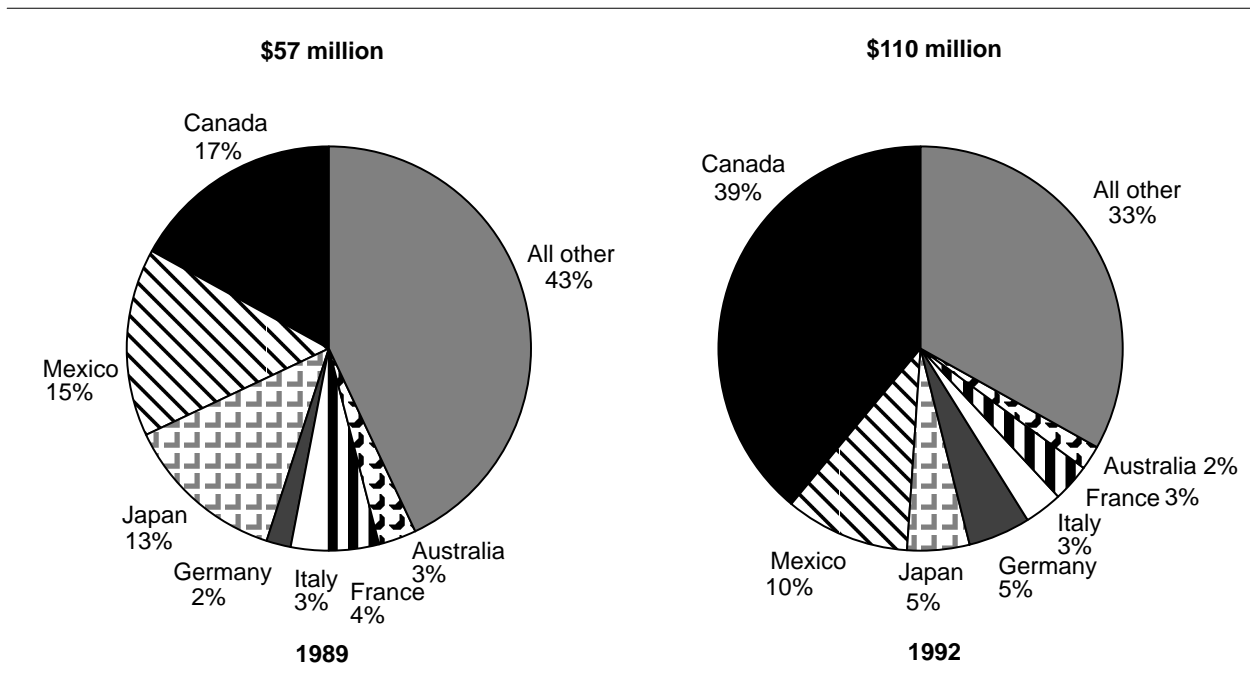
Several other Latin American nations are also lowering barriers to their markets. Although exports to the region are still small, the high esteem Latin American consumers have for the made-in-the-U.S. label offers realistic expectations for growth in U.S. exports to South America and the Caribbean.

U.S. Exports

Although there has been some growth in domestic exports in recent years, as indicated earlier, exporting has not been a priority for the U.S. industries producing the summary products. U.S. exports of brooms, brushes, and hair-grooming articles rose from \$90 million in 1988 to \$110 million in 1992, or by 23 percent, but accounted for only 7 percent of U.S. producers' shipments in 1992 (table 4). Virtually all of the rise in exports during the period was accounted for by exports to Canada, the leading U.S. export market (figure 6). Between 1989 and 1992, U.S. exports to Canada quadrupled, rising from \$10 million in 1989 to \$43 million in 1992, and accounted for 39 percent of total U.S. exports in the latter year. In addition to some of the increase in U.S. exports to Canada being attributable to the implementation of the U.S.-Canada Free-Trade Agreement, as discussed earlier, other factors contributing to increased exports to Canada included proximity to the United States, the appreciation of the Canadian dollar relative to the U.S. dollar, and rising labor costs in Canada compared with such costs in the United States. During 1988-92, average hourly compensation costs²⁷ in Canada rose by 28 percent to \$17.31. By comparison, during the same period, compensation costs in the United States rose by only 11 percent to \$15.45. In 1992, Mexico, Japan, and Germany trailed Canada as leading foreign markets, each accounting for 10 percent or less of total U.S. exports.

²⁸ Hourly compensation is defined as (1) all payments made directly to the worker, before payroll deductions of any kind, and (2) employer social insurance expenditures.

Figure 6
Brooms, brushes, and hair-grooming articles: U.S. exports to leading markets, by share of total, and by value, 1989 and 1992



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

Between 1988 and 1992, substantial export growth occurred in several product sectors.²⁸ U.S. exports of toothbrushes, also the largest sector, showed the most significant gain during the period, as exports more than doubled to \$32 million, or 29 percent of total exports (table C-13). A large portion of the rise in exports was accounted for by exports to Canada, the leading U.S. export market for toothbrushes. Such exports climbed from \$2.8 million in 1989 to \$9.2 million in 1992. Exports also rose rapidly to Mexico and several countries in Europe, reflecting increased awareness world-wide of dental hygiene and an appreciation for the high quality of U.S.-made toothbrushes.

U.S. exports of paint brushes, pads, and rollers increased from \$2 million in 1988 to nearly \$16 million in 1992 (table C-16). Exports to Canada again contributed to most of the increase, as exports of these items to the Canadian market grew during 1989-92, from \$476,000 to \$8.9 million. During the same period, exports to Mexico increased from \$569,000 to \$1.9 million. Exports of industrial brushes dropped sharply in 1989, falling from \$52 million in 1988 to \$10 million in 1989, before climbing again to \$28 million in 1992 (table C-17). Aside from Canada, the leading markets vary substantially from year to year as U.S. firms fill relatively expensive, one-time orders for brushes that are custom-made to fit specific pieces of machinery.

²⁹ For detailed export data on individual product sectors see appendix C (tables C-12 through C-19).

Other principal products exported from the United States during 1988-92 were (1) combs and other hair accessories, exports of which remained relatively stable during most of the period, and totaled \$13 million in 1992 (table C-18);²⁹ (2) artists' brushes, writing brushes, and other similar brushes, which rose from \$3.1 million in 1988 to \$9.5 million in 1992 (table C-15);³⁰ and hair brushes and other personal brushes, of which exports totaled nearly \$7 million in 1992 (table C-14).³¹

U.S. Trade Balance

U.S. imports of brooms, brushes, and hair-grooming articles exceeded U.S. exports by a ratio of more than 4 to 1 in 1992, resulting in a trade deficit of \$358 million (table 5 and figure 7). Canada was the only major U.S. trading partner for the summary products with whom the United States had a trade surplus in 1992 (\$32 million) (figure 8). The largest bilateral trade deficits were with Taiwan (\$95 million), China (\$89 million), Korea (\$87 million), and the European Union (\$56 million). The trade deficit with Hong Kong decreased from \$64 million to \$17 million during 1988-92, as manufacturers there shifted production to China.

³⁰ The top markets were Mexico, Canada, and South America.

³¹ The leading markets were Canada and the EU.

³² Sixty percent of U.S. exports went to Canada and Mexico.

Table 5
Brooms, brushes, and hair-grooming articles: U.S. exports of domestic merchandise, imports for consumption, and merchandise trade balance, by selected countries and country groups, 1988-92¹
(Million dollars)

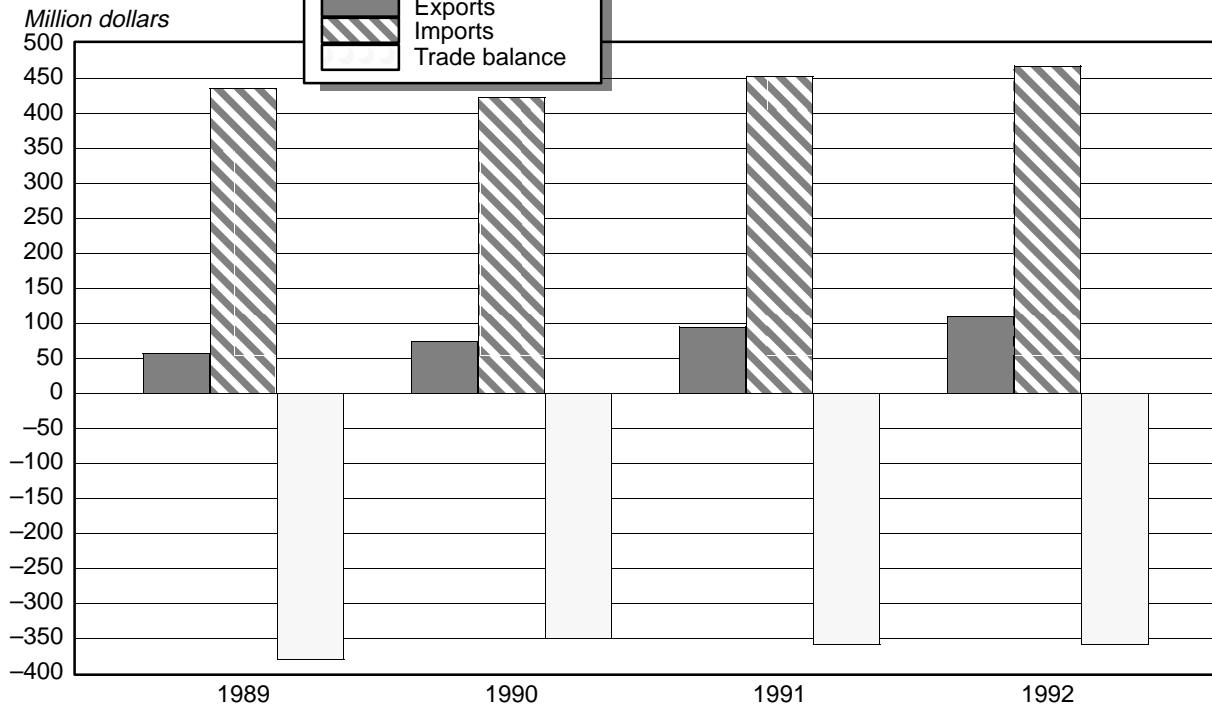
Item	1988	1989	1990	1991	1992
U.S. exports of domestic merchandise:					
Taiwan	(2) 1	1	1	1	1
Korea	(2) 2	2	2	6	2
China	(2) 0	0	0	0	0
Canada	(2) 10	28	37	43	43
Germany	(2) 1	1	3	5	5
Japan	(2) 8	7	7	6	6
Mexico	(2) 9	9	7	11	11
Hong Kong	(2) 2	2	2	2	2
Italy	(2) 2	2	3	4	4
Thailand	(2) 0	0	1	1	1
All other	(2) 23	21	29	36	36
Total	70	57	74	95	110
EU-12	(2) 13	11	17	19	19
OPEC	(2) 2	2	3	6	6
ASEAN	(2) 2	2	2	2	2
CBERA	(2) 4	4	4	5	5
Eastern Europe	(2) 0	0	0	1	1
U.S. imports for consumption:					
Taiwan	(2) 128	113	113	96	96
Korea	(2) 77	78	94	89	89
China	(2) 27	39	63	89	89
Canada	(2) 5	8	8	11	11
Germany	(2) 16	16	22	26	26
Japan	(2) 20	18	17	19	19
Mexico	(2) 25	17	26	12	12
Hong Kong	(2) 66	54	21	19	19
Italy	(2) 16	15	15	15	15
Thailand	(2) 4	10	14	17	17
All other	(2) 53	56	60	74	74
Total	337	436	423	453	468
EU-12	(2) 60	58	69	75	75
OPEC	(2) 1	2	2	5	5
ASEAN	(2) 6	14	17	24	24
CBERA	(2) 7	7	7	13	13
Eastern Europe	(2) 1	0	1	0	0
U.S. merchandise trade balance:					
Taiwan	(2) -127	-112	-112	-95	-95
Korea	(2) -75	-76	-88	-87	-87
China	(2) -27	-39	-63	-89	-89
Canada	(2) 5	20	29	32	32
Germany	(2) -15	-15	-19	-21	-21
Japan	(2) -12	-11	-10	-13	-13
Mexico	(2) -16	-8	-19	-1	-1
Hong Kong	(2) -64	-52	-19	-17	-17
Italy	(2) -14	-13	-12	-11	-11
Thailand	(2) -4	-10	-13	-16	-16
All other	(2) -30	-35	-31	-38	-38
Total	-267	-379	-349	-358	-358
EU-12	(2) -47	-47	-52	-56	-56
OPEC	(2) 1	0	1	1	1
ASEAN	(2) -4	-12	-15	-22	-22
CBERA	(2) -3	-3	-3	-8	-8
Eastern Europe	(2) -1	0	-1	1	1

¹ Import values are based on customs value; 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."

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

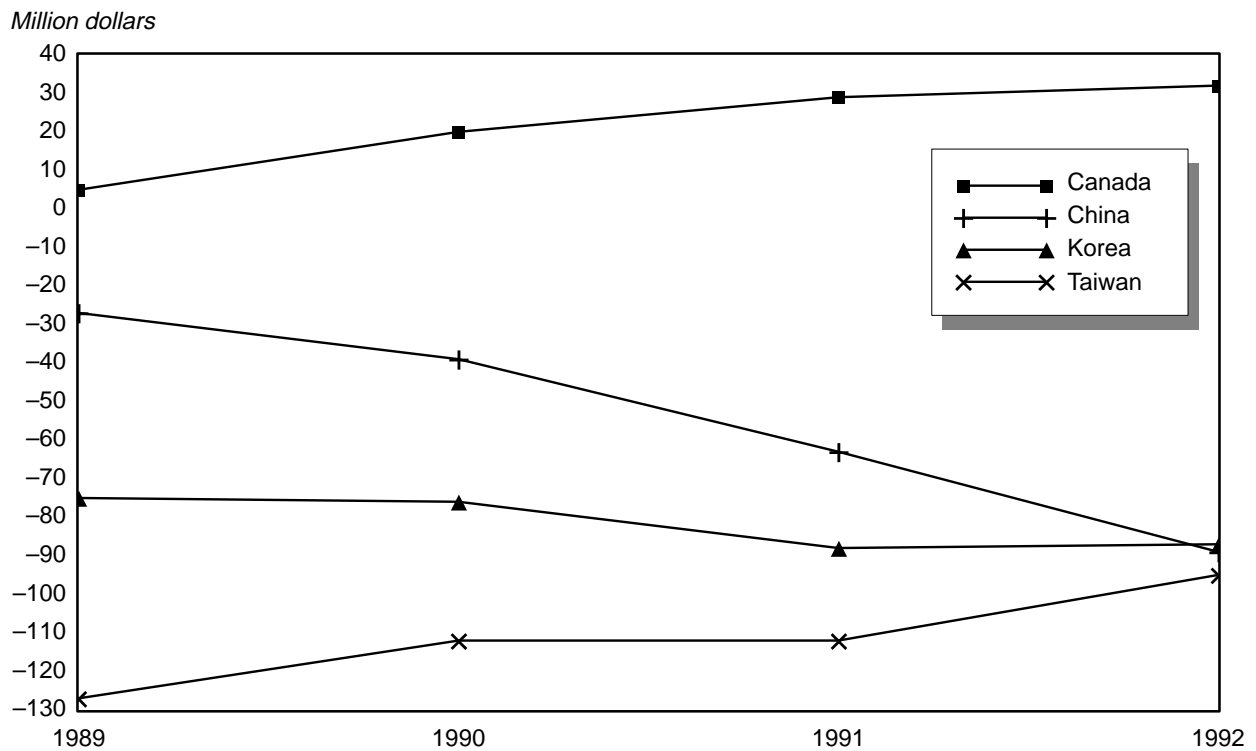
Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure 7
Brooms, brushes, and hair-grooming articles: U.S. exports, imports, and trade balances, 1989-92



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

Figure 8
Brooms, brushes, and hair-grooming articles: Bilateral U.S. trade balances, 1989-92



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

APPENDIX A
EXPLANATION OF TARIFF AND TRADE AGREEMENT TERMS

TARIFF AND TRADE AGREEMENT TERMS

The *Harmonized Tariff Schedule of the United States* (HTS) replaced the *Tariff Schedules of the United States* (TSUS) effective January 1, 1989. Chapters 1 through 97 are based upon 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 (1) those enumerated in general note 3(b) to the HTS plus Serbia and Montenegro, whose products are dutied at the rates set forth in *column 2*, and (2) countries whose goods are subject to embargo. Goods from Albania, Armenia, Belarus, Bulgaria, the People's Republic of China, the Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Mongolia, Poland, Russia, Slovakia, Turkmenistan, and the Ukraine are currently eligible for MFN treatment, as are the other republics of the former Socialist Federal Republic of Yugoslavia. 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. Where eligibility for special tariff treatment is not claimed or established, goods are dutiable at column 1-general rates.

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 September 30, 1994. Indicated by the symbol "A" or "A*" in the special subcolumn of column 1, the GSP provides duty-free entry to eligible articles the product of and imported

directly from designated beneficiary developing countries, as set forth in general note 3(c)(ii) to the HTS.

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

Preferential nonreciprocal duty-free or reduced-duty treatment in the special subcolumn of column 1 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 in 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 3(c)(ix) 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* (APTA) (general note 3(c)(iii)) and the *Agreement on Trade in Civil Aircraft* (ATCA) (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 111 signatories. The GATT's main obligations relate to most-favored-nation treatment, the maintenance of scheduled concession rates of duty, and national (nondiscriminatory) treatment for imported products; the GATT also provides the legal framework for customs valuation standards, "escape clause" (emergency) actions, antidumping and countervailing duties, and other measures. Results of GATT-sponsored multilateral tariff negotiations are set forth by

way of separate schedules of concessions for each 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, man-made 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 many supplying countries, including the four largest suppliers: China, Hong Kong, the Republic of Korea, and Taiwan.

APPENDIX B
FIGURES

Figure B-1
Brooms of broom corn: U.S. imports from principal sources, by value, 1989 and 1992

Thousand dollars

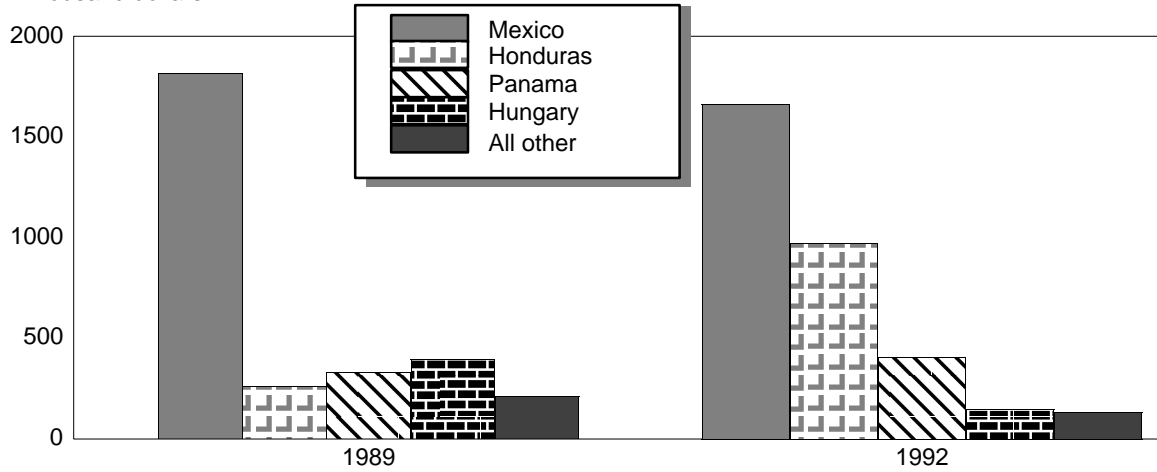


Figure B-2
Brooms other than of broom corn: U.S. imports from principal sources, by value, 1989 and 1992

Thousand dollars

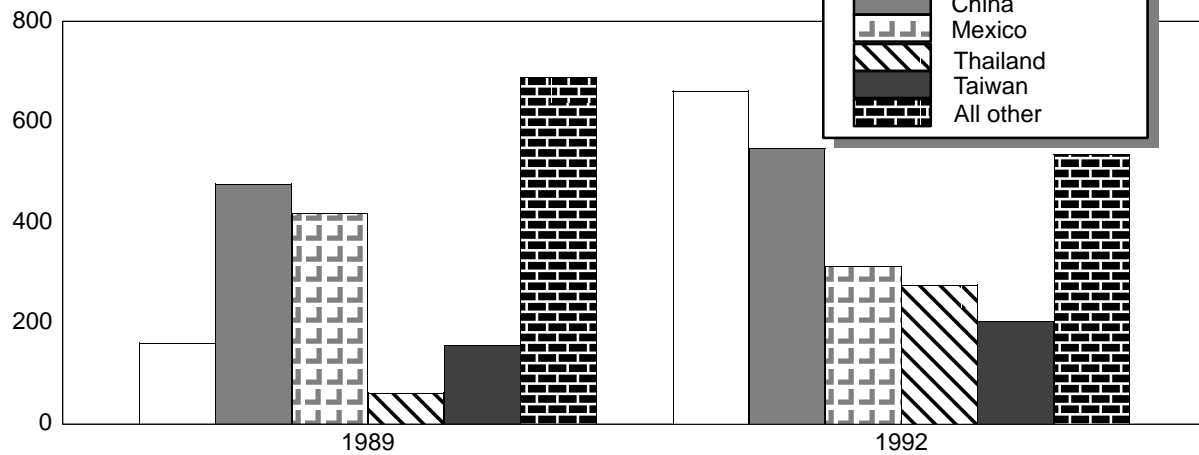
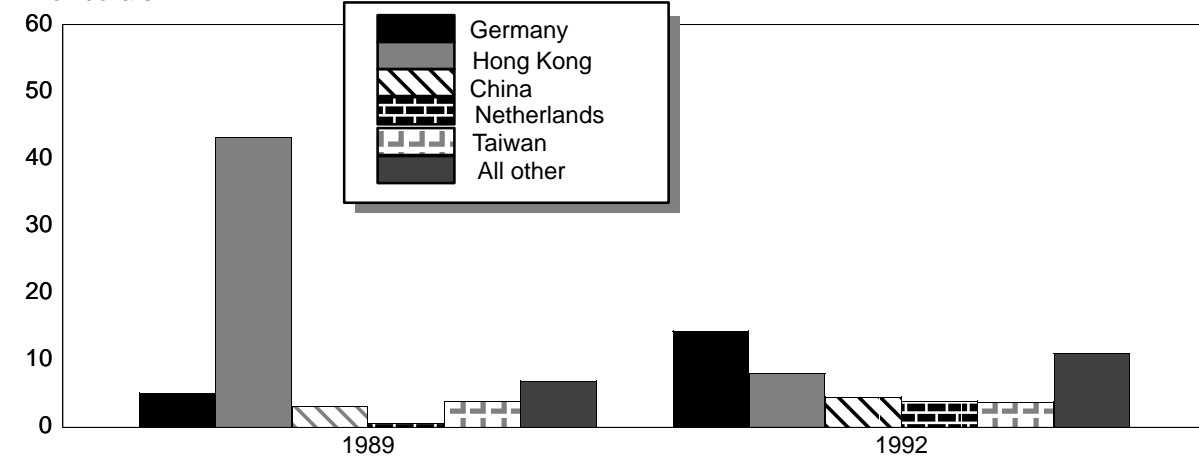


Figure B-3
Toothbrushes: U.S. imports from principal sources, by value, 1989 and 1992

Million dollars



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

Figure B-4
Hairbrushes, cosmetic brushes, and other personal brushes: U.S. imports from principal sources, by value, 1989 and 1992

Million dollars

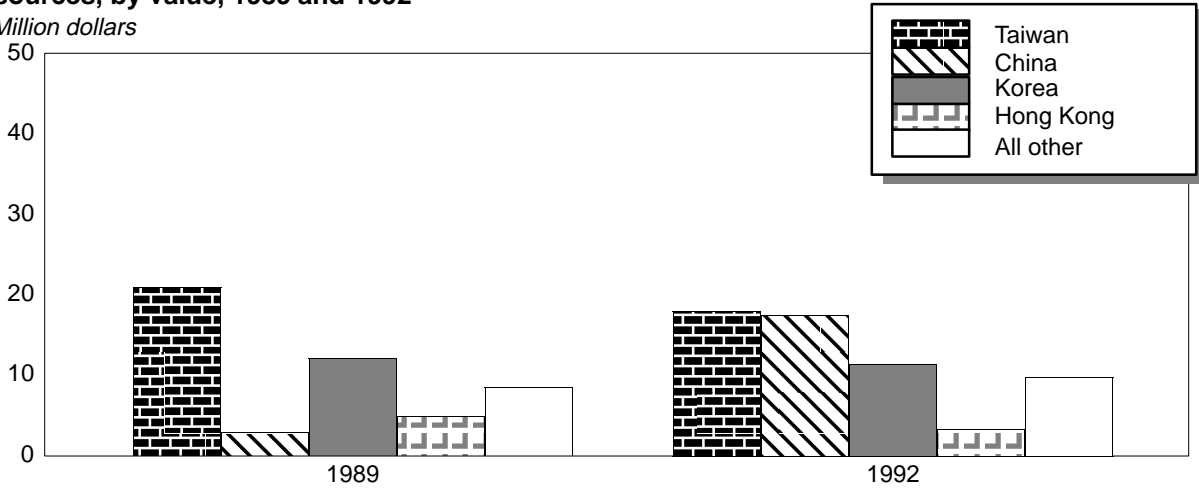


Figure B-5
Artists' brushes, writing brushes, and other similar brushes: U.S. imports from principal sources, by value, 1989 and 1992

Million dollars

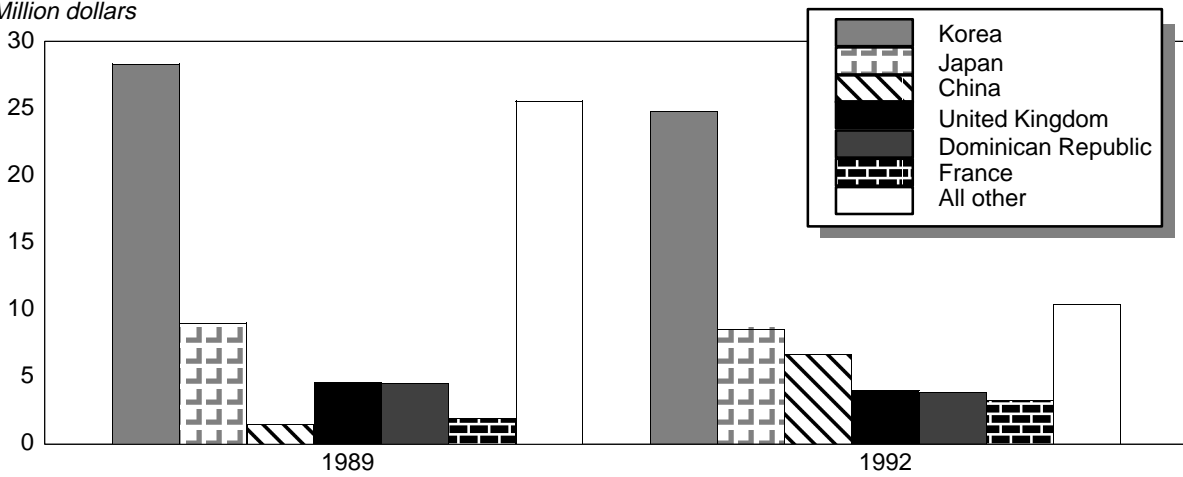


Figure B-6
Paint brushes, pads, and rollers: U.S. imports from principal sources, by value, 1989 and 1992

Million dollars



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

Figure B-7
Industrial brushes: U.S. imports from principal sources, by value, 1989 and 1992

Thousand dollars

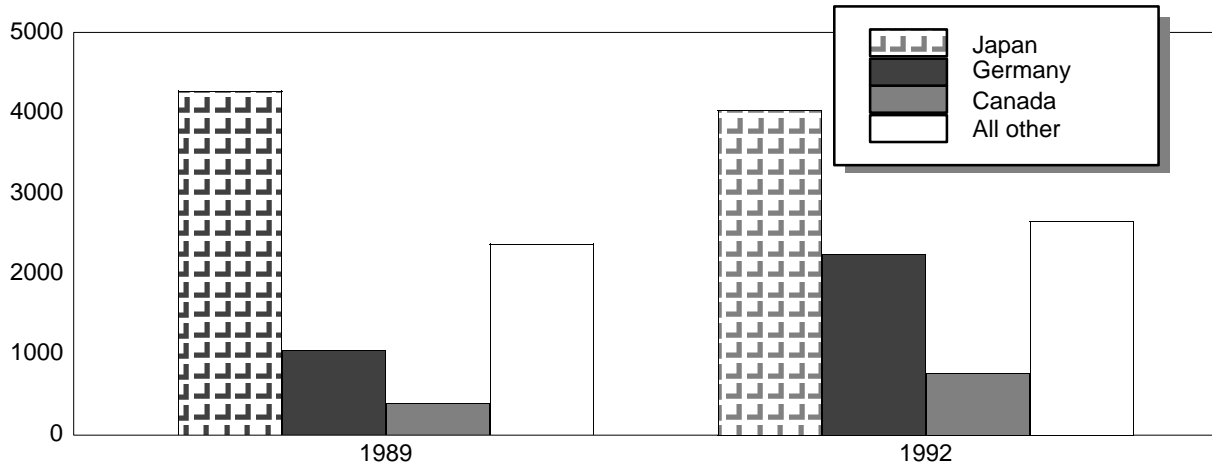


Figure B-8
Feather dusters, squeegees, and brooms and brushes not specifically provided for: U.S. imports from principal sources, by value, 1989 and 1992

Million dollars

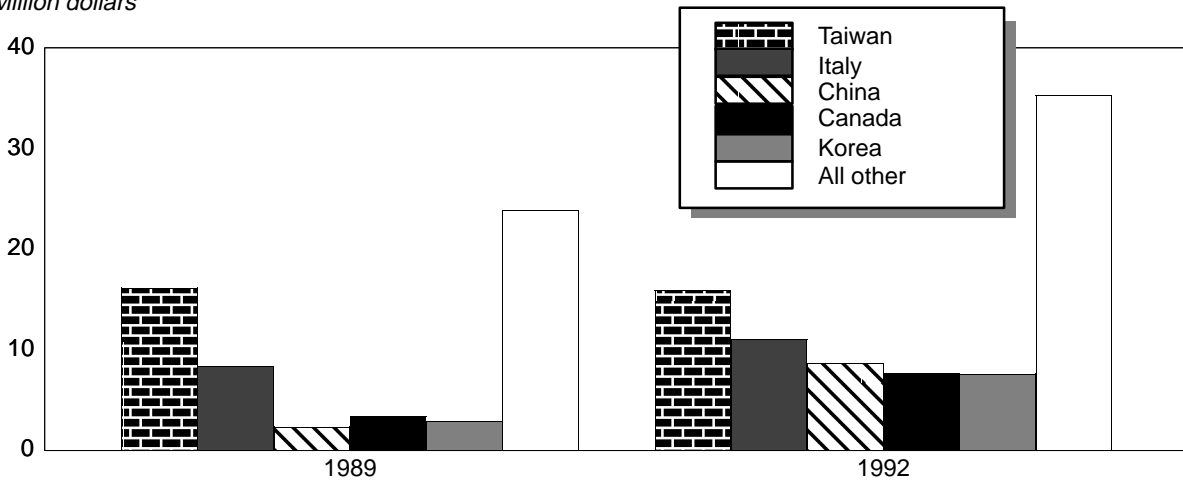
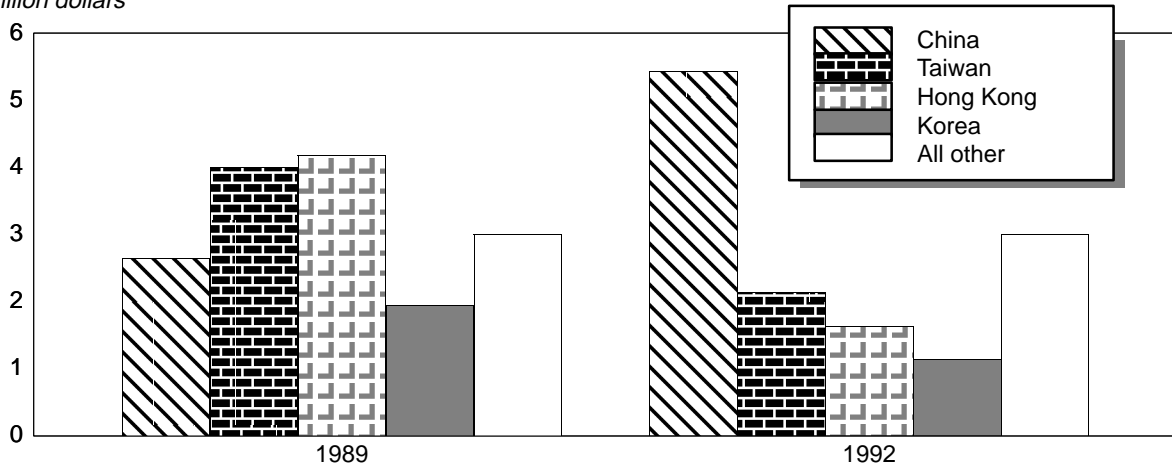


Figure B-9
Combs: U.S. imports from principal sources, by value, 1989 and 1992

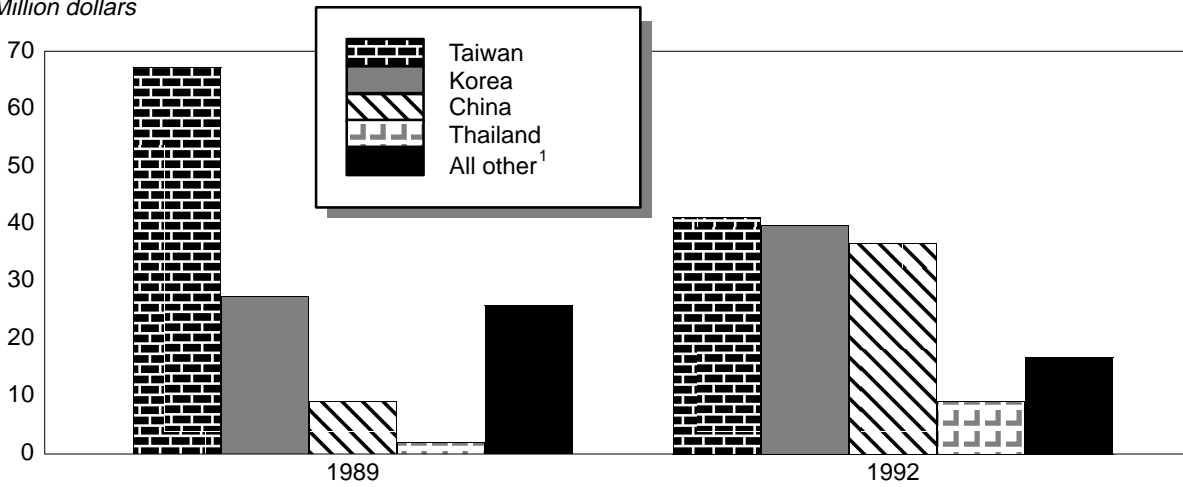
Million dollars



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

Figure B-10
Hair accessories: U.S. imports from principal sources, by value, 1989 and 1992

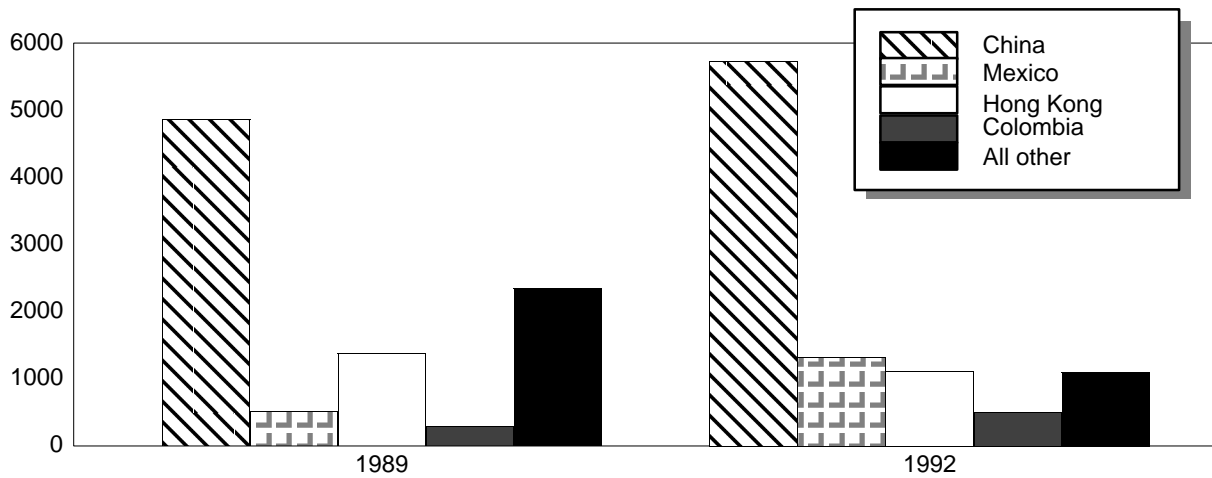
Million dollars



¹ Included \$8.4 million from Hong Kong in 1989; Hong Kong's imports fell to \$3.5 million in 1992.

Figure B-11
Nonthermic hair rollers: U.S. imports from principal sources, by value, 1989 and 1992

Thousand dollars



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

APPENDIX C
STATISTICAL TABLES

Table C-1
Brooms of broom corn: U.S. imports for consumption, by principal sources, 1988-92

(In thousands of dollars)

Source	1988	1989	1990	1991	1992
Mexico	(1)	1,817	1,800	2,429	1,664
Honduras	(1)	262	439	371	976
Panama	(1)	331	290	447	406
Hungary	(1)	394	85	171	150
Colombia	(1)	0	0	0	51
Dominican Republic	(1)	13	18	0	36
Haiti	(1)	0	0	0	17
Thailand	(1)	18	9	18	17
Hong Kong	(1)	0	0	9	9
All other	(1)	179	78	139	2
Total	4,480	3,014	2,719	3,584	3,329

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

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

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

Table C-2
Brooms, other than of broom corn: U.S. imports for consumption, by principal sources, 1988-92

(In thousands of dollars)

Source	1988	1989	1990	1991	1992
Brazil	(1)	161	316	603	663
China	(1)	478	791	919	549
Mexico	(1)	419	2,015	466	314
Thailand	(1)	62	99	125	277
Taiwan	(1)	156	153	1,964	204
Italy	(1)	195	282	327	162
All other	(1)	494	307	412	374
Total	1,505	1,965	3,963	4,816	2,543

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

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

Table C-3
Toothbrushes: U.S. imports for consumption, by principal sources, 1988-92

(In thousands of dollars)

Source	1988	1989	1990	1991	1992
Germany ¹	(2)	5,105	2,674	9,651	14,373
Hong Kong	(2)	43,248	36,300	6,398	7,989
China	(2)	3,133	4,621	5,416	4,513
Netherlands	(2)	530	763	3,616	3,939
Taiwan	(2)	3,840	3,800	3,524	3,780
Thailand	(2)	403	451	1,567	2,656
United Kingdom	(2)	1,113	1,431	1,861	1,863
Israel	(2)	607	950	842	924
Korea	(2)	563	641	785	830
All other	(2)	4,235	5,339	3,790	4,769
Total	41,957	62,776	56,969	37,451	45,638

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

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

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

Table C-4
Hairbrushes, cosmetic brushes, and other personal brushes: U.S. imports for consumption, by principal sources, 1988-92

(In thousands of dollars)

Source	1988	1989	1990	1991	1992
Taiwan	(1)	20,944	16,098	18,254	17,981
China	(1)	2,909	7,178	10,487	17,545
Korea	(1)	12,129	13,118	13,853	11,444
Hong Kong	(1)	4,933	3,627	3,963	3,345
Mexico	(1)	299	215	12,260	2,192
United Kingdom	(1)	1,395	1,619	1,991	1,961
Germany ²	(1)	2,058	1,976	1,825	1,400
France	(1)	1,440	1,307	1,268	1,397
Thailand	(1)	31	400	818	1,134
All other	(1)	3,316	3,817	3,539	3,754
Total	45,635	49,454	49,355	68,257	62,153

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

² U.S. imports from eastern Germany, formerly German Democratic Republic, are included in "Germany" effective July 1, 1990.

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

Table C-5
Artists' brushes, writing brushes, and other similar brushes: U.S. imports for consumption, by principal sources, 1988-92

(In thousands of dollars)

Source	1988	1989	1990	1991	1992
Korea	(1)	28,374	26,265	26,682	24,833
Japan	(1)	9,044	7,207	7,483	8,549
China	(1)	1,482	1,659	3,768	6,697
United Kingdom	(1)	4,618	3,307	3,401	3,973
Dominican Republic	(1)	4,512	3,017	1,897	3,838
France	(1)	1,895	2,011	2,286	3,305
Sri Lanka	(1)	918	1,280	1,593	2,656
Germany ²	(1)	2,473	3,151	2,802	2,530
Taiwan	(1)	2,300	2,040	2,744	2,236
All other	(1)	19,902	3,904	6,677	2,967
Total	47,668	75,518	53,841	59,333	61,584

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

² U.S. imports from eastern Germany, formerly German Democratic Republic, are included in "Germany" effective July 1, 1990.

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

Table C-6
Paint brushes, pads, and rollers: U.S. imports for consumption, by principal sources, 1988-92

(In thousands of dollars)

Source	1988	1989	1990	1991	1992
Taiwan	(1)	12,348	12,830	13,527	12,076
Indonesia	(1)	0	494	1,107	3,327
Korea	(1)	3,438	3,560	2,806	3,102
China	(1)	424	651	1,201	2,577
Thailand	(1)	823	1,212	1,533	1,651
Canada	(1)	997	742	411	1,315
Japan	(1)	324	994	886	1,016
Brazil	(1)	569	530	680	787
Germany ²	(1)	190	255	302	849
All other	(1)	2,588	2,884	1,589	2,809
Total	20,881	21,700	24,151	24,042	29,508

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

² U.S. imports from eastern Germany, formerly German Democratic Republic, are included in "Germany" effective July 1, 1990.

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

Table C-7
Brushes constituting parts of machines, appliances, or vehicles (industrial brushes): U.S. imports for consumption, by principal sources, 1988-92

(In thousands of dollars)

Source	1988	1989	1990	1991	1992
Japan	(1)	4,282	3,131	2,731	4,035
Germany ²	(1)	1,050	1,174	1,349	2,248
Canada	(1)	393	601	1,124	775
Spain	(1)	125	471	649	465
Italy	(1)	601	545	597	415
France	(1)	321	179	377	350
United Kingdom	(1)	215	355	238	285
Taiwan	(1)	257	290	688	230
Switzerland	(1)	498	281	277	211
All other	(1)	360	801	827	705
Total	2,772	8,101	7,827	8,855	9,721

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

² U.S. imports from eastern Germany, formerly German Democratic Republic, are included in "Germany" effective July 1, 1990.

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

Table C-8
Feather dusters, squeegees, and brooms and brushes not specifically provided for: U.S. imports for consumption, by principal sources, 1988-92

(In thousands of dollars)

Source	1988	1989	1990	1991	1992
Taiwan	(1)	16,166	15,932	16,619	15,891
Italy	(1)	8,390	9,313	10,581	11,040
China	(1)	2,343	2,815	3,682	8,618
Canada	(1)	3,341	5,305	5,667	7,691
Korea	(1)	2,850	2,608	3,653	7,602
Brazil	(1)	1,533	1,613	2,787	5,363
Ireland	(1)	2,825	3,473	3,964	5,308
Mexico	(1)	4,108	9,866	4,886	5,216
Germany ²	(1)	3,770	5,247	4,925	4,157
All other	(1)	11,673	12,958	14,027	15,213
Total	63,323	57,000	69,130	70,791	86,098

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

² U.S. imports from eastern Germany, formerly German Democratic Republic, are included in "Germany" effective July 1, 1990.

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

Table C-9
Combs: U.S. imports for consumption, by principal sources, 1988-92

(In thousands of dollars)

Source	1988	1989	1990	1991	1992
China	(1)	2,650	3,817	4,120	5,435
Taiwan	(1)	4,003	2,437	2,420	2,147
Hong Kong	(1)	4,182	4,019	2,664	1,628
Korea	(1)	1,945	1,764	1,113	1,147
United Kingdom	(1)	613	954	1,256	900
Germany ²	(1)	652	760	684	617
France	(1)	716	867	465	456
Japan	(1)	231	284	443	185
Italy	(1)	218	232	175	164
All other	(1)	542	715	654	710
Total	18,525	15,749	15,849	13,994	13,389

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

² U.S. imports from eastern Germany, formerly German Democratic Republic, are included in "Germany" effective July 1, 1990.

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

Table C-10
Hair accessories, including barrettes, clips, and bobby pins: U.S. imports for consumption, by principal sources, 1988-92

(In thousands of dollars)

Source	1988	1989	1990	1991	1992
Taiwan	(1)	67,359	59,237	52,984	41,206
Korea	(1)	27,383	30,185	45,225	39,748
China	(1)	9,143	14,102	27,778	36,744
Thailand	(1)	1,950	6,238	8,288	9,310
France	(1)	7,715	6,879	5,448	4,316
Hong Kong	(1)	8,376	7,256	5,169	3,510
Dominican Republic	(1)	114	253	754	2,524
Philippines	(1)	1,229	1,768	824	901
United Kingdom	(1)	485	586	785	886
All other	(1)	4,010	4,542	5,446	4,651
Total	80,592	131,634	132,651	153,474	143,796

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

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

Table C-11
Nonthermic hair rollers: U.S. imports for consumption, by principal sources, 1988-92

(In thousands of dollars)

Source	1988	1989	1990	1991	1992
China	(1)	4,865	3,117	5,370	5,725
Mexico	(1)	518	465	548	1,324
Hong Kong	(1)	1,373	571	637	1,115
Colombia	(1)	293	429	610	504
Korea	(1)	46	66	174	258
Italy	(1)	249	172	253	221
United Kingdom	(1)	49	151	266	218
Taiwan	(1)	406	251	317	191
Belgium	(1)	256	63	147	107
All other	(1)	1,343	1,242	312	104
Total	9,171	9,399	6,527	8,634	9,767

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

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

Table C-12
Brooms and brushes of vegetable materials, bound together, with or without handles: U.S. exports of domestic merchandise, by principal markets, 1988-92

(In thousands of dollars)

Market	1988	1989	1990	1991	1992
Canada	(1)	292	574	458	593
Jamaica	(1)	22	0	60	543
Mexico	(1)	375	284	150	224
Taiwan	(1)	0	10	8	207
Dominican Republic	(1)	0	26	26	186
Saudi Arabia	(1)	144	63	511	121
United Kingdom	(1)	36	33	61	101
Japan	(1)	35	54	134	87
Australia	(1)	17	37	3	81
All other	(1)	1,023	621	1,010	677
Total	3,322	1,944	1,703	2,421	2,821

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

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

Table C-13
Toothbrushes: U.S. exports of domestic merchandise, by principal markets, 1988-92

(In thousands of dollars)

Market	1988	1989	1990	1991	1992
Canada	(1)	2,775	6,168	8,077	9,171
Japan	(1)	4,115	3,152	3,801	3,163
Germany ²	(1)	186	129	944	1,976
Korea	(1)	1,506	1,373	4,889	1,676
Italy	(1)	778	1,350	1,267	1,552
Spain	(1)	936	454	593	1,294
Mexico	(1)	219	1,533	1,132	1,204
Sweden	(1)	621	426	610	1,003
Hong Kong	(1)	800	772	1,234	987
All other	(1)	5,057	4,549	8,602	9,560
Total	12,916	16,993	19,907	31,149	31,586

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

² U.S. exports to eastern Germany, formerly German Democratic Republic, are included in "Germany" effective July 1, 1990.

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

Table C-14
Hair brushes, cosmetic brushes, and other personal brushes: U.S. exports of domestic merchandise, by principal markets, 1988-92

(In thousands of dollars)

Market	1988	1989	1990	1991	1992
Canada	(1)	1,242	1,462	2,443	2,595
Mexico	(1)	2,992	1,788	1,110	1,411
Panama	(1)	10	41	74	380
Australia	(1)	209	135	249	364
Germany ²	(1)	114	172	190	176
Venezuela	(1)	20	49	47	148
Hong Kong	(1)	63	78	25	146
United Kingdom	(1)	394	139	73	124
Korea	(1)	69	285	86	107
All other	(1)	1,071	1,553	1,526	1,229
Total	5,153	6,184	5,702	5,822	6,680

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

² U.S. exports to eastern Germany, formerly German Democratic Republic, are included in "Germany" effective July 1, 1990.

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

Table C-15
Artists' brushes, writing brushes, and other similar brushes: U.S. exports of domestic merchandise, by principal markets, 1988-92

(In thousands of dollars)

Market	1988	1989	1990	1991	1992
Canada	(1)	706	2,372	2,876	3,239
France	(1)	1,235	452	1,875	1,911
Republic of South Africa	(1)	7	11	0	1,004
Italy	(1)	79	95	129	709
Dominican Republic	(1)	0	0	0	546
Mexico	(1)	981	291	341	397
Belgium	(1)	218	4	26	199
Netherlands	(1)	6	9	6	177
Spain	(1)	22	68	70	170
All other	(1)	1,630	1,271	1,514	1,132
Total	3,064	4,884	4,573	6,836	9,485

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

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

Table C-16
Paint brushes, pads, and rollers: U.S. exports of domestic merchandise, by principal markets, 1988-92

(In thousands of dollars)

Market	1988	1989	1990	1991	1992
Canada	(1)	476	3,345	6,558	8,881
Mexico	(1)	569	1,279	1,380	1,936
Japan	(1)	389	638	581	764
Italy	(1)	21	23	836	558
Germany ²	(1)	85	81	99	503
Australia	(1)	347	353	223	291
Poland	(1)	0	0	91	284
United Kingdom	(1)	395	262	166	274
Saudi Arabia	(1)	41	58	32	220
All other	(1)	1,071	1,904	1,817	1,841
Total	1,986	3,395	7,943	11,783	15,554

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

² U.S. exports to eastern Germany, formerly German Democratic Republic, are included in "Germany" effective July 1, 1990.

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

Table C-17
Brushes constituting parts of machines, appliances, or vehicles (industrial brushes): U.S. exports of domestic merchandise, by principal markets, 1988-92

(In thousands of dollars)

Market	1988	1989	1990	1991	1992
Canada	(1)	2,880	10,745	13,494	14,949
Germany ²	(1)	635	623	1,104	1,867
Mexico	(1)	1,539	1,140	1,115	1,658
Ecuador	(1)	0	6	16	1,120
Japan	(1)	442	1,146	983	1,043
Australia	(1)	291	240	375	703
Italy	(1)	580	685	597	622
Netherlands	(1)	152	311	458	609
Argentina	(1)	4	11	40	482
All other	(1)	3,771	4,464	5,535	4,782
Total	51,954	10,296	19,370	23,716	27,835

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

² U.S. exports to eastern Germany, formerly German Democratic Republic, are included in "Germany" effective July 1, 1990.

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

Table C-18
Combs and other hair accessories: U.S. exports of domestic merchandise, by principal markets, 1988-92

(In thousands of dollars)

Market	1988	1989	1990	1991	1992
Mexico	(1)	1,474	1,788	1,240	3,232
Canada	(1)	574	2,657	2,171	2,578
Venezuela	(1)	95	154	124	702
Panama	(1)	960	902	572	694
Japan	(1)	1,375	864	733	632
Thailand	(1)	26	29	12	623
Ecuador	(1)	350	259	433	517
Colombia	(1)	167	191	191	389
Israel	(1)	264	304	296	356
All other	(1)	4,367	3,829	4,254	3,758
Total	10,165	9,651	10,977	10,026	13,481

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

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

Table C-19
Nonthermic hair rollers and certain other hair curling devices: U.S. exports of domestic merchandise,
by principal markets, 1988-92

(In thousands of dollars)

Market	1988	1989	1990	1991	1992
Canada	(1)	728	756	976	915
Mexico	(1)	670	903	965	751
Japan	(1)	962	581	127	194
Germany ²	(1)	32	15	63	123
Hong Kong	(1)	21	146	257	107
Argentina	(1)	0	81	231	95
Guatemala	(1)	62	61	5	92
Venezuela	(1)	27	23	28	74
Spain	(1)	2	0	0	46
All other	(1)	1,212	796	819	450
Total	1,186	3,716	3,362	3,470	2,846

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

² U.S. exports to eastern Germany, formerly German Democratic Republic, are included in "Germany" effective July 1, 1990.

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