

Industry & Trade Summary

Coated Fabrics



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UNITED STATES INTERNATIONAL TRADE COMMISSION

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PREFACE

In 1991 the United States International Trade Commission initiated its current *Industry and Trade Summary* series of informational reports on the thousands of products imported to 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 and of those bearing on the competitiveness of U.S. industries in domestic and foreign markets.¹

This report on coated fabrics primarily covers the period 1987-92 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 chemicals and textiles sectors.

<i>USITC publication number</i>	<i>Publication date</i>	<i>Title</i>
Chemicals:		
2458	November 1991	Soaps, Detergents, and Surface-Active Agents
2509	May 1992	Inorganic Acids
2548	August 1992	Paints, Inks, and Related Items
2578	November 1992	Crude Petroleum
2588	December 1992	Major Primary Olefins
2590	February 1993	Polyethylene Resins in Primary Forms
2598	March 1993	Perfumes, Cosmetics, and Toiletries
Textiles and apparel:		
2543	August 1992	Nonwoven Fabrics
2580	December 1992	Gloves
2642	June 1993	Yarns
2695	November 1993	Carpets and Rugs
2702	November 1993	Fur Goods
2703	November 1993	Coated Fabrics

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

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INTRODUCTION

The concept of treating surfaces of fabrics with substances, for instance rubber, to achieve such characteristics as water impermeability has been around for centuries. Until World War II, only a limited number of materials and processes had been developed for such fabric treatment. Since then, innovations in product, process, and technology and development of new end-use applications have fostered the growth of a distinct and significant industry within the U.S. textile sector that coats, covers, impregnates, or laminates textile fabrics (hereinafter referred to as coated fabrics). The coated fabrics industry had sales in 1992 of \$1.8 billion, or about 5 percent of total U.S. textile mill shipments.

The U.S. coated fabrics industry is highly capital- and knowledge-intensive and has been a world leader in new product development. In recent years, for example, it was among the first to develop geotextile fabrics for use in construction and certain liner fabrics for use in chemical and petroleum storage facilities. The adoption of advanced process and manufacturing technology has enabled the U.S. industry to develop new markets for its fabrics and to produce more sophisticated fabrics, especially for aerospace and medical applications. Nevertheless, the process and manufacturing technology for many coated fabrics is in the mature stage and is available to producers worldwide.

The U.S. industry dominates the domestic market for coated fabrics, supplying almost 90 percent of total sales in 1992. Its shipments showed little real growth during 1988-92 largely because of the economic recession in the early 1990s and also a weak automotive sector, one of its major markets. U.S. imports also rose slowly to \$200 million, or 11 percent of the market, in 1992. Employment in the domestic industry declined sharply during 1988-92 mainly because of the adoption of more efficient production technology.

The U.S. industry is highly competitive in global markets, especially in the industrial segment where product quality is important. U.S. exports of \$360 million in 1992 accounted for a fairly large 19 percent of industry shipments. The U.S. trade surplus in coated fabrics more than doubled during 1989-92 to \$160 million, as the growth in U.S. exports of about 50 percent surpassed the 16-percent gain in U.S. imports.

This report examines these and other developments in the coated fabrics industry, focusing on changes occurring during 1987-92. It briefly describes the principal products in the domestic market and their production processes. It then examines the U.S. industry and recent changes taking place therein, following with a brief overview of the foreign industry. The report ends by discussing the recent performance of the U.S. industry in both domestic and foreign markets and by reviewing recent trends in U.S. trade in coated fabrics.

PRODUCTION PROCESSES

Coated fabrics are formed by coating one or both sides of a textile substrate, or a base fabric, with such secondary materials as plastics, rubber, gums, starches, pates, or clays. The U.S. industry uses three general types of processes to transform the textile substrate into a coated fabric: calendaring, impregnating, and laminating.

Calendaring is used to coat or cover the textile substrate. The coating material is typically heated to a molten state between two rollers (hydraulic cylinders), which in turn pass the coating material onto one of two additional rollers through which the substrate fabric is passed. The thickness of the coating material varies according to the intended end use of the fabric, ranging usually between 0.01 and 0.06 inch. The coating material adheres to the substrate as it dries and cools.

In the impregnating process, a loosely woven, absorbent substrate fabric becomes fully saturated as it passes through a liquid bath or vat containing the surfacing materials. Generally, the fabric is then passed through a set of rollers to squeeze out or remove any excess surfacing material.

Laminating is the application of a flexible film to one or both sides of the substrate. The film is either heated to a softening point and then fused with the substrate under pressure or affixed to the substrate surface with an adhesive. Sometimes the film side of the surface is embossed to impart a pattern. The newly formed laminated fabric is then cooled to solidify the outer layer and to lock the imprinted pattern in place.

The textile substrate is generally a woven fabric of manmade-fiber filament yarns. Nylon and polyester are the most commonly used fibers, though glass fiber, cotton, and, in rare cases, even silk can be used. Factors affecting the selection of a particular fiber for the base fabric are the end-use application, price, production technology, and physical properties. In some cases, several different fibers can be used to make the substrate for the same end-use product. The principal coating material is plastics (primarily vinyl and also urethane, polyolefin, and polyamides), followed by rubber. Chemicals, plastics, additives, and adhesives are used to bind or coat the base fabric and to incorporate onto the substrate such characteristics as flame retardancy, water repellency, and chemical or heat resistance.

END-USE APPLICATIONS

Coated fabrics can, in some cases, be used interchangeably for the same end-use product. In addition, each of the different production processes can generally produce a fabric with the same or similar characteristics. Thus, the selection of a particular coated fabric usually involves the interplays between the price and the physical attributes of the fabric and between the fabric producer and the fabricator. For automotive air bag producers, for example, the use of a coated fabric that provides considerable flexibility and abrasion resistance is crucially important. For truck bed covers, however, where there is no overriding safety or similar concerns, price is relatively more

important. Truck cover producers seek out the best quality for the price, regardless of the process used to make the fabric. In the more technically sophisticated fabrics, which require considerable research and development, the end-use producer usually works closely with a known supplier to develop a particular fabric that meets its needs.

Coated fabrics have a wide range of uses, from industrial products, such as filtration materials and automobile interiors, to consumer products, such as luggage and sportswear. Table 1 provides a list of industries using these fabrics and the end-use products they produce.

U.S. INDUSTRY PROFILE

The U.S. coated fabrics industry consists primarily of establishments classified in Standard Industrial Classification (SIC) 2295, Coated Fabrics, Not Rubberized. These operations account for at least three-fourths of U.S. coated fabrics production annually. The rest of the coated fabrics industry comprises establishments that rubberize fabrics, which are classified in SIC 3069, Fabricated Rubber Products, Not Elsewhere Classified (n.e.c.), and those that manufacture textile-based wall coverings classified in SIC 2679, Converted Paper and Paperboard Products,

n.e.c. Although data are not reported separately for producers of the rubberized fabrics or of the wall coverings, these firms account for a small share of U.S. coated fabrics production. Therefore, data for SIC 2295 will be viewed in this report as indicative of conditions in the U.S. coated fabrics industry.¹

The domestic industry consists of many small and medium-size companies manufacturing a limited number of coated fabrics and of a few large integrated firms producing a wider range of such fabrics. Industry sources believe that the integrated producers account for 20 percent of the firms in the industry but more than 75 percent of total output. Integrated firms generally weave the base fabric, surface it, and then either sell the finished fabric to fabricators and converters or produce the end-use product. Many of the integrated firms also produce upstream or downstream products such as chemicals, plastics, and rubber goods. The smaller, nonintegrated firms process purchased fabrics for sale to fabricators and converters.

¹ Trade organizations representing the industry and helping promote the use of its products are the Chemical Fabrics & Film Association, Cleveland, OH; Industrial Fabrics Association, International, St. Paul, MN; and the Rubber Manufacturers Association and the Wallcovering Manufacturers Association, Washington, DC.

Table 1
Coated fabrics: Principal U.S. consumers and end-use products

Consumer	End-use product
Aerospace	Aircraft escape slides, fuel tanks, upholstery
Apparel and footwear	Shoes, handbags, rainwear, belts, hats, and sportswear
Automotive	Roof headliners, seat covers, side and door panels, air bags, convertible tops
Chemicals and oil	Storage and transporting containers, tanks, bags, liners
Construction and building	Single ply roofing, geotextiles, geomembranes, filtration fabrics, moisture permeability fabrics
Homefurnishings	Awnings, drapes, carpets, wallcoverings, upholstery, casual furniture
Luggage	Suitcases, carry-on bags, suit bags, travel goods, sport bags
Marine and boating	Sails, boat covers and tops, upholstery
Medical and health	Mattress ticking, hospital shields, gowns, surgical towels and drapes
Military	Tents, tarpaulins, protective and safety clothing, truck covers, equipment cases and covers
Recreation and sports	Athletic equipment (golf bags and soft ball bases), backpacks, pool covers, tennis screens, canopies

Note.—Each industry segment, depending on the end-use product, uses various types of coated fabrics.

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

Although not generally included in the SIC classification for coated fabrics, "compounders" and "converters" play an important role in the industry. Compounders specialize in mixing the constituent elements of the surfacing materials to the specifications of the coated fabric producers. Some producers, especially the smaller firms, use compounders to minimize their investment in these highly specialized, capital- and knowledge-intensive operations. In addition, industry sources indicate that the use of compounders often enables producers to avoid the costs associated with meeting Federal or State regulations for the storage and disposal of toxic materials.

Converters usually do not physically handle the product, but act as middlemen between manufacturers and buyers in buying the base fabrics and in arranging for the processing of these materials to the buyers' specifications. Also, manufacturers often use converters to market their fabrics, to find sources of fabrics with special properties, or to "contract out" specific processing steps.

Industry Structure

The U.S. coated fabrics industry has experienced significant structural changes in recent years. Although the number of firms in the industry rose by 16 percent during 1987-92, the industry's shipments rose only by 5 percent in real terms, and its work force shrank by 27 percent, as shown in table 2. These divergent trends are attributable largely to the entry of many small, highly specialized firms in the industry, to the ongoing automation of the production process, and to sluggish demand in major markets.

The development of new products, manufacturing technologies, and end-use applications has enabled new firms to enter the domestic industry. Between 1987 and 1992, the industry realized a net gain of almost 30 firms. Most of these new entrants are believed to be very small manufacturers of "made-to-measure" or "engineered" textiles with special properties for specific end-use applications. These firms tend to produce the fabrics on a custom order basis. Although demand for these fabrics is growing, their markets remain small and highly fragmented.

Many established producers have so far been reluctant to enter some of these new market segments. Producers that have committed capital to their current projects often find it difficult to raise the required capital to enter the new markets. Established producers often compete in the larger, more mature markets, such as automotive products and consumer products.

The introduction of new technologies has also enabled firms to upgrade and automate their operations over the years. The modernization of the production process contributed significantly to the decline in employment, especially among the largest producers. Establishments employing at least 250 persons have declined in relative importance since 1977, whereas those employing between 100 and 249 workers have increased, as shown in figure 1. Many of the largest establishments cut employment to levels that pushed them into the smaller class of establishments. Most producers operate only one manufacturing establishment. Several of the larger firms (for instance, John Boyle Co., Inc.; Cooley, Inc.; Graniteville Co.; and Reeves Brothers, Inc.) operate multiple plants in the United States.

Table 2
U.S. coated fabrics industry (SIC 2295), specified years 1972-92

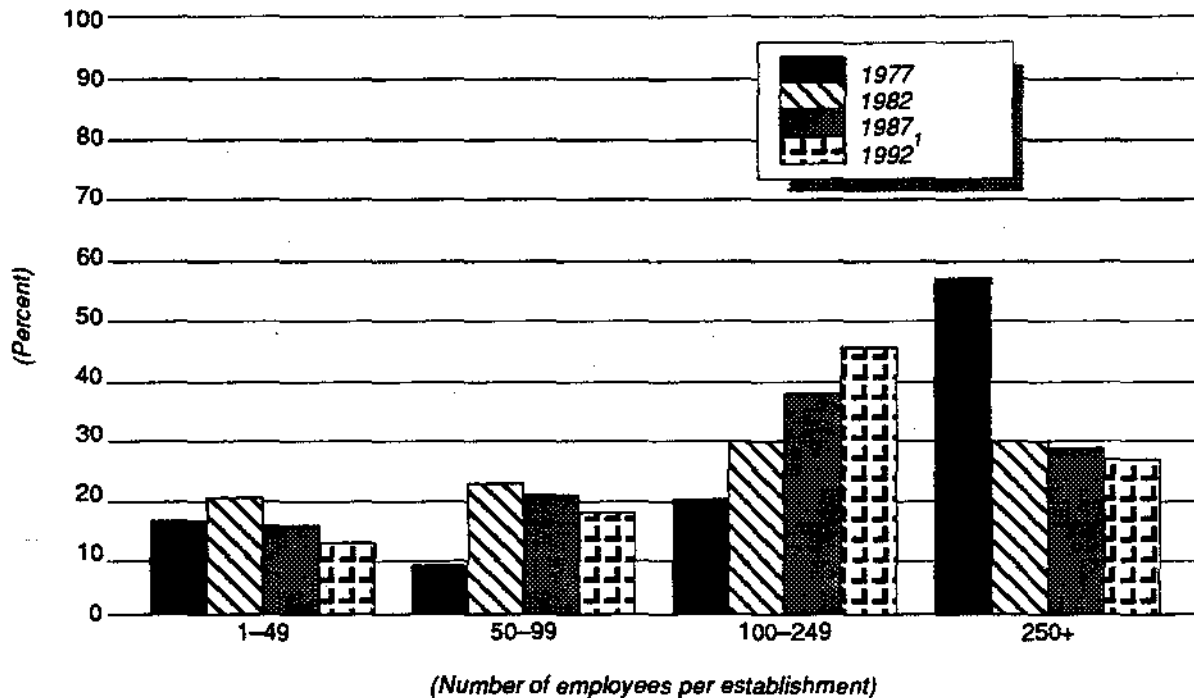
Item	1972	1977	1982	1987
Number of companies	185	175	188	181
Number of establishments	202	191	198	186
Number of employees (1,000)	18.0	13.6	11.0	10.3
Number of production workers (1,000)	13.1	9.9	8.0	7.4
Value of product shipments:				
Nominal value (million dollars)	809	987	1,069	1,323
Constant 1985 value (million dollars)	(¹)	(¹)	(¹)	1,323
	1989	1990	1991	1992 ²
Number of companies	190	197	205	210
Number of establishments	196	203	217	225
Number of employees (1,000)	9.4	8.9	8.0	7.5
Number of production workers (1,000)	6.6	6.4	5.5	5.0
Value of product shipments:				
Nominal value (million dollars)	1,557	1,471	1,402	1,541
Constant 1985 value (million dollars)	1,412	1,319	1,261	1,387

¹ Not available.

² Estimated by the staff of the U.S. International Trade Commission.

Source: U.S. Bureau of the Census, "Miscellaneous Textile Goods," 1987 *Census of Manufactures*, MC87-I-22E, Jan. 1990, table 1a-1, p. 22E-5, and table 6c, p. 22E-19, and "Value of Products Shipments," 1991 *Annual Survey of Manufactures*, M91(AS)-2, Nov. 1992, table 1, p. 2-5, except as noted.

Figure 1
Coated fabrics: Distribution of U.S. shipments by establishment size, SIC 2295, 1977, 1982, 1987, and 1992¹



¹ Data for 1992 were estimated by the staff of the U.S. International Trade Commission.

Source: U.S. Bureau of the Census, "Industry Statistics by Employment Size of Establishment," *Census of Manufactures, 1977, 1982, and 1987*, except as noted.

Major Factors of Production

The major factors of production in the coated fabrics industry are raw materials, capital equipment, and labor. In addition, environmental regulations regarding disposal of toxic materials used by the industry influence production decisions.

Raw materials account for the largest share of production costs in the U.S. coated fabrics industry. In 1991, the latest year for which data are available, the cost of materials represented 59 percent of the total value of U.S. producers' shipments (figure 2). Labor costs represented about 18 percent of the total.

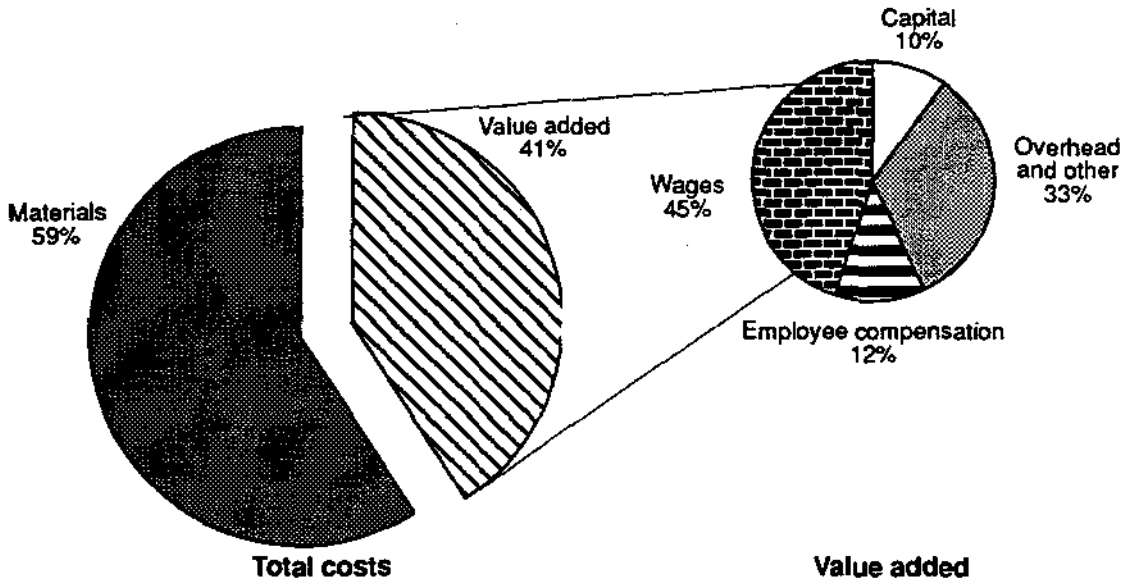
Investment in new capital equipment has been a key factor in promoting the growth and competitiveness of the U.S. coated fabrics industry. As shown in figure 3, new capital expenditures in constant 1977 dollars declined from \$5.2 million in 1977 to \$0.6 million in 1982, but then increased to an estimated \$22.5 million in 1992 — an overall increase of more than 300 percent. Spending on machinery and equipment accounted for the largest share (80 percent) of the capital expenditures, increasing from \$0.8 million in 1977 to \$18 million in 1992.

New technology in the U.S. coated fabrics industry has enabled firms to produce more sophisticated coated fabrics and to develop new markets for these fabrics.

Product specialization is very high among U.S. producers, particularly the small and medium size firms. This specialization reflects the relatively high capital requirements associated with the different production processes. Some of the more technically sophisticated fabrics require individually-designed machinery for production. Although product specialization usually limits a firm to a particular market niche, it may also improve the firm's ability to respond quickly to opportunities in that market and to forge a closer relationship with its customers.

The greater efficiency of the new machinery installed by the industry over the years has contributed to a decline in the average number of production workers per establishment since 1972. Most production workers in the coated fabrics industry are highly skilled, operating complex equipment and performing operations that often require significant technical expertise. They rank among the highest paid production workers in the U.S. textile mill sector. In 1992, production workers in the coated fabrics industry on average earned 51 percent more than those in the overall textile mill sector, as shown in table 3. Moreover, the gap has widened significantly in the past decade. The higher wages partly reflect greater productivity. In 1991, the latest year for which such data are available, productivity in terms of value added

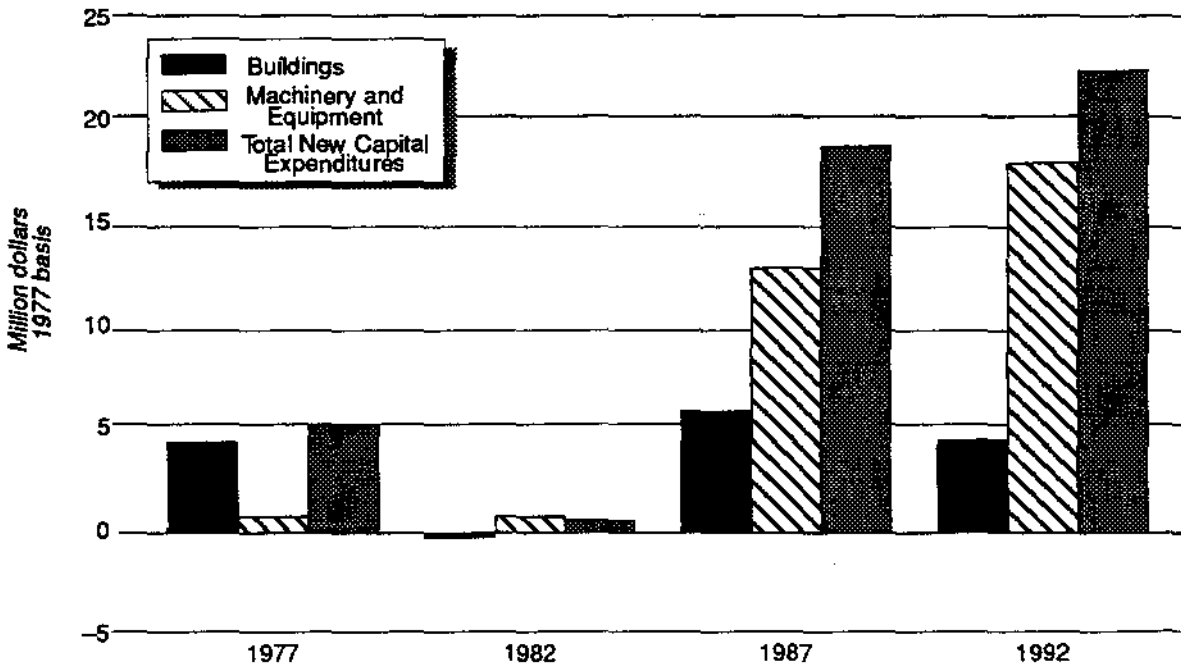
Figure 2
Coated fabrics: Percentage distribution of U.S. production costs, 1992¹



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

Source: U.S. Bureau of the Census, *Annual Survey of Manufactures*, 1991.

Figure 3
Coated fabrics: Net Investment, SIC 2295, In real terms, 1977, 1982, 1987, and 1992¹



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

Source: *Census of Manufactures*, 1977, 1982, and 1987, except as noted.

Table 3

Average number of production workers per establishment for SIC 2295 (coated fabrics) and average hourly earnings of production workers for SIC 2211-2299 (textile mill products) and SIC 2295, specified years 1972-92

Year	Production workers per establishment	Average hourly earnings		
		Textile mill products	Coated fabrics	Increase of SIC 2295 over all Textile Mill Products
1992 ¹	22	\$8.47	\$12.82	Percent 51
1991	25	8.07	12.21	51
1990	32	7.93	11.37	43
1989	34	7.93	11.66	47
1988	37	7.62	10.24	34
1987	40	7.42	10.23	38
1982	40	5.99	7.69	28
1977	52	4.41	5.60	27
1972	65	2.79	3.88	39

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

Source: U.S. Bureau of the Census, "Miscellaneous Textile Goods," 1987 *Census of Manufactures*, MC87-I-22E, Jan. 1990, table 1a-1, p. 22E-5, and table 6c, p. 22E-19, and "Value of Product Shipments," 1991 *Annual Survey of Manufactures*, M91(AS)-2, Nov. 1992, table 1, p. 2-5, except as noted.

per production worker hour of \$45.56 in the coated fabrics industry was 81 percent greater than the \$25.24 for the U.S. textile mill sector. In addition, this measure of productivity has increased considerably faster for the coated fabrics industry than for the textile mill sector since 1987, rising by 26 percent versus 16 percent.

Concerns regarding the environment and worker safety also affect production of the coated fabrics industry. More specifically, the storage and disposal of toxic materials used by the coated fabrics industry and regulations regarding the safety of workers handling chemicals used in the production processes are important constraints. A major factor of production is meeting Federal or State government regulations. According to industry officials, some smaller manufacturers use compounders more frequently to supplement their manufacturing operations in order to avoid additional production costs in meeting these requirements. For example, some states prohibit the use of solvent-based coatings to manufacture coated fabrics and, therefore, the manufacturer must use a water-based coating or produce a laminated style of fabric. Some manufacturers contract the coating to a compounder in another state where the use of solvent-based coating is permissible.

Consumer Characteristics and Factors Affecting Demand

The principal consumers of coated fabrics cover a broad spectrum of the American industry. They range from the aerospace and automotive sectors, to chemicals and energy, to construction, and to consumer products. The automotive sector is believed to be the single largest consumer of coated fabrics, using them in upholstery, door panels, headliners, and air bags. Some industry estimates place the automotive sector's

share as high as one-half of total U.S. coated fabrics consumption. Another major market for coated fabrics is the consumer products sector. Coated fabrics, such as imitation or artificial leather, are a lower cost alternative to natural leather in outerwear, footwear, luggage, handbags, purses, wallets, and other related goods and in recreational and sports equipment.

Given the diversity of uses and consuming industries, a number of different factors influence demand for coated fabrics. In general, however, demand closely follows changes in general economic activity. Consumer spending on durable goods, like automobiles, and on such products as luggage and recreational and sports equipment is usually postponable during periods of economic uncertainty and low consumer confidence. Price is also a major factor, as are product quality and required physical properties for the specific end-use application.² For some highly technical products, for instance, chemical-resistant protective clothing, fabric quality and exact specifications are critically important. On the other hand, price is the most important factor influencing demand for coated fabrics used in products whose fabrics are a substitute material, such as imitation leather, or whose consistency is not critically important, such as in certain geotextiles.

There are also other less general factors that affect demand for coated fabrics. However, they often apply only to one specific end-use product or to the individual segment of the consuming industry. Table 4 shows major consuming industries for coated fabrics and some specific factors that affect demand for these fabrics.

² Examples of physical properties are flexibility, strength, abrasion and puncture resistance, insulation qualities, heat resistance, water repellency, chemical resistance, and aesthetic characteristics, including appearance, suitable drape, or feel.

Table 4
Coated fabrics: Principal U.S. Industries and factors affecting demand

Industry	Demand factors
Aerospace	<ul style="list-style-type: none"> • Space programs and developmental projects • Military spending on aircraft • Replacement of aircraft or parts by commercial airlines
Apparel and footwear	<ul style="list-style-type: none"> • Styles and fashion • Improved characteristics, i.e., breathability and moisture absorbency
Automotive	<ul style="list-style-type: none"> • New products, i.e., air bags • Interior style change, i.e., cloth seats • Substitutability for other materials, i.e., plastics
Chemicals and oil	<ul style="list-style-type: none"> • Environmental awareness • New EPA regulations • Change in storage and shipping capacity
Construction and building	<ul style="list-style-type: none"> • Expansion of infrastructures • Housing starts • Repairing of existing civil engineering projects
Homefurnishings	<ul style="list-style-type: none"> • Awareness of home energy conservation • Home decorating • Popularity of leisure and casual furniture
Luggage	<ul style="list-style-type: none"> • Economic conditions affecting the travel industry • Styles and fashion
Marine and boating	<ul style="list-style-type: none"> • Popularity of water-related activities • Favorable climatic conditions
Medical and health	<ul style="list-style-type: none"> • Public and institutional awareness of confinement for contagious diseases • Disposable versus reusable products • New medical discoveries and applications
Military	<ul style="list-style-type: none"> • Shortage of required equipment • International armed conflict • Change in number of active-duty and reserve forces
Recreation and sports	<ul style="list-style-type: none"> • New sports facilities • Promotion of physical fitness and individual conditioning • More individual leisure and recreational time

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

The automotive market for coated fabrics includes both original equipment manufacturers and replacement parts producers. These consumers range in size from the small customizing auto shops, which consume fabric mostly for seat coverings, to the automakers, which use fabric throughout the interior and the trunk. In addition, the advent of air bags in motor vehicles has created a new and growing market for coated fabrics.

In the consumer products market, price, style, and fashion largely influence demand for coated fabrics. Coated fabrics for apparel and footwear must also be aesthetically appealing or be substitutable for another material, such as leather. For homefurnishings, producers use coated fabrics in such products as wall coverings and casual or outdoor furniture.

Home-decorating trends also affect demand for these fabrics. Similarly, the demand for coated fabrics for use in the marine and boating industries (sails and boat covers), in the sports and recreation industries (athletic equipment and tents), and in the luggage industry increases as the population spends more time in leisure and recreational activities.

The chemical and energy industries use coated fabrics to prevent contamination of the environment, such as drainage barriers and liners and tanks for storage and transporting purposes. These fabrics require a coating or a surface material that does not react with the liquids or chemicals and, thus, serves as an effective barrier to prevent leakage and contamination. Also, these fabrics are often used to contain oil spills.

Coated fabrics used in the construction and building industries are usually lighter weight, less expensive fabrics. The demand for these fabrics, especially geomembranes and filtration fabrics, closely tracks changes in expenditures for repair and improvement of domestic water and sewage systems, highways, bridges, and other infrastructure.

Demand for coated fabrics for use in medical and health care products has increased as producers manufacture a wider range of products. Coated fabrics for surgical towels and gowns offer a barrier against germ penetration and contamination. Many of these medical products are disposable.

In the aerospace industry, demand for coated fabrics is influenced by demand for commercial and military aircraft and by the nature of expenditures for the space program. Military demand for coated fabrics has helped to increase its demand and to stimulate the development of some fabrics that are used for safety clothing and protective covering for equipment.

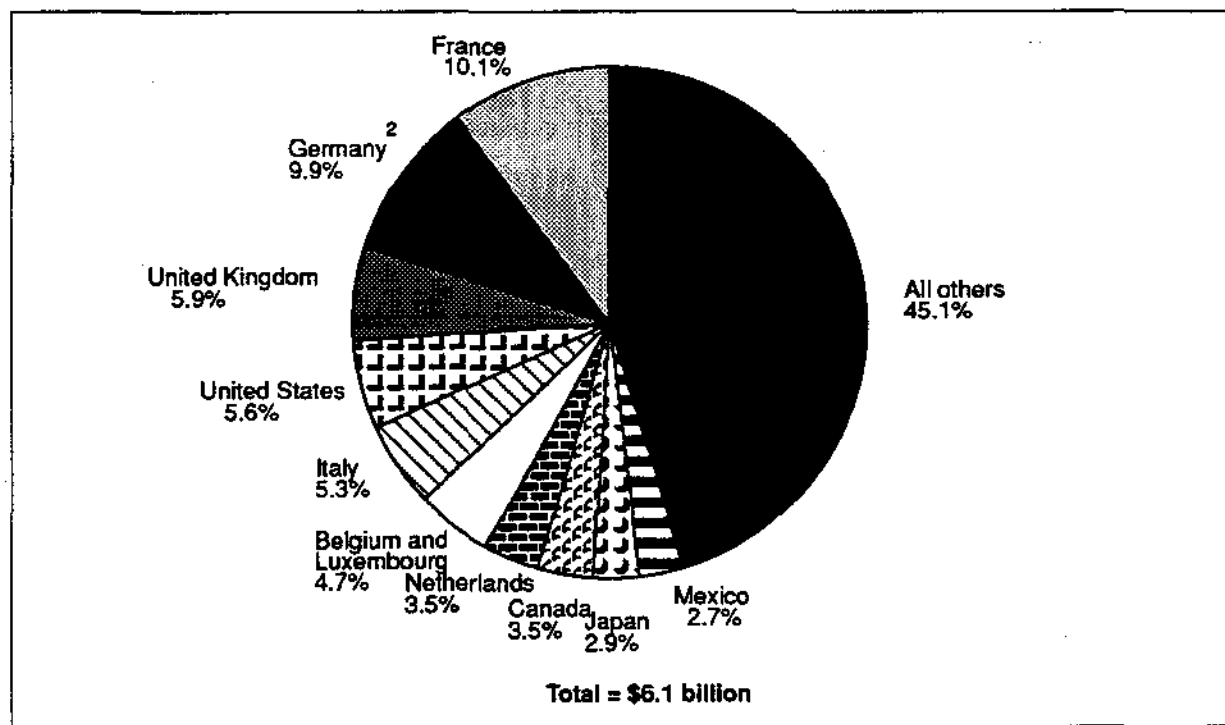
FOREIGN INDUSTRY PROFILE

The process and technologies needed to produce most coated fabrics are available in both developed and developing countries. The major developed-country

producers are Canada, Japan, and members of the European Community (EC). The major developing-country producers are Brazil, Colombia, Chile, Mexico, Taiwan, Hong Kong, and Korea. The coated fabrics industries in these developed and developing countries often import both substrate fabrics and surfacing materials. In contrast, the U.S. industry primarily uses substrate fabrics and coating or surfacing materials that are produced domestically.

Developed countries, including the United States, supply the bulk of world exports of coated fabrics (figure 4). Exports represent a small share of total production in most developed countries. Although foreign developed-country manufacturers generally produce a wide range of coated fabrics, their production tends to be concentrated on fabrics for use in industrial end-use applications, which usually require a high degree of quality and consistency and generally command higher prices than such fabrics for consumer products. The major consuming industries for coated fabrics consider those produced in the United States and other developed countries to be generally comparable in quality and price. The principal exception is in coated fabrics for use in home furnishings. Many European and other foreign consumers prefer the styles and fashions of the U.S. products.

Figure 4
Coated fabrics: Share of world exports by principal countries, 1992¹



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

² Represents exports of the former West Germany.

Source: Compiled from official statistics of the United Nations.

The coated fabrics industries in most developing countries, particularly in Asia, produce fabrics and downstream products primarily for the export market. Only a small amount of their coated fabrics production is intended for internal consumption. Most developing countries focus production on less expensive fabrics for use in consumer products, for which minor variations or imperfections in the finished fabric are often not critically important.

U.S. TRADE MEASURES

Table 5 provides the column 1-general rates of duty for the 37 subheadings in the Harmonized Tariff Schedule of the United States (HTS) providing for coated fabrics. Only one of these subheadings provides for a most-favored-nation (MFN) rate of zero. The remaining subheadings have rates of duty ranging from 3.4 percent ad valorem to 16 percent, with almost two-thirds of the subheadings having a rate of duty of 5.8 percent or less. The trade-weighted rate of duty for coated fabrics averages 5.8 percent ad valorem, based on 1992 trade. Appendix A includes an explanation of tariff and trade agreement terms.

Almost one-half (18 out of 37) of the HTS subheadings providing for coated fabrics are covered by quantitative restrictions under the Arrangement Regarding International Trade in Textiles, more commonly known as the Multifiber Arrangement (MFA).³ However, these quotas have not significantly affected the level of U.S. imports of coated fabrics because most are seldom filled.

FOREIGN TRADE MEASURES

The major U.S. trading partners for coated fabrics are Canada, the EC, Japan, and Mexico. Canada's MFN rates of duty for these fabrics range from free to 25 percent ad valorem, whereas the rates applicable to the United States under the United States-Canada Free-Trade Agreement are lower and presently range from free to 17.5 percent. The majority of the Canadian tariff rates that apply to the United States range from 15 to 17.5 percent ad valorem, with plastic-coated and rubberized-coated fabrics having duties of 15.7 to 17.5 percent ad valorem and wall coverings 9 to 15.7 percent ad valorem.

Japan has three different duty categories: General, Preferential, and Temporary (the latter includes the United States). Tariff rates on all categories range from free to 25 percent ad valorem, with the tariff rates applicable to the United States ranging from 3.9 to 10 percent ad valorem. The Japanese tariff rate on imports of plastic-coated fabrics from the United States is 4.2 percent ad valorem, while the rates on rubberized-coated fabrics range from 4.2 to 7.8 percent ad valorem and the rate applicable to wall coverings is 8 percent ad valorem.

The EC has two categories of tariff rates: Autonomous and Conventional. The United States is subject to the latter. The combined tariff rates for both

categories range from 4 to 21 percent ad valorem. The EC rates on imports of plastic-coated fabrics from the United States are 12 percent ad valorem, 5.6 to 12 percent for rubberized-coated fabrics, and 5.8 to 14 percent for wall coverings.

Mexico's general tariff rates for coated fabrics are 10, 15, or 20 percent ad valorem. Mexico maintains special tariff rates only for imports from the Latin American Integration Association (LAIA) countries. These tariff rates are not standardized, but vary by country and by commodity classification. Under the North American Free Trade Agreement (NAFTA), Mexico will phase out its tariffs on coated fabrics from the United States over either a 6-year or a 10-year period. The United States will eliminate immediately its tariffs for almost one-third of the coated fabric imports from Mexico, based on 1992 trade, and will phase out most of the remaining tariffs over 6 years. For more detail on individual tariff rates for Canada, Japan, the EC, and Mexico, see table B-1. While some important export markets for U.S. coated fabric, particularly in the Far East, maintain import licensing requirements, most domestic industry officials believe that these measures do not hinder exports.

U.S. MARKET

Consumption

Apparent U.S. consumption of coated fabrics fluctuated during 1988-92, as shown in figure 5. It increased from \$1.6 billion in 1988 to \$1.9 billion in 1989, then declined to \$1.6 billion in 1991, before increasing to \$1.8 billion in 1992. U.S. producers dominate the domestic market. Imports generally supply a small share of the market, with import penetration ratios ranging from 9 to 12 percent of U.S. consumption during 1988-92. Plastic-coated fabrics (primarily vinyl) accounted for the largest share, approximately 80 percent, of domestic consumption in 1992.

Production

U.S. producers' shipments of coated fabrics fluctuated between \$1.8 billion in 1988 to \$1.9 billion in 1992, as shown in figure 6. Although U.S. producers manufacture many different types of coated fabrics, vinyl-coated fabrics account for more than one-half of all production. Exports accounted for 19 percent of U.S. producers' shipments in 1992.

Relative to shipments, U.S. producers' inventories tend to be small because many of the fabrics are custom-made or special-order products. Inventories typically consist of standard-specification fabrics that have multiple uses. However, these items will usually be inventoried only when there is a lull in production. In addition to the expense of carrying an inventory, an additional concern to the manufacturer is the shelf life of some fabrics. Because chemicals are a major constituent material in these fabrics, some fabrics deteriorate quickly and, therefore, may reduce the life expectancy of the end-use product.

³ See appendix A for information regarding the MFA.

Table 5
Coated fabrics: 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

HTS subheading	Description	Col. 1 rate of duty as of Jan. 1, 1993		U.S. exports, 1992	U.S. imports, 1992
		General	Special ¹		
<i>1,000 dollars</i>					
5407.30	Woven fabrics constructed of bonded yarns:				
.10	Over 60 percent of plastics	3.4%	0.3% (IL), 1.7% (CA)	3,736	33
.90	Other	16%	1.6% (IL), 8% (CA)	415	75
5901.10	Book cover fabric:				
.10	Of manmade fibers	8%	Free (IL), 4% (CA)	887	620
.20	Of any other fibers	4.7%	Free (E*, IL, J*), 2.3% (CA)	887	253
5901.90	Tracing cloth, painting canvas, buckram and similar fabrics:				
.20	Of manmade fibers	8%	Free (IL), 4% (CA)	8,826	39
.40	Of any other fibers	4.7%	Free (E*, IL, J*), 2.3% (CA)	8,826	435
Textile fabrics impregnated, coated, or laminated:					
5903.10	With polyvinyl chloride:				
.10	Of cotton	5.3%	Free (A, E, J), 0.5% (IL), 2.6% (CA) ²	4,381	4,624
.15	Of manmade fibers, over 60 percent of plastics	3.4%	Free (E, J), 0.3% (IL), 1.7% (CA) ²	9,244	633
.18	Of manmade fibers, 60 percent or less of plastics	16%	1.6% (IL), 8% (CA) ²	9,244	215
.20	Of manmade fibers, over 70 percent of rubber or plastics	4.2%	Free (A, E, J), 0.4% (IL), 2.1% (CA) ²	9,244	33,768
.25	Of manmade fibers, 70 percent or less of rubber or plastics	8.5%	0.9% (IL), 4.2% (CA) ²	9,243	8,685
.30	Of any other fibers	5.3%	Free (E*, J*), 0.5% (IL), 2.6% (CA) ²	5,084	854
5903.20	With polyurethane:				
.10	Of cotton	5.3%	Free (E*, J*) 0.5% (IL), 2.6% (CA) ²	2,297	13,231
.15	Of manmade fibers, over 60 percent of plastics	3.4%	Free (E, J), 0.3% (IL), 1.7% (CA) ²	3,391	479
.18	Of manmade fibers, 60 percent or less of plastics	16%	1.6% (IL), 8% (CA) ²	3,391	122
.20	Of manmade fibers, over 70 percent of rubber or plastics	4.2%	Free (A, E, J), 0.4% (IL), 2.1% (CA) ²	3,391	1,927
.25	Of manmade fibers, 70 percent or less of rubber or plastics	8.5%	0.9% (IL), 4.2% (CA) ²	3,392	22,752
.30	Of any other fibers	5.3%	Free (E*, J*), 0.5% (IL), 2.6% (CA) ²	1,845	2,251
5903.90	With other plastics:				
.10	Of cotton	5.3%	Free (A, E, J), 0.5% (IL), 2.6% (CA) ²	8,741	5,287
.15	Of manmade fibers, over 60 percent of plastics	3.4%	Free (E, J), 0.3% (IL), 1.7% (CA) ²	19,358	311
.18	Of manmade fibers, 60 percent or less of plastics	16%	1.6% (IL), 8% (CA) ²	19,359	182
.20	Of manmade fibers, over 70 percent of rubber or plastics	4.2%	Free (A, E, J), 0.4% (IL), 2.1% (CA) ²	19,359	1,934
.25	Of manmade fibers, 70 percent or less of rubber or plastics	8.5%	0.9% (IL), 4.2% (CA) ²	19,359	25,523
.30	Of any other fibers	5.3%	Free (E*, J*), 0.5% (IL), 2.6% (CA) ²	22,707	730

See footnotes at end of table.

Table 5-Continued

Coated fabrics: 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

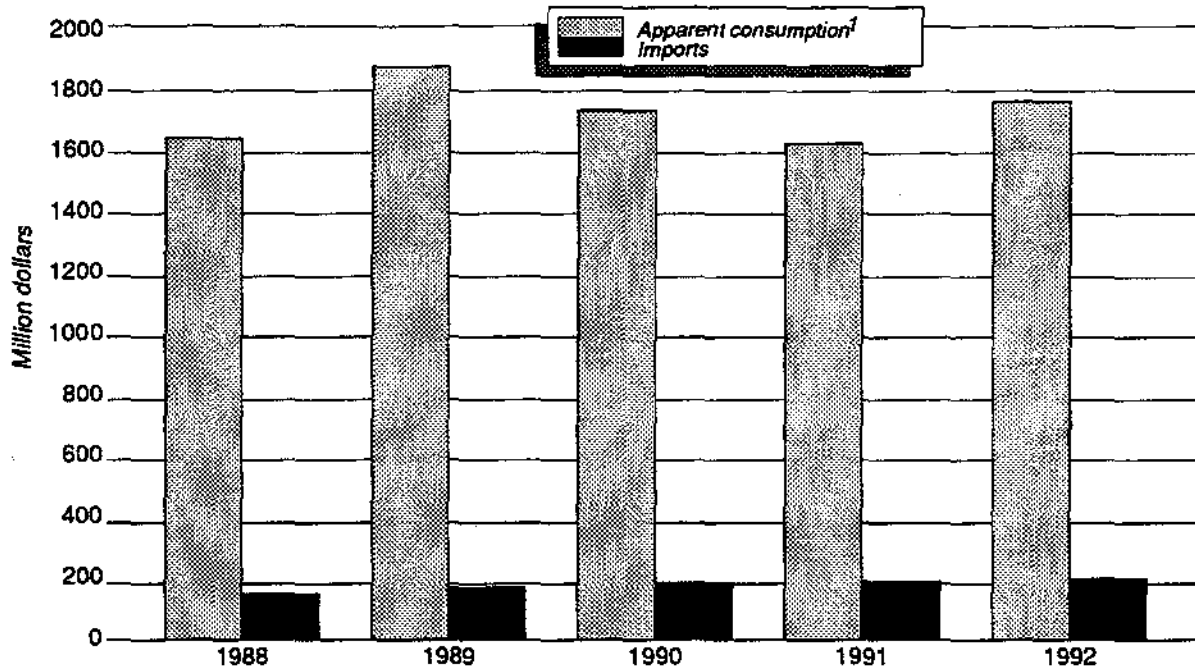
HTS subheading	Description	Col. 1 rate of duty as of Jan. 1, 1993		U.S. exports, 1992	U.S. imports, 1992
		General	Special ¹		
<i>1,000 dollars</i>					
5905.00	Textile wall coverings:				
.10	Backed with permanently affixed paper	Free		795	15,618
.90	Any other wall covering	12.5%	Free (E*, IL, J*), 6.2% (CA)	7,158	1,131
Rubberized textile fabrics except tire cord:					
5906.10.00	Adhesive tape	5.8%	Free (A, E, IL, J), 2.9% (CA)	14,882	3,764
5906.91	Other, knitted:				
.10	Of cotton	5.3%	0.5% (IL), 2.6% (CA)	5,158	25
.20	Of manmade fibers, over 70 percent of rubber or plastics	4.2%	Free (A, E, J), 0.4% (IL), 2.1% (CA)	1,605	10,871
.25	Of manmade fibers, 70 percent or less of rubber or plastics	8.5%	0.9% (IL), 4.2% (CA)	1,606	2,153
.30	Of any other fibers	5.3%	Free (E*, J*), 0.5% (IL), 2.6% (CA)	522	27
5906.99	Other, not knitted:				
.10	Of cotton	5.3%	0.5% (IL), 2.6% (CA) ²	4,772	8,166
.20	Of manmade fibers, over 70 percent of rubber or plastics	4.2%	Free (A, E, J), 0.4% (IL), 2.1% (CA) ²	13,400	7,082
.25	Of manmade fibers, 70 percent or less of rubber or plastics	8.5%	0.9% (IL), 4.2% (CA) ²	13,400	8,597
.30	Of any other fibers	6.6%	Free (E*, J*), 0.5% (IL), 3.3% (CA) ²	5,584	2,344
5907.00	Textile fabrics otherwise impregnated or coated; painted canvas:				
.10	Laminated textile fabrics	16%	1.6% (IL), 8% (CA) ²	47,212	838
.90	Painted canvas, studio back-cloths, etc	5.8%	Free (E*, IL, J*), 2.9% (CA) ²	47,212	14,810

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

² Certain fabrics that are classified as upholstery fabrics originating in the territory of Canada and that are certified by the importer as intended for use as outer covering in the manufacture of upholstered furniture are duty-free.

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

Figure 5
Coated fabrics: Apparent U.S. consumption and U.S. imports, 1988-92



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

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

Imports

Products imported

Polyvinyl chloride (vinyl) fabric constitutes the largest single category of U.S. coated fabric imports, as shown in figure 7. In 1992 these imports (HTS subheadings 5903.10.10 through 5903.10.30) accounted for 24 percent of total imports. About 90 percent of these vinyl fabrics contained a manmade fiber-base fabric (HTS subheadings 5903.10.15 through 5903.10.25). Rubberized textile fabrics (HTS subheadings 5906.10.00 through 5906.99.30) accounted for 22 percent of total imports, and polyurethane fabrics (HTS subheadings 5903.20.10 through 5903.20.30) accounted for 20 percent. Other important import categories were fabrics coated with plastics other than vinyl or polyurethane (HTS subheadings 5903.90.10 through 5903.90.30) and textile wall coverings (HTS subheadings 5905.00.10 through 5905.00.90), which accounted for 17 and 8 percent of U.S. imports, respectively.

Import levels and trends

U.S. imports of coated fabrics rose by 33 percent during 1988-92, from \$151 million to \$200 million (table 6). The majority of these imports are priced lower than the domestic products. These imported fabrics, such as imitation leather, are generally in the lower price range and are used in products in which

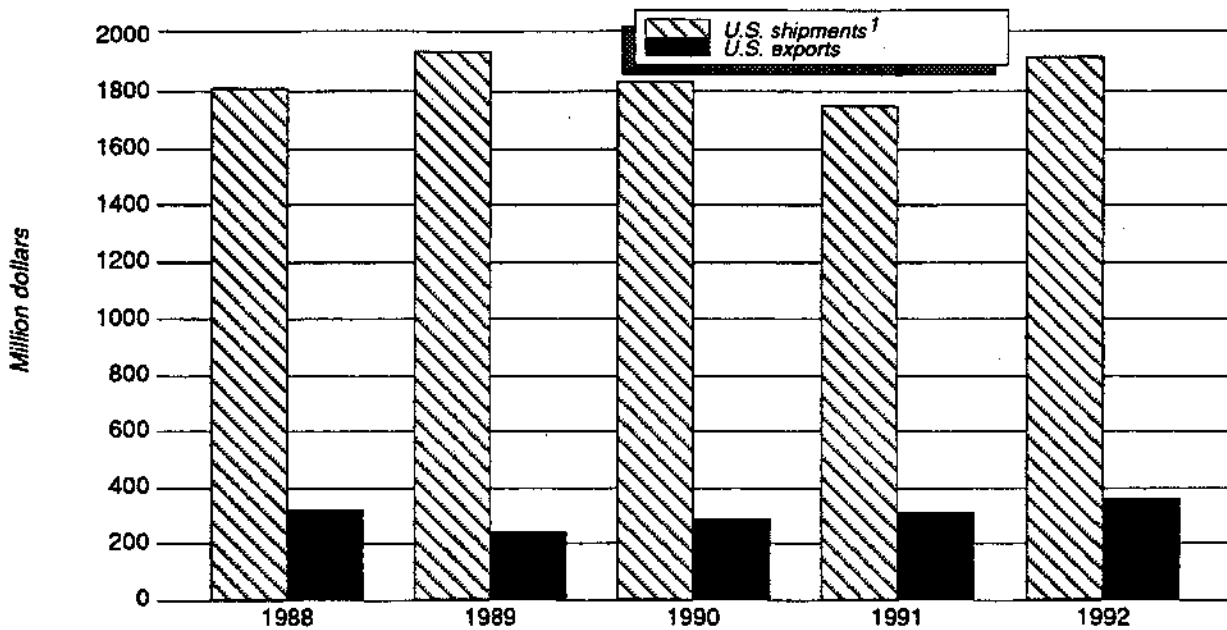
slight differences in quality are not significantly important. The majority of the imported fabrics are purchased under contract because of the various specifications that are required. These fabrics are imported directly by the end-use product manufacturer, by a converter, or through an importing agent or broker.

U.S. imports under HTS subheading 5905.00.10 (textile wall coverings, backed with permanently affixed paper) enter free of duty under the column 1-general rate. These imports came chiefly from Belgium and the Netherlands and were valued at \$15.6 million (8 percent of total imports) in 1992. About 5 percent, or \$10 million, of total imports that year entered duty free under subheading 9802.00.80 after being advanced or improved abroad. About 1 percent (\$2.5 million) of the imports entered duty free under the Generalized System of Preferences (GSP), the United States-Israel Free-Trade Area Implementation Act, and the Caribbean Basin Economic Recovery Act (CBERA).

Principal import suppliers

U.S. imports of coated fabrics from Canada, the largest supplier during 1988-92, amounted to 12.7 million kilograms valued at \$56.9 million in 1992. Canada supplied 48 percent of the quantity and 28 percent of the value of total U.S. imports in 1992 (see figure 8). Other principal suppliers in 1992 were Germany, Taiwan, Italy, and Japan which collectively

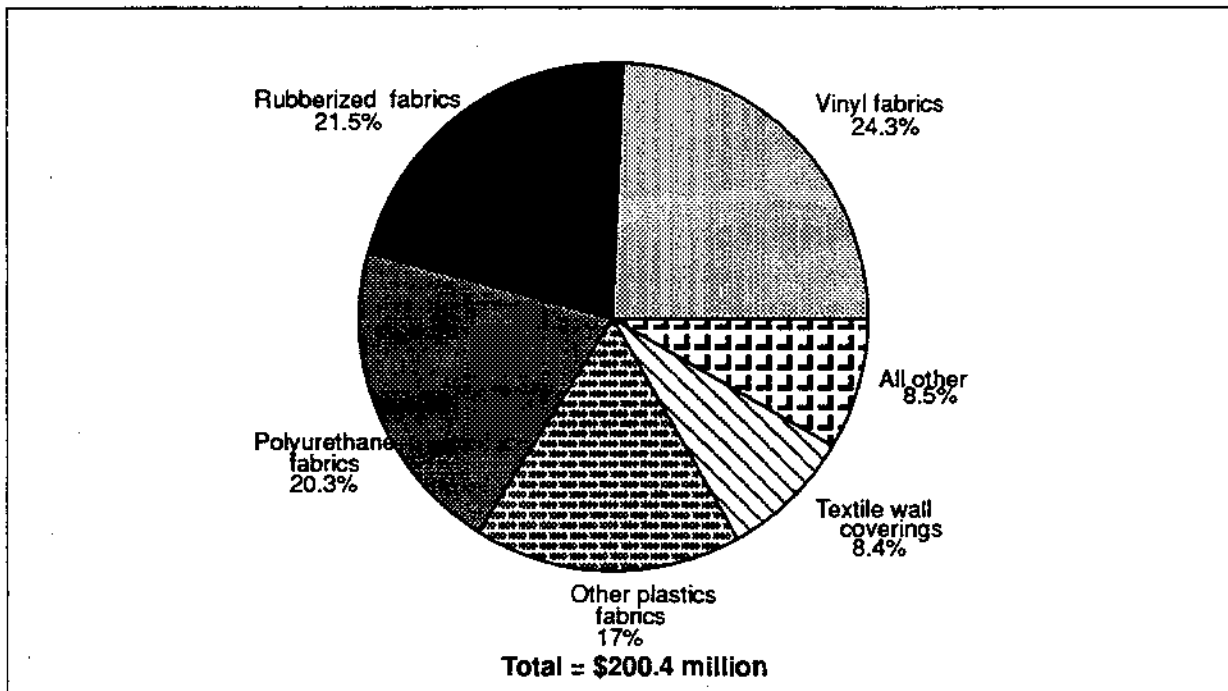
Figure 6
Coated fabrics: U.S. producers' shipments and U.S. exports, 1988-92



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

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

Figure 7
Coated fabrics: U.S. imports by types, 1992



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

Table 6
Coated fabrics: U.S. imports for consumption, by principal sources, 1988-92

Source	1988	1989	1990	1991	1992	
<i>Quantity (1,000 kilograms)</i>						
Canada	(1)	12,011	11,989	11,543	12,677	
Germany	(1)	2,239	2,213	2,209	1,941	
Taiwan	(1)	2,180	3,228	2,753	2,805	
Italy	(1)	1,224	1,174	1,234	1,461	
Japan	(1)	1,471	1,839	1,428	1,117	
Korea	(1)	1,608	1,656	1,845	1,709	
United Kingdom	(1)	632	447	377	727	
Belgium	(1)	498	714	377	481	
France	(1)	593	649	627	567	
Netherlands	(1)	488	455	350	348	
All other	(1)	2,475	1,758	2,400	2,818	
Total		13,838	25,419	26,122	25,146	26,651
<i>Value (1,000 dollars)</i>						
Canada	(1)	50,043	54,206	57,490	56,872	
Germany	(1)	18,234	21,818	23,191	24,080	
Taiwan	(1)	11,954	16,676	18,254	18,836	
Italy	(1)	14,287	15,708	16,443	17,540	
Japan	(1)	20,817	20,878	17,839	17,108	
Korea	(1)	7,153	7,027	10,489	13,006	
United Kingdom	(1)	10,096	7,888	5,998	10,259	
Belgium	(1)	9,047	9,097	7,844	7,953	
France	(1)	6,137	6,768	8,130	7,831	
Netherlands	(1)	8,697	8,297	6,239	5,433	
All other	(1)	15,170	16,234	17,571	21,472	
Total		150,511	171,634	184,597	189,488	200,390
<i>Unit value (per kilogram)</i>						
Canada	(1)	\$4.17	\$4.52	\$4.99	\$4.49	
Germany	(1)	8.14	9.86	10.50	12.41	
Taiwan	(1)	5.48	5.17	6.63	6.72	
Italy	(1)	11.67	13.38	13.32	12.01	
Japan	(1)	14.15	11.35	12.49	15.32	
Korea	(1)	4.45	4.24	5.69	7.61	
United Kingdom	(1)	15.97	17.65	15.91	14.11	
Belgium	(1)	18.17	12.74	20.81	16.53	
France	(1)	10.35	10.43	12.97	13.81	
Netherlands	(1)	17.82	18.24	17.83	15.61	
All other	(1)	6.13	9.23	7.32	7.62	
Average		10.88	6.75	7.07	7.54	7.52

¹ Country detail provided only for years in which there are actual import data under the HTS.

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

supplied 27 percent of the quantity and 39 percent of the value of total U.S. imports in 1992. The EC as a group supplied imports valued at \$80.5 million, or 40 percent of the total.

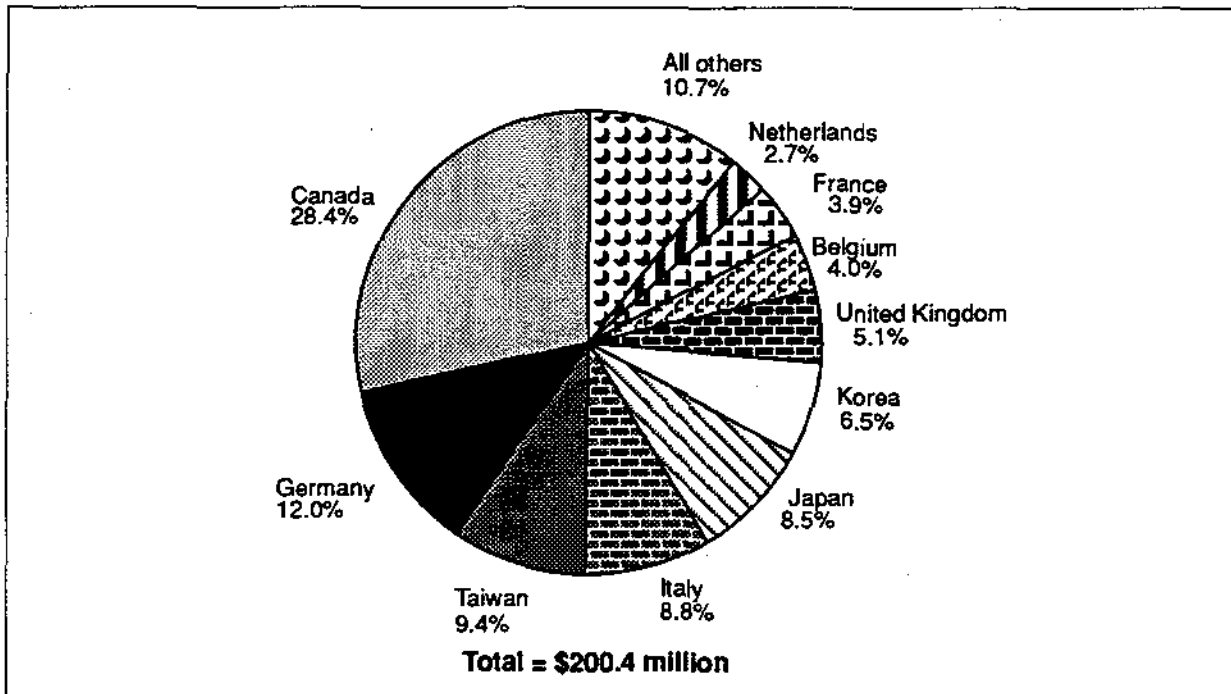
Canada and Taiwan supplied mainly lower priced fabric that had average unit values of less than \$4.50 and \$6.75 per kilogram, respectively. Germany, Italy, and Japan generally provided more expensive coated fabrics, with average unit values greater than \$12 per kilogram. Generally, a low average unit value indicates that the fabric is intended for use in consumer goods, whereas a higher average unit value indicates that the fabric is probably for use in industrial products.

FOREIGN MARKETS

Foreign Market Profile

The major foreign markets for U.S. exports of coated fabrics are Canada, Japan, and the EC. Other countries, such as Mexico, Hong Kong, Taiwan, and Korea, are also important markets, but on a smaller scale. Most developed countries produce and export these fabrics, as well as import them for manufacturing various end-use products. However, the exported fabric and the imported fabric in a particular foreign country are often of different specifications and do not directly compete with each other. Many foreign manufacturers of coated fabrics produce a limited

Figure 8
Coated fabrics: U.S. imports by principal sources, 1992



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

range of fabrics and, hence, do not have the equipment or expertise to make certain products.

U.S. exports of coated fabrics are usually recognized for their quality and consistency, which are often the primary factors influencing the purchasing decision for fabrics intended for "high-tech" or industrial purposes. Price is also an important factor in the purchasing decision. This is particularly so for fabrics intended for use in consumer goods, such as apparel. U.S. manufacturers generally experience their greatest competition with foreign manufacturers in such export markets.

Public and governmental concern in many foreign countries, particularly in Germany and the United Kingdom, regarding environmental issues may result in new laws and regulations that could benefit U.S. exports of coated fabrics. A major issue facing the coated fabrics industry in these countries is proper disposal of toxic substances required in many surfacing operations, such as those needed to obtain certain flammability levels or other properties. Although manufacturers are not necessarily prevented from producing these fabrics, the costs of complying with regulations regarding disposal of toxic substances, may lead them to choose not to produce the fabrics. Thus, some producers in the United States with lower costs for disposal of toxic waste, as well as producers in other countries that are not restricted from producing the fabrics, could have the opportunity to enter or to increase their share of the market.

U.S. Exports

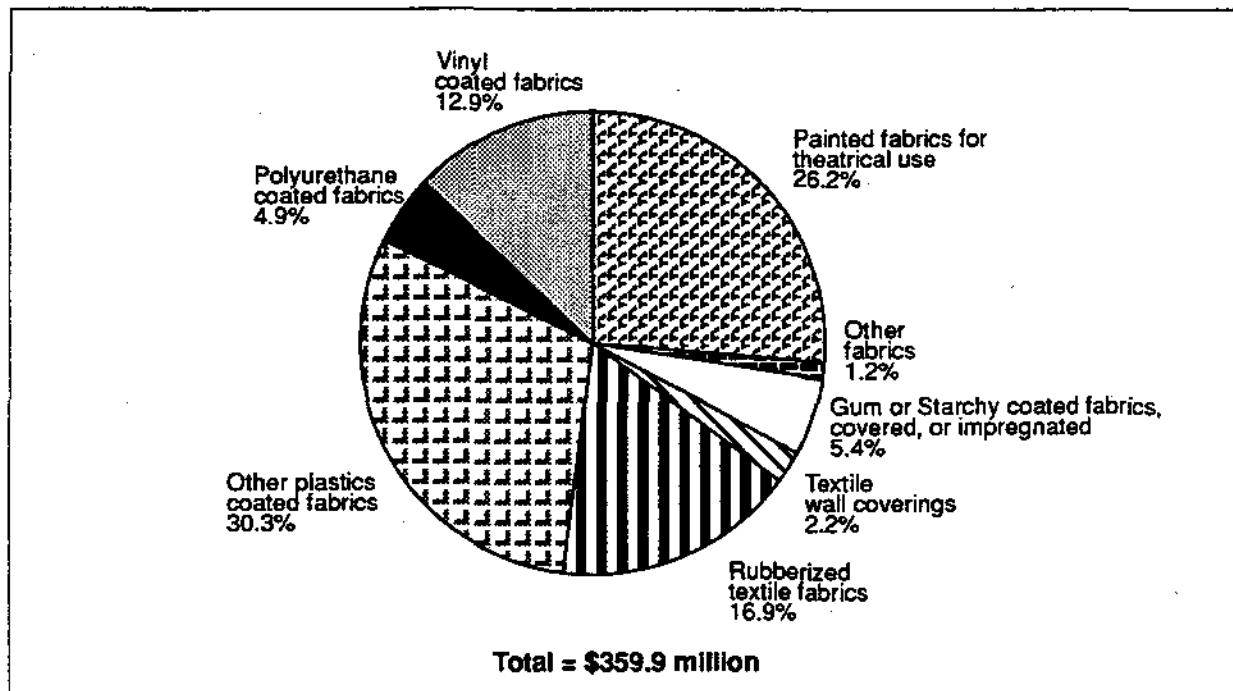
Products exported

U.S. exports of coated fabrics during 1988-92 consisted mostly of plastic-coated fabrics, as shown in figure 9. U.S. exports of plastic-coated fabrics in 1992 totaled \$173 million, or 48 percent of total U.S. exports. U.S. exports of rubberized fabrics in 1992 were valued at \$60.9 million, or 17 percent of total exports, and exports of painted fabrics for theatrical scenery or studio back-cloth were valued at \$94.4 million, or 26 percent of total exports. Exports of wall coverings totaled \$8 million, or 2 percent of exports.

In the near future, no significant change in the types of coated fabrics exported by the United States is expected. U.S.-produced coated fabrics for industrial uses will likely continue to be preferred over the products of many foreign producers when product performance is critical. On the other hand, lower priced fabrics from developing countries are increasing in the international market at the expense of some U.S. exports.

U.S. exporters of coated fabrics are primarily the larger manufacturers, including some converters and smaller, niche-oriented firms. None of these firms depends entirely on exports as a main source of revenue. Because exports primarily consist of the more technically sophisticated coated fabrics for industrial uses, they are usually customized ordered and presold to an end product manufacturer.

Figure 9
Coated fabrics: U.S. exports by types, 1992



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

Export levels and trends

U.S. exports of coated fabrics rose from \$239.0 million in 1989 to \$359.9 million in 1992, a 51-percent increase (table 7). Canada has been the largest export market for the U.S. coated fabrics industry in recent years. In 1992, Canada accounted for about one-third of the quantity and one-fourth of the value of total U.S. exports. As shown in figure 10, other important export markets for U.S. producers in 1992 were the United Kingdom, Mexico, Hong Kong, Germany, the Netherlands, and Japan. The EC as a whole received \$100 million (28 percent) of total U.S. exports in 1992. With the exception of a rising demand for certain fabrics used to prevent water pollution and drinking

water contamination in many third world countries, there have been no significant or rapidly growing segments for coated fabrics in foreign markets.

U.S. TRADE BALANCE

The United States maintained a trade surplus for coated fabrics each year during 1988-92. As shown in table 8 and figure 11, the surplus rose continuously from a low of \$67 million in 1989 to \$160 million in 1992. The improvement in the U.S. trade balance for coated fabrics during 1989-92 primarily reflected growth in U.S. exports, especially to Canada and the EC. U.S. imports rose slightly during the period.

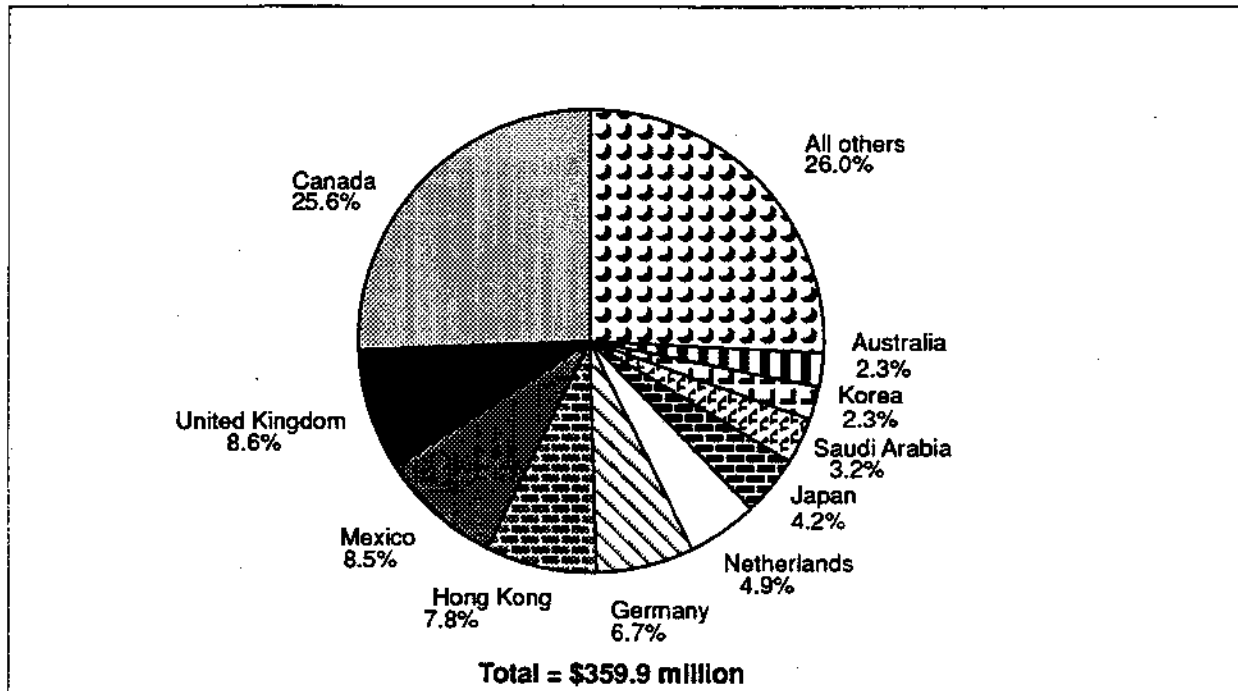
Table 7
Coated fabrics: U.S. exports of domestic merchandise, by principal markets, 1988-92

Market	1988	1989	1990	1991	1992
<i>Quantity (1,000 kilograms)</i>					
Canada	(1)	9,813	17,848	13,979	14,653
United Kingdom	(1)	1,753	3,200	2,658	2,932
Mexico	(1)	7,114	6,536	4,358	5,959
Hong Kong	(1)	553	879	1,134	1,243
Germany	(1)	934	1,484	1,182	1,895
Netherlands	(1)	144	546	938	1,558
Japan	(1)	1,163	2,216	1,276	1,258
Saudi Arabia	(1)	354	201	565	942
Korea	(1)	294	707	714	738
Australia	(1)	1,287	1,655	966	940
All other	(1)	12,268	11,404	11,170	10,005
Total	47,457	35,687	46,676	38,938	42,123
<i>Value (1,000 dollars)</i>					
Canada	(1)	49,102	86,694	85,132	92,017
United Kingdom	(1)	16,204	24,777	27,231	31,067
Mexico	(1)	38,932	38,337	28,352	30,594
Hong Kong	(1)	9,349	10,233	15,351	28,009
Germany	(1)	9,371	11,970	15,825	24,133
Netherlands	(1)	1,665	3,787	10,964	17,521
Japan	(1)	16,207	19,891	15,979	14,964
Saudi Arabia	(1)	2,033	1,441	5,161	11,426
Korea	(1)	4,101	6,273	8,560	8,313
Australia	(1)	9,193	9,389	8,947	8,260
All other	(1)	82,851	74,244	91,872	93,610
Total	320,635	239,008	287,036	313,374	359,914
<i>Unit value (per kilogram)</i>					
Canada	(1)	\$5.00	\$4.86	\$6.09	\$6.28
United Kingdom	(1)	9.24	7.74	10.25	10.60
Mexico	(1)	5.47	5.87	6.51	5.13
Hong Kong	(1)	16.91	11.64	13.54	14.78
Germany	(1)	10.03	8.07	13.39	12.74
Netherlands	(1)	11.56	6.94	11.69	11.25
Japan	(1)	13.94	8.98	12.52	11.90
Saudi Arabia	(1)	5.74	7.17	9.13	12.13
Korea	(1)	13.95	8.87	11.99	11.26
Australia	(1)	7.14	5.67	9.26	8.79
All other	(1)	6.75	6.51	8.22	9.36
Average	6.76	6.70	6.15	8.05	8.54

¹ Country detail provided only for years in which there are actual export data under the HTS.

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

Figure 10
Coated fabrics: U.S. exports by principal markets, 1992



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

Table 8
Coated fabrics: U.S. exports of domestic merchandise, imports for consumption, and
merchandise trade balance, by selected countries and country groups, 1988-92¹

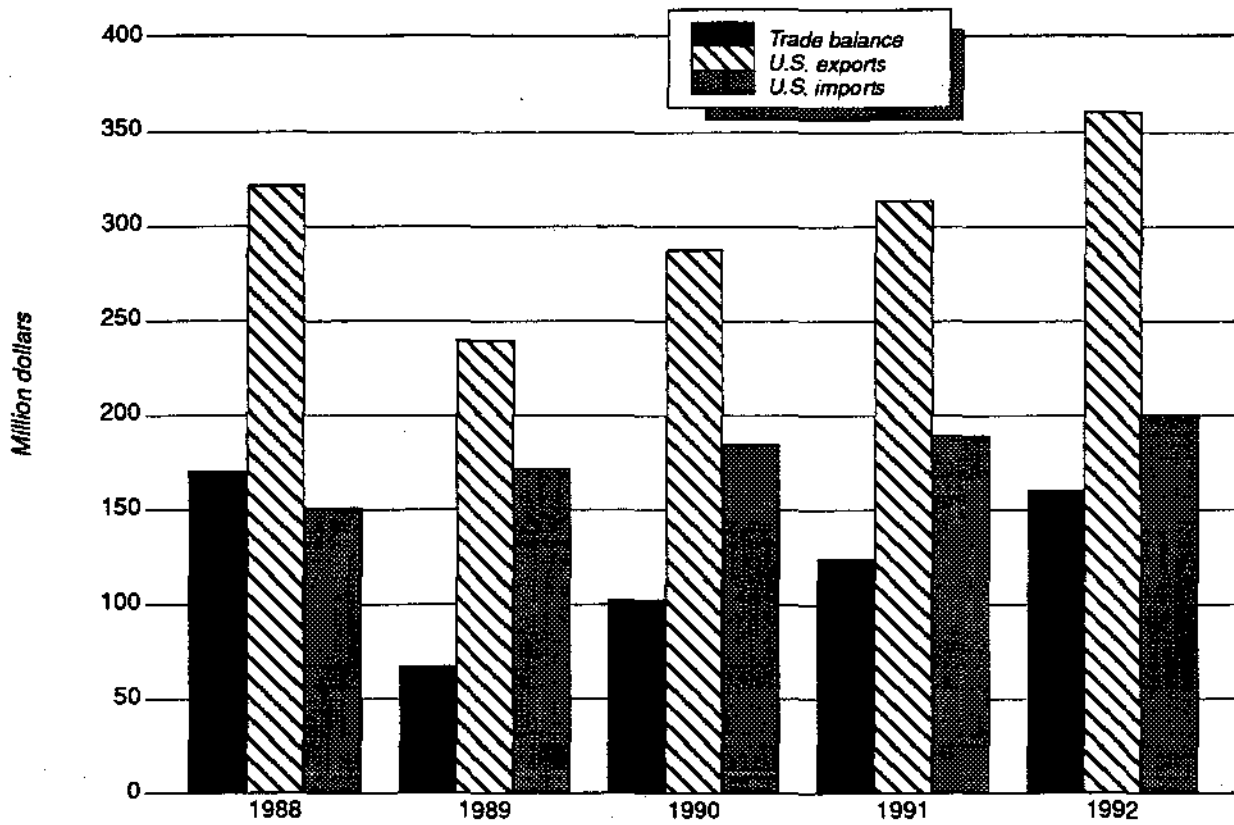
(Million dollars)

Item	1988	1989	1990	1991	1992
U.S. exports of domestic merchandise:					
Canada	72	49	87	85	92
Germany	14	9	12	16	24
Japan	22	16	20	16	15
United Kingdom	23	16	25	27	31
Mexico	34	39	38	28	31
Italy	9	5	6	8	7
Taiwan	4	4	4	5	5
Korea	6	4	6	9	8
Belgium	11	9	9	11	8
Netherlands	8	2	4	11	18
All other	119	85	76	98	121
Total	321	239	287	313	360
EC-12	76	53	66	86	100
OPEC	11	7	6	10	16
ASEAN	8	5	5	6	10
CBERA	30	14	8	11	8
Eastern Europe	1	1	1	1	1
U.S. imports for consumption:					
Canada	53	50	54	57	57
Germany	15	18	22	23	24
Japan	13	21	21	18	17
United Kingdom	7	10	8	6	10
Mexico	1	1	1	1	1
Italy	8	14	16	16	18
Taiwan	17	12	17	18	19
Korea	8	7	7	10	13
Belgium	3	9	9	8	8
Netherlands	5	9	8	6	5
All other	22	20	22	25	28
Total	151	172	185	189	200
EC-12	45	72	76	74	80
OPEC	0	0	0	0	0
ASEAN	0	0	1	2	3
CBERA	0	0	0	0	1
Eastern Europe	1	0	1	0	0
U.S. merchandise trade balance:					
Canada	19	-1	33	28	35
Germany	-1	-9	-10	-7	0
Japan	9	-5	-1	-2	-2
United Kingdom	16	6	17	21	21
Mexico	33	38	37	27	30
Italy	1	-9	-10	-8	-11
Taiwan	-13	-8	-13	-13	-14
Korea	-2	-3	-1	-1	-2
Belgium	8	0	0	3	0
Netherlands	3	-7	-4	5	13
All other	97	65	54	73	93
Total	170	67	102	124	160
EC-12	31	-19	-10	12	20
OPEC	11	7	6	10	16
ASEAN	8	5	4	4	7
CBERA	30	14	8	11	7
Eastern Europe	0	1	0	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 in "Eastern Europe."

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

Figure 11
Coated fabrics: U.S. trade balance, U.S. exports, and U.S. imports, 1988-92



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, Romania, 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
STATISTICAL TABLES

Table B-1
Coated fabrics: Harmonized Tariff Schedule headings and subheadings; description, tariff treatment in principal U.S. export markets

Percent ad valorem

HTS subheading	Brief description	Canada			Japan			European Community		Mexico ¹
		MFN ²	GPT ³	US ⁴	G ⁵	P ⁶	T ⁷	A ⁸	C ⁹	G ⁵
5407.30	Woven fabrics constructed of bonded yarns:	25	X	17.5	25	5, Free	10	21	11	10, 15
5407.30.10	Over 60 percent of plastic									
5407.30.90	Other									
5901.10	Book cover fabric:	22.5	15	15.7	10	Free	3.9	18	6.5	15
5901.10.10	Of manmade fibers									
5901.10.20	Of any other fibers									
5901.90	Tracing cloth, painting canvas, buckram and similar fabrics:	10.2, 22.5	Free, 15	7.1, 15.7	15	Free	4.8	18	6.5	10, 15
5901.90.20	Of manmade fibers									
5901.90.40	Of any other fibers									
	Textile fabrics impregnated, coated, or laminated:									
5903.10	With polyvinyl chloride:	22.5, 25	15, 16.5	15.7, 17.5	15	Free	4.2	18	12	10
5903.10.10	Of cotton									
5903.10.15	Of manmade fibers, over 60 percent of plastics									
5903.10.18	Of manmade fibers, 60 percent or less of plastics									
5903.10.20	Of manmade fibers, over 70 percent of rubber or plastics									
5903.10.25	Of manmade fibers, 70 percent or less of rubber or plastics									
5903.10.30	Of any other fibers									
5903.20	With polyurethane:	22.5, 25	15, 16.5	15.7, 17.5	15	Free	4.2	18	12	10
5903.20.10	Of cotton									
5903.20.15	Of manmade fibers, over 60 percent of plastics									
5903.20.18	Of manmade fibers, 60 percent or less of plastics									
5903.20.20	Of manmade fibers, over 70 percent of rubber or plastics									
5903.20.25	Of manmade fibers, 70 percent or less of rubber or plastics									
5903.20.30	Of any other fibers									
5903.90	With plastics, n.e.s.:	17.5, 15, 22.5, 25	15, 16.5	15.7, 15, 17.5	15	Free	4.2	18	12	20
5903.90.10	Of cotton									
5903.90.15	Of manmade fibers, over 60 percent of plastics									
5903.90.18	Of manmade fibers, 60 percent or less of plastics									
5903.90.20	Of manmade fibers, over 70 percent of rubber or plastics									
5903.90.25	Of manmade fibers, 70 percent or less of rubber or plastics									
5903.90.30	Of any other fibers									

See footnotes at end of table.

Table B-1
Coated fabrics: Harmonized Tariff Schedule headings and subheadings; description, tariff treatment in principal U.S. export markets

Percent ad valorem

HTS subheading	Brief description	Canada		Japan		European Community		Mexico ¹
		MFN ²	GFT ³	US ⁴	G ⁵	P ⁶	A ⁸	
5905.00	Textile wall coverings:							
5905.00.10	Backed with permanently affixed paper	11.3, 7.5, 22.5	Free, 15	9.2, 15.7	15	Free	18, 21, 4, 20, 16	5.8, 14, 8.8, 11, 6, 15
5905.00.90	Any other wall covering							
5906.10	Rubberized textile fabrics except tire cord:	22.5, 25	15, 16.5	15.7, 17.5	15, 20	Free	16	4.6
5906.10.00	Adhesive tape							
5906.91	Rubberized, knitted:	22.5, 25	15, 16.5	15.7, 17.5	20	Free	7.8, 18, 5.6	6.5
5906.91.10	Of cotton							
5906.91.20	Of manmade fibers, over 70 percent of rubber or plastics							
5906.91.25	Of manmade fibers, 70 percent or less of rubber or plastics							
5906.91.30	Of any other fibers							
5906.99	Rubberized, not knitted:	22.5, 25	15, 16.5	15.7, 17.5	15	Free	15, 18	12, 5.6
5906.99.10	Of cotton							
5906.99.20	Of manmade fibers, over 70 percent of rubber or plastics							
5906.99.25	Of manmade fibers, 70 percent or less of rubber or plastics							
5906.99.30	Of any other fibers							
5907.00	Textile fabrics otherwise impregnated or coated; painted canvases:	11.3, 22.5, 25, Free, 22.6	7.5, 15, Free, X	7.9, 15.7, Free, 15.8	15	Free	3.9, 4.9	Free
5907.00.10	Laminated textile fabrics							
5907.00.90	Painted canvas, studio back-cloths, etc							

¹ All imports into Mexico, including those from the United States, are subject to the "General" duties. The only exceptions are "special" duty rates applicable to members of the Latin American Integration Association (LAIA) Asociacion Latinamerica de Integracion (ALADI) countries (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Uruguay, and Venezuela). The LAIA/ALADI rates are not standardized for the group, rather they exhibit variance by country within a commodity classification.

² Most Favorite Nation Rate.
³ General Preference Tariff.
⁴ United States Rate.
⁵ General.
⁶ Preferential.
⁷ Temporary: includes the United States.
⁸ Autonomous.
⁹ Conventional, includes the United States.

Source: *The International Customs Journal by Douanes, for Mexico, European Community, and Japan, and the Canadian Customs Tariff "Harmonized System" Volume 2*, by McGoldrich's.

