Industry & Trade Summary

Industrial Papers and Paperboards

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PREFACE

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

This report on industrial papers and paperboards covers the period 1991-95 and represents one of approximately 250 to 300 individual reports to be produced in this series. Listed below are the individual summary reports published to date on the agriculture and forest product sectors.

USITC publication number	*Publication date*	*Title*
2459	November 1991	Live Sheep and Meat of Sheep
2462	November 1991	Cigarettes
2477	January 1992	Dairy Produce
2478	January 1992	Oilseeds
2511	March 1992	Live Swine and Fresh, Chilled, or Frozen Pork
2520	June 1992	Poultry
2544	August 1992	Fresh or Frozen Fish
2545	November 1992	Natural Sweeteners
2551	November 1992	Newsprint
2612	March 1993	Wood Pulp and Waste Paper
2615	March 1993	Citrus Fruit
2625	April 1993	Live Cattle and Fresh, Chilled, or Frozen Beef and Veal
2631	May 1993	Animal and Vegetable Fats and Oils
2635	May 1993	Cocoa, Chocolate, and Confectionery
2636	May 1993	Olives
2639	June 1993	Wine and Certain Fermented Beverages
2693	November 1993	Printing and Writing Paper
2726	January 1994	Furskins
2737	March 1994	Cut Flowers
2749	March 1994	Paper Boxes and Bags
2762	April 1994	Coffee and Tea

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

PREFACE-Continued

USITC publication number	*Publication date*	*Title*
2865	April 1995	Malt Beverages
2859	May 1995	Seeds
2875	May 1995	Certain Fresh Deciduous Fruits
2898	June 1995	Certain Miscellaneous Vegetable Substances and Products
2918	August 1995	Printed Matter
2917	October 1995	Lumber, Flooring, and Siding
2828	November 1995	Processed Vegetables

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ABSTRACT

This summary covers industrial papers and paperboards. Information is provided on both U.S. and foreign industry structure, tariff and nontariff measures, and market competitiveness for 1991-95.

- Industrial papers are a broad group of paper products comprising nearly one-third of the entire domestic paper industry. The United States is the leading world producer of all industrial papers. U.S. exports are competitive in foreign markets on the basis of price and quality; reflecting ample forest resources and efficient production facilities.

- U.S. industrial paper production increased from $36 billion to $46 billion during 1991-95. U.S. exports of industrial papers accounted for about 11 percent of domestic production in 1995, and imports accounted for about 4 percent of U.S. consumption. Major U.S. export markets for industrial papers include Canada, the European Union, and Japan. Important suppliers of U.S. imports include Canada, the European Union, and Mexico. Besides the United States, other significant world exporters are Sweden, Germany, Canada, and Finland.

- In 1995, about 89 percent of all industrial paper imports covered in this report entered the United States free of duty. The remaining imports were subject to an average trade-weighted duty of 2.8 percent. Various duties apply to U.S. exports; duty levels for Canada and Hong Kong are free, Japanese duties range from free to 3.4 percent, and Mexican duties range from free to 10 percent.

- Most industrial papers are marketed to industrial and commercial users. However, some industrial papers, such as many sanitary paper products, are marketed to households. Consumer demand for industrial papers closely parallels the condition of the U.S. economy.

INTRODUCTION

This summary covers industrial papers and paperboards. Information is provided on both U.S. and foreign industry structures,[1] domestic and foreign tariff and nontariff measures, and the competitiveness of U.S. producers in both domestic and foreign markets. The industries covered in this summary are varied and distinct, and include many intermediate products used in the fabrication of other paper and paperboard goods (e.g., various types of paper and paperboard containers) and sanitary paper products (toilet and other consumer tissues[2] as well as diapers and similar sanitary products). The majority of products covered herein are marketed to industrial users, but a portion is also marketed to households. The report generally covers the period 1991 through 1995.

Domestic production and consumption of summary products were about $45.7 billion and $42.5 billion, respectively, in 1995. All products covered in this summary are classified in chapter 48 of the *Harmonized Tariff Schedule of the United States (HTS)*, and represent a significant portion of that chapter. U.S. industrial paper and paperboard consumption accounts for about one-third of total paper and paperboard consumption.[3] The technical difference between paper and paperboard is thickness—paper is less than 0.012 inches thick. However, over time, this rigid distinction has lost some usefulness and the *HTS* does not make such a distinction. Consequently, for purposes of this report the term "paper" will be used to address the combined "paper and paperboard" group.

About 90 percent of the value of domestic production is concentrated in six product groupings—(1) sanitary paper products, (2) kraft linerboard (the facing material for corrugated containers), (3) recycled paperboards, (4) solid bleached sulfate board (packaging applications and other uses), (5) semichemical corrugating medium (the fluted sandwiched ply(s) in corrugated containers), and (6) kraft packaging papers (for sacks, bags, and other wrapping applications). The remaining production consists of many unrelated products, including such products as filter blocks, paint filters, condenser paper, plastic-coated papers, cloth-lined papers, tar paper, latex-coated papers, and greaseproof papers.[4] In 1995, on a value basis, sanitary paper products, kraft linerboard, and recycled paperboards respectively accounted for approximately 36 percent, 22 percent, and 15 percent of the domestic production associated with this summary.

U.S. trade involving industrial papers amounted to $7 billion in 1995, with U.S. exports reaching $5.1 billion and imports totaling $1.9 billion. The trade surplus in industrial papers increased from $2.4 billion in 1991 to $3.2 billion in 1995. U.S. exports of industrial papers are globally competitive, and in 1995 about 11 percent of domestic production was exported.

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[1] Appendix A depicts the indexing of *HTS* tariff headings and subheadings to six definable domestic industries. This appendix also indexes *HTS* headings and subheadings to three definable foreign industries.

[2] The approximately $9 billion tissue paper industry is a large portion of sanitary paper products.

[3] In 1995, domestic consumption of paper was about $150 billion.

[4] Data relating to production and consumption for these and other items are not available.

Prominent U.S. exports within this grouping are several types of packaging papers (e.g., unbleached kraft linerboard, bleached clay-coated papers, and bleached plastic-coated papers)[5] and diapers. Important U.S. imports are coated multi-ply paper, uncoated semichemical fluting medium, bleached kraft linerboard, tissue stock, and certain converted tissue products. Imports were equivalent to about 4 percent of U.S. consumption in 1995.

U.S. INDUSTRY PROFILE

Industry Structure

The Standard Industrial Classifications (SICs) applicable to products in this summary include 262—paper mills;[6] 263—paperboard mills; and 2676—sanitary paper products. Employment in paper and paperboard (SICs 262 and 263) fluctuated between 180,000 and 182,000 during 1991-94.[7] Employment in sanitary paper products (SIC 2676) fluctuated between 39,000 and 40,000 during 1991-94.[8]

Large facilities producing kraft linerboard, sanitary paper products, semichemical fluting medium, solid bleached sulfate board, and kraft packaging papers are found where the fiber resources are (the forests of the Southeastern, South Central, Atlantic Seaboard, New England, Great Lakes and Pacific Northwestern States). Large mills must be where they have access to tremendous amounts of water because water is the principal transport medium for wood fibers throughout all of the pulp and papermaking operations. Consequently, mills are usually on rivers and lakes. Smaller converted paper manufacturing facilities tend to be closer to urban areas, especially if much of their raw material is waste paper. Figure 1 depicts principal inputs, producer types, intermediate products, packaging products, and principal consumers for kraft linerboard, semichemical corrugating medium, and some recycled paperboard producers. Figure 2 depicts producer types, intermediate products, converting operations, marketing channels, and consumer products for sanitary paper products.

Papermaking is highly automated; nonetheless, many processes must be meticulously monitored and controlled by various automated systems requiring highly skilled labor. This is especially true for the large, relatively homogeneous product groupings. The remaining production

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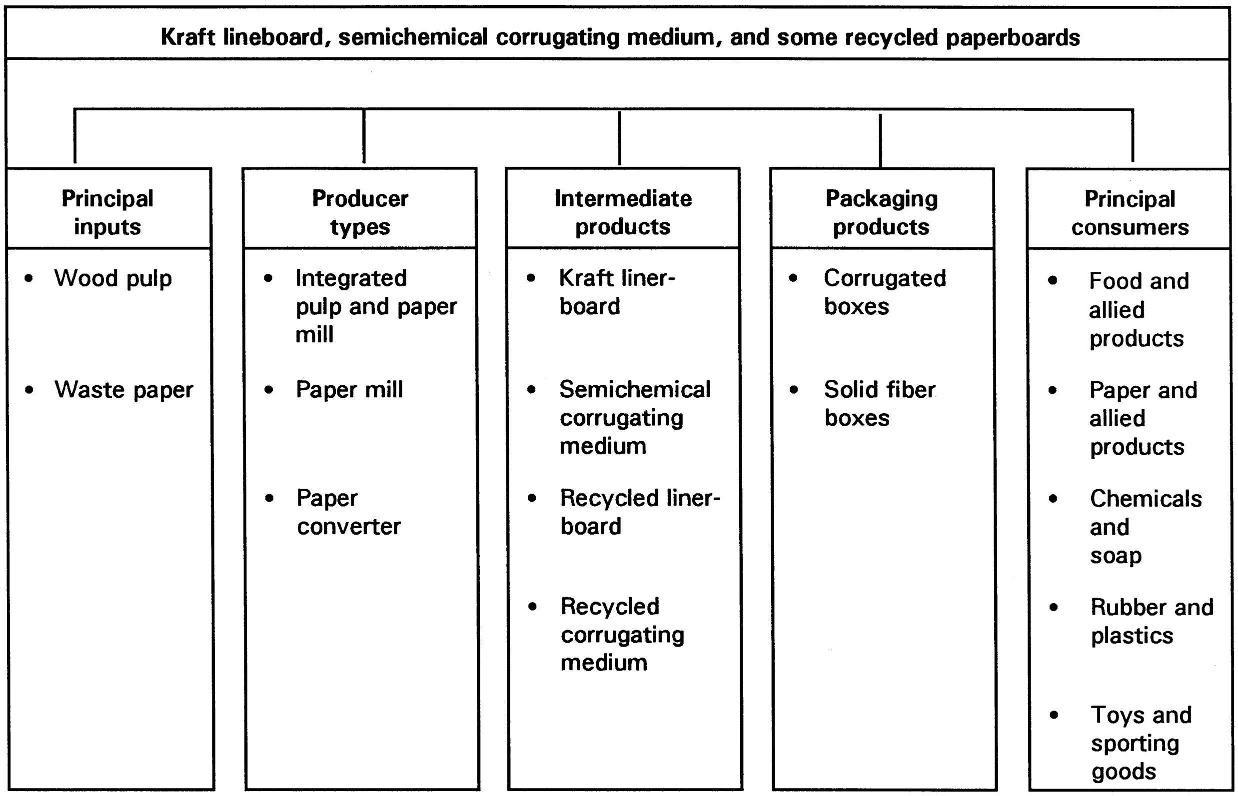
[5] Bleached plastic-coated papers and bleached clay-coated papers fall into the industry known as "solid bleached sulfate board."

[6] This group also encompasses all grades of printing/writing papers, newsprint, and other grades of paper not included in this summary.

[7] U.S. Department of Commerce, *Industrial Outlook, 1994.*

[8] Ibid.

Figure 1
Kraft linerboard, semichemical corrugating medium, and some recycled paperboards: Principal inputs, producer types, intermediate products, packaging products, and principal consumers

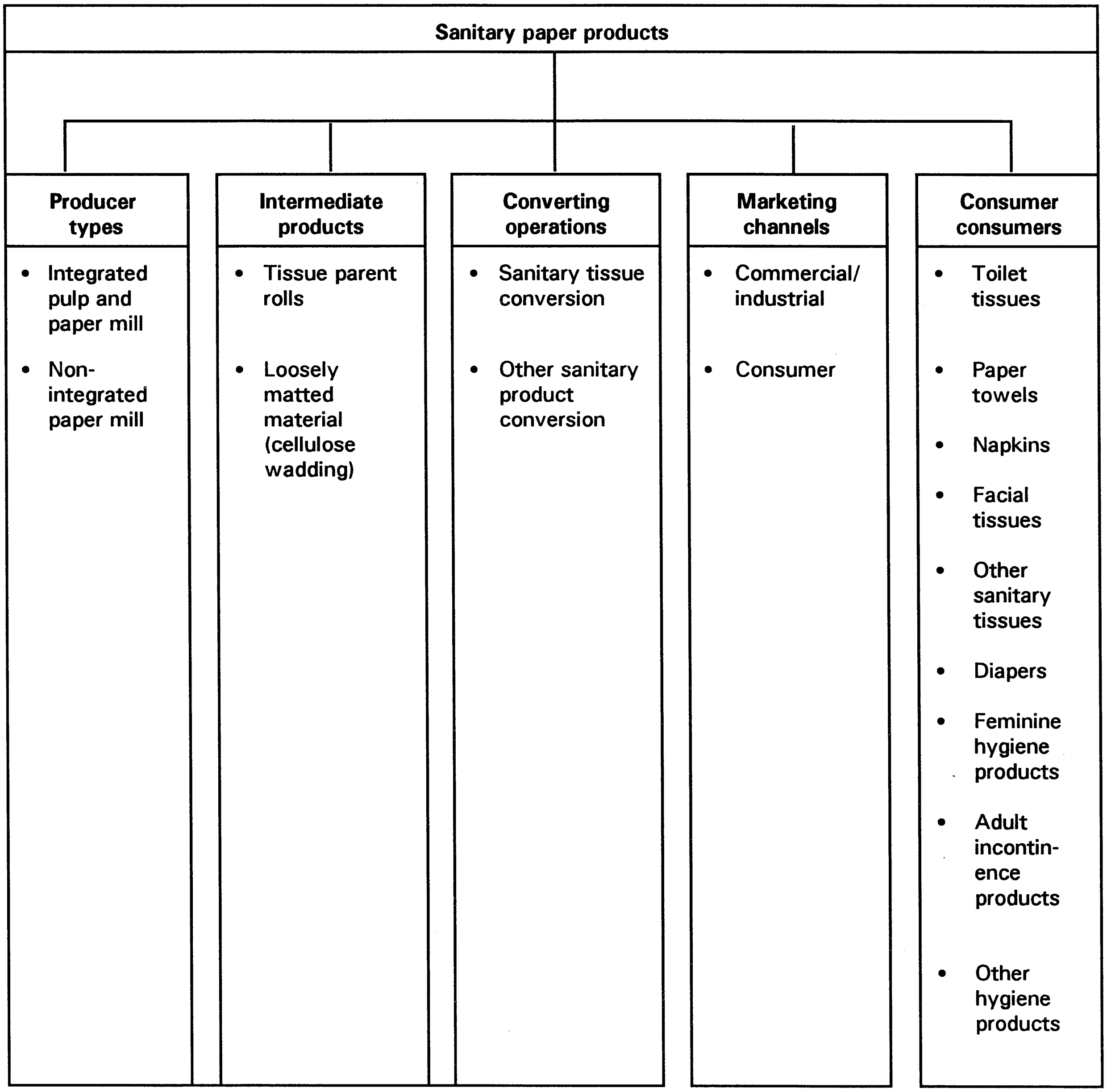


Source: Derived by the staff of the USITC.

associated with industrial papers is found in numerous smaller industries. This diverse group of small industries is estimated to account for about 10 percent of this summary's production but comprises over 70 percent of the tariff subheadings within this report. Hereafter, this diverse grouping of small industries is termed "sundry industrial papers." Production processes and converting operations for the sundry industrial papers grouping are generally not as high-speed and are often more labor-intensive than for the other groupings covered in this report. Nevertheless, a significant level of skill is required in order to operate the various papermaking and converting machinery.

Most large producers of solid bleached sulfate board, kraft packaging papers, kraft linerboard, and semichemical corrugating medium, and some producers of recycled paperboards are horizontally integrated. Within the sanitary paper products industry, the largest (sub)industry—the tissue industry—maintains a focus on tissue products and, more often than

Figure 2
Sanitary paper products: Producer types, intermediate products, converting operations, marketing channels, and consumer products



Source: Derived by the staff of the USITC.

not, does not produce nontissue grades of paper or other forest products such as lumber. In recent years, there has been some consolidation in the tissue industry. In 1995, the largest and sixth-largest tissue producers merged. One company had a significant presence in foreign markets, which the other company lacked, and the merger resulted in a more globally competitive organization.[9]

The producers of solid bleached sulfate board, tissue papers (a portion of the sanitary paper products industry), kraft linerboard, kraft packaging papers, and semichemical corrugating medium are usually large vertically integrated forest products companies. The large producers of recycled paperboards have a much more mixed level of vertical integration. The sundry industrial papers group has a limited level of vertical integration.

Many of the smaller paper mills and converting establishments producing sundry industrial papers are found in the Northeast. These smaller mills are often engaged in manufacturing "niche papers" (note the various production facilities, many of which make such papers, on table 1). The Great Lakes States follow the Northeast for the preponderance of small mills and converting establishments. This dispersion evolved, in part, as a result of the natural maturation of the paper industry. By contrast, many of the modern mills built in the Southeast and the Pacific Northwest employ more efficient machinery that is designed to run at much higher speeds, thus allowing these newer mills to compete on an international scale for commodity-grade products.[10,11] As a result, the existing smaller and slower speed mills in the Northeast and Great Lakes have been forced to alter their product lines to focus on "niche papers," which could be produced competitively on their existing slower and older machinery.[12]

Published prices for some of the commodity-grade products (e.g., 42-pound kraft linerboard,[13] 26-pound semichemical corrugating medium, 15-point[14] solid bleached sulfate board, etc.) can be found on a periodic basis in some trade publications. Transaction prices (along with other terms of the sale) are usually negotiated confidentially between a purchaser and seller and may not closely correlate to published prices.[15] Both sellers and purchasers of industrial papers may be paper mills, converting facilities, or paper merchants. Industrial papers are not highly advertised because many are intermediate products sold to other manufacturers. There are exceptions, the most notable of which is the sanitary paper products sector, which markets many products to the general public.

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[9] *Business Week*, "The Race for Bigness," Sept. 11, 1995.

[10] For purpose of this report, the term "commodity-grade" refers to four of the six major subgroups—kraft linerboard, solid bleached sulfate board, semichemical corrugating medium, and kraft packaging papers—as well as tissue papers.

[11] Based on information in various trade publications and conversations with industry and government officials, May-July 1996.

[12] Ibid.

[13] For the commodity-grade products in this report, the weight is expressed as the number of pounds per 1,000 square feet of material. This is also known as the basis weight.

[14] A point is a measure of paper thickness. One point is one-thousandth of an inch.

[15] Published prices for these products are useful for trend analysis or general price comparisons (for example, most paper prices bottomed-out in late 1993; solid bleached sulfate board commands a higher price than kraft packaging papers which commands a higher price than semichemical corrugating medium).

Table 1
Industrial paper production facilities, by type of paper: Regional dispersion of U.S. and Canadian manufacturing operations

Production facility[1]	North Atlantic[2]	South Atlantic[3]	South Central[4]	Great Lakes and Midwest[5]	West[6]	U.S. Total	Canada
Asphalt paper	9	2	2	4	5	22	5
Bag paper	13	10	20	18	11	72	15
Battery and condenser paper	7	2	1	3	1	14	0
Boxboard	53	17	13	42	17	142	15
Can board stock	5	2	0	11	7	25	5
Clothlined papers	3	1	1	3	0	8	0
Semichemical corrugating medium	2	7	9	10	6	34	11
Diapers	4	2	1	4	2	13	5
Filters/filter papers	24	4	4	15	1	48	3
Greaseproof papers	5	2	0	10	3	20	3
Latex papers	23	3	1	11	1	39	2
Unbleached kraft linerboard	5	19	18	3	10	55	8
Metallic-coated papers	22	1	1	5	1	30	2
Milk carton stock	2	4	2	1	3	12	1
Napkin stock	15	3	5	3	7	33	9
Shoe board	10	2	2	2	0	16	0
Facial tissues	15	4	4	8	9	40	10
Toilet tissues	22	5	9	10	9	55	16
Towels	20	5	5	11	11	52	15
Translucent papers	3	1	2	8	1	15	1
Vaporproof papers	7	2	0	5	2	16	1
Wrapping papers	33	14	10	32	10	99	14
Total[1]	302	112	110	219	117	860	141

[1]Some locations may make more than one type of paper. This is especially true of the large tissue mills.
[2]The North Atlantic includes West Virginia, Maryland, Delaware, Pennsylvania, and all other states to the north and east.
[3]Includes Virginia, North Carolina, South Carolina, Georgia, and Florida.
[4]Includes Kentucky, Tennessee, Alabama, Mississippi, Louisiana, Texas, Oklahoma, Arkansas, and Missouri.
[5]Includes Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Kansas, Nebraska, South Dakota, and North Dakota.
[6]Includes New Mexico, Colorado, Wyoming, Montana, and all states to the west except for Alaska and Hawaii.
Source: Derived by the staff of the USITC from data provided by *Lockwood-Post's Directory*, 1995.

About one-half of the primary paper shipped domestically travels over 300 miles.[16] However, many converted products travel far less distances because production facilities are often located near urban areas. For instance, approximately three-quarters of all domestic paperboard containers shipped travel less than 200 miles.[17]

Kraft Linerboard

Kraft linerboard is the strong exterior facing material used in corrugated containers.[18] The vast majority of all kraft linerboard is unbleached; however, there are some applications for bleached kraft linerboard. Kraft linerboard is made in a wide variety of basis weights, with the most common being 42-pound per 1,000 square feet. Four other common weights are 26-pound, 33-pound, 69-pound, and 90-pound per 1,000 square feet. Another type of linerboard is recycled linerboard. This product is not as strong as kraft linerboard and is made entirely from waste paper. Recycled linerboard production is about one-tenth the volume of kraft linerboard production.[19]

There are about 40 to 50 paper mills producing unbleached kraft linerboard; most of the larger companies have more than one mill.[20] In 1995, the market shares of the top 5 and top 10 companies were 48 percent and 77 percent, respectively.[21] The industry was reported to be operating at 93 percent capacity utilization in 1995.[22]

The 10 largest U.S. companies producing kraft linerboard each have at least one large pulp and paper mill in the Southeastern United States (table 1). A least two of these companies have as many as four mills in this area. The Pacific Northwest region is also an important area for kraft linerboard production. Merchants of kraft linerboard that are not associated with any particular mill can be found dispersed throughout the country.

Semichemical Corrugating Medium

Corrugating medium, similar to linerboard, is used in corrugated containers. The medium is the fluted material sandwiched between two plies of linerboard. In recent years, about two-thirds of all corrugating medium was semichemical[23] and the remainder was recycled. Semichemical medium contains no more than 25 percent recycled fibers. Recycled corrugating medium is

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[16] *Kline Guide to the Paper Industry*, 4th. ed.

[17] Ibid.

[18] If the container is extra heavy duty, other plies made of linerboard may be sandwiched inside the container.

[19] For the purposes of this report, recycled linerboard is covered under recycled paperboards.

[20] Derived from information contained in *Lockwood Posts's Pulp and Paper Directory*, 1995.

[21] *Pulp and Paper*, Jan. 1996.

[22] Ibid.

[23] Semichemical refers to the pulping process. The semichemical pulping process uses a combination of chemical and mechanical processes to break down virgin wood fibers.

significantly weaker than semichemical corrugating medium. However, recycled corrugating medium production is a fast-growing segment of the industry.[24]

Common basis weights for semichemical corrugating medium are 22-pound, 26-pound, 33-pound, 36-pound, and 40-pound per 1,000 square feet. The 26-pound per 1,000-square-foot sheet is considered the industry workhorse, comprising about 62 percent of production. Recently, the heavier weights have become more popular with a trend toward boxes offering increased compression strength.[25]

In 1995, an estimated 30 U.S. paper mills produced semichemical corrugating medium, and about the same number of mills produced recycled corrugating medium.[26] The five largest corrugating medium companies had more than one mill. The market shares of the top 5 and top 10 companies were 45 percent and 68 percent, respectively, in 1995.[27] In 1995, these mills were reported to be operating at 99 percent capacity utilization.[28] The larger mills in this industry are in the Great Lakes/midwestern, Southeastern, and Pacific-northwestern areas of the country (table 1). Independent merchants generally purchase corrugating medium from mills and market the product to corrugated box producers. These merchants are dispersed throughout the United States.

Solid Bleached Sulfate Board

Solid bleached sulfate board is one of over a dozen grades of paperboard that are categorized as "boxboard."[29] Solid bleached sulfate board is generally used in folding cartons, milk cartons, other containers, and some food service stock where superior folding, scoring, and printing characteristics are required. This premium paperboard grade is made from no less than 80 percent virgin wood fiber. Much of the solid bleached sulfate board is clay-coated or plastic-coated. Coatings improve the printing or wet-strength characteristics of the board. Basis weights vary from 40 lbs to 100 lbs per 1,000 square feet and the thickness ranges from 12 points to 28 points for packaging grades.

There are between 15 and 30 mills and converters produce solid bleached sulfate board.[30] Many of the larger solid bleached sulfate board mills are in the Southeastern United States. The market shares of the top 5 and top 10 companies in this industry sector were 69 percent and

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[24] For the purposes of this report, recycled corrugating medium is covered under recycled paperboards.

[25] *Pulp and Paper*, Oct. 1994.

[26] Derived from information contained in *Lockwood-Posts's Pulp and Paper Directory*, 1995.

[27] *Pulp and Paper*, Oct. 1995.

[28] Ibid.

[29] Table 1 (fourth row) depicts the geographic location of all boxboard mills and converting establishments. A number of boxboard mills, usually larger mills, produce solid bleached sulfate board.

[30] Derived from information contained in *Lockwood-Posts's Pulp and Paper Directory*, 1995.

89 percent, respectively, in 1995 and 1996.[31] The industry sector was running at 92 percent capacity utilization in 1996.[32]

Kraft Packaging Papers

Kraft packaging papers are strong uncoated papers used for sacks, bags, and assorted wrapping applications. Paper grocery bags account for about 40 percent of total domestic shipments of kraft packaging paper.[33] Multiwall shipping sacks, assorted wrapping and converting applications, and other sacks and bags, respectively, accounted for 38 percent, 17 percent, and 5 percent of shipments of kraft packaging papers.[34] Most basis weights for kraft packaging papers range from 30 pounds to 80 pounds per 1,000 square feet.

About 25 U.S. paper mills produce kraft packaging papers, and about 5 of the largest pulp and paper companies engaged in kraft packaging paper have more than one mill.[35] There are also many smaller converting establishments producing kraft packaging papers. The majority of the large mills are located in the Southeastern United States; however, there is notable production in the Great Lakes area and the Pacific Northwest. The market shares of the top 5 and top 10 companies in this industry were 74 percent and 99 percent, respectively, in 1995.[36] The industry was running at 84 percent capacity utilization during that year.[37]

Sanitary Paper Products

This large converting industry can be divided into two sectors: the "tissue" sector and the "other converted sanitary paper products" sector. Annual tissue production is estimated at over $9 billion while "other converted sanitary paper products" is about $7 billion.[38]

The "other converted sanitary paper products" sector includes disposable baby diapers, feminine hygiene products,[39] various adult incontinence products,[40] and a myriad of other home, hospital, and clinic articles. In recent years, three large vertically integrated forest products companies

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[31] *Pulp and Paper*, Oct. 1996.
[32] Ibid.
[33] *Pulp and Paper*, Nov. 1995.
[34] Ibid.
[35] Derived from information contained in *Lockwood-Posts's Pulp and Paper Directory*, 1995.
[36] *Pulp and Paper*, Nov. 1995.
[37] Ibid.
[38] Estimated by the staff of the USITC based on official statistics of the U.S. Department of Commerce, trade association data, various industry publications, and conversations with government and industry officials.
[39] Trade in disposable baby diapers and feminine hygiene products is reported under provisions of *HTS* subheading 4818.40.
[40] Trade in adult incontinence products is reported under provisions of *HTS* subheadings 4818.40 and 4818.50.

have accounted for about 90 percent of domestic baby diaper sales.[41] In recent years, the "other converted sanitary paper products" sector has been more dynamic, and domestic competition has been intense.[42] This is attested by development of new products and markets, aggressive advertising campaigns, the development of environmentally acceptable disposable products, packaging designs providing for more compactness, and altered pricing patterns.

Major products in the tissue sector include toilet paper, paper towels, napkins, facial tissue, and other sanitary tissues.[43] Toilet tissue accounts for about 41 percent of total domestic tissue shipments.[44] Paper towels, napkins, facial tissues, and other tissues, respectively, accounted for 32 percent, 14 percent, 6 percent, and 7 percent of all shipments of tissues.[45]

The tissue sector can be further subdivided along marketing lines—the consumer products group (i.e., marketed to households) and the commercial/industrial products group. The consumer product group of the tissue sector is one of the few segments within the entire pulp and paper industry that markets to the general public and thus needs to advertise. The nonconsumer product group (i.e., the commercial/industrial group) markets to commercial and industrial users, and comprises about one-third of the entire tissue sector. Generally the companies engaged in marketing commercial/industrial tissues are different companies from those engaged in marketing household tissues.

Some of the larger tissue companies have a few big pulp and paper mills scattered throughout the country. The location of domestic tissue mills tends to be more geographically dispersed than mills producing other commodity-grade products. One reason for this dispersion is the suitability of shorter hardwood fibers for use in tissue production. Hardwood trees tend to be more widely dispersed than softwood trees. The market share of the top five tissue companies was 75 percent in 1995[46] and the industry ran at 93 percent capacity utilization.[47]

Recycled Paperboards

Products made from recycled paperboard include folding cartons, corrugated containers, rigid set-up boxes, paper tubes and cores, gypsum wallboard facings, solid fiber partitions, book covers and binders, and insulation board.[48] The primary recovered inputs going into the production of these paperboards are old corrugated containers, new double-lined kraft corrugated clippings, and old newspapers.[49] There are limits on how often recovered fibers can be reused, because papermaking fibers continually and markedly degrade with each

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[41] U.S. Department of Commerce, *U.S. Industrial Outlook, 1994.*

[42] Ibid.

[43] Trade in the various tissues is reported under provisions of *HTS* subheadings 4803.00, 4818.10, 4818.20, and 4818.30.

[44] *Pulp and Paper*, Feb. 1996.

[45] Ibid.

[46] Ibid.

[47] Ibid.

[48] *Pulp and Paper*, June 1996.

[49] Ibid.

papermaking operation.[50] Another challenge associated with recycled paperboard production is removing the many contaminants (e.g., adhesives, ink, plastics, tape, staples, glass, styrofoam, etc.). In terms of domestic size, this industry segment, which is growing at about 6 percent annually, falls third behind sanitary paper products and kraft linerboard.

Recycled corrugating medium and recycled linerboard each account for about 25 percent of total domestic shipments of recycled paperboards.[51] Tubes, cores, and other converted products account for 22 percent of shipments of recycled paperboards, while folding carton board and gypsum wallboard accounted for about 20 percent and 9 percent, respectively, of all shipments of recycled paperboards.[52] Unlike the other major paper and paperboard industries, recycled paperboard facilities need not be near a source of virgin fiber (i.e., a forest). In fact, it is sometimes advantageous for production facilities to be near urban areas since these areas are good sources for waste paper. In 1995, the market shares of the top 5 and top 10 companies in the recycled paperboard industry were 31 percent and 51 percent, respectively, and this industry, as a whole, was operating at 91 percent capacity utilization.[53] Capacity is expected to increase in the coming years as new mini-mills[54] are scheduled to come on line.[55]

Environmental Issues

In the face of increased pressure from customers, environmental groups, and provisions of present and proposed environmental legislation, the paper industry has developed methods to minimize air and water pollution generated by pulp and papermaking operations.[56] Furthermore, the industry is generally viewed as significantly advancing efforts to use more recycled material, thereby reducing the amount of solid waste entering landfills.[57]

The paper industry has also been actively developing alternative methods to bleach products without using chlorine, because chlorine bleaching can result in a hazardous byproduct, dioxin.[58]

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[50] The many thread-like fibrils on each individual wood fiber are continually damaged with each subsequent papermaking operation. Extensive interlocking among the fibrils must take place in order to give the paper its inherent strength. Recycled fibers, lacking unbroken fibrils, will not hold together as well or for as long as virgin fibers.

[51] *Pulp and Paper*, June 1996.

[52] Ibid.

[53] Ibid.

[54] Technically, a mini-mill has one machine with output limited to about 400 tons per day.

[55] Based on information in various issues of *Pulp and Paper*, 1994-95.

[56] Based on information in various trade publications and conversations with industry and government officials, May-July 1996.

[57] The recycled paperboard industry has doubled in size over the last decade.

[58] Based on information in various trade publications and conversations with industry and government officials, May-July 1996.

The industry has reduced its dioxin production by 90 percent since 1988.[59] In addition, the industry is producing and marketing more unbleached products. For example, brown paper bags are now often used by fast-food outlets in place of bleached white bags.[60]

Industry Profitability

Profitability in the paper industry is generally viewed as being linked to sales. In turn, sales are linked to the volume of production and prices. Prices for commodity-grade products are very cyclical. A robust market and strong operating rates result in good prices and good profits. During profitable periods, commodity producers historically have invested in additional capacity.[61] These capital-intensive additions require long periods of construction time, and often come on stream in future years when a weakening economy results in lower operating rates and minimal profits. As the economy strengthens and demand increases, operating rates and profits again return to favorable levels.

Because of this cyclical aspect, the paper industry has often been reluctant to make large-scale expansions during boom times.[62] More often than not, capacity expansions have been in the form of minor capital refinements rather than major capital projects. For example, a mill may re-tool an existing paper machine, thereby enabling that machine to operate at a higher speed, rather than constructing a new greenfield mill.[63]

Profitability and returns were remarkably high for the forest products industry[64,65] in 1995; the forest products industry's return on equity was 19.1 percent; the return on capital was 11.6 percent; and the profit margin was 7.0 percent.[66] A major reason for this strong profitability in 1995 was improved commodity-grade prices. In 1995, commodity-grade prices generally averaged 10 percent to 50 percent higher than similar prices posted in 1994.[67]

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[59] U.S. Global Trade Outlook, 1995-2000, U.S. Department of Commerce, Mar. 1995. The industry spent over $1 billion toward this endeavor.

[60] McDonald's Corporation switched from using bleached paper bags to brown paper bags in an attempt to demonstrate its sensitivity to environmental issues.

[61] Based on information in various trade publications and conversations with industry and government officials, May-July 1996.

[62] Ibid.

[63] Ibid.

[64] Specific profitability data are not available for the industrial paper segment.

[65] "Annual Report on American Industry," *Forbes*, Jan. 1996.

[66] Ibid.

[67] Derived from official statistics of the U.S. Department of Commerce.

U.S. MARKET

Consumer Characteristics Affecting Demand

The principal consumers of the majority of products covered in this summary are commercial and industrial users, including the "paper box and bag fabricating industry."[68] However, tissue products are marketed to household as well as commercial and industrial users, and other sanitary products are primarily marketed to households.

Overall demand for paper has grown steadily—in the neighborhood of about 2 percent per year.[69] The growth in demand generally correlates to GDP growth. During general economic downturns, certain segments of this grouping are especially adversely affected (e.g., those papers used as inputs to industrial container fabrication) while other segments fare better (e.g., household tissues).

Historically, papermaking has been a production-oriented industry (differing from a market-oriented industry). Recently, however, the industry has been more sensitive to consumer pressures as attested by the industry's attempt to ratchet upward the amount of waste paper being utilized.[70]

Most industrial papers are not highly advertised because most are intermediate products sold to other manufacturers.[71] It is believed that the paper industry spends less than 2 percent of its total sales dollars on advertising. However, "corporate advertising" (versus product advertising) has increased in recent years, as forest product companies endeavor to portray a responsible and environmentally sensitive corporate image.[72]

A significant portion of primary and converted paper production is sold directly to nonpaper manufacturers on a direct-mill basis or is consumed in captive company-owned operations.[73] Nonetheless, sizeable quantities of product move through wholesale and retail distribution channels and ultimately to consumers.[74]

[68] The paperboard box and bag industry is estimated to be over $35 billion. See USITC Industry and Trade Summary on Paper Boxes and Bags, Publication 2749, Mar. 1994.

[69] Derived from numerous monthly issues of the American Forest & Paper Association's *Paper, Paperboard & Wood Pulp* Monthly Statistical Summary, 1991-95.

[70] Based on information in various trade publications and conversations with industry and government officials, May-July 1996.

[71] Ibid.

[72] Ibid.

[73] *Kline Guide to the Paper Industry*, 4th. ed.

[74] Ibid.

Consumption

U.S. consumption of industrial papers increased irregularly by 27 percent from $33.5 billion in 1991 to $42.5 billion in 1995 (table 2). Paper consumption roughly parallels GDP growth, absent some of the wide commodity price fluctuations; and GDP increased by roughly 23 percent during 1991-95. On a quantitative basis, figure 3 shows consumption, production, and imports for kraft linerboard, semichemical corrugating medium, solid bleached sulfate board, and kraft packaging papers (i.e., a grouping of major commodity-grade papers).

Imports of all industrial papers accounted for 4.4 percent of U.S. consumption in 1995, up from 2.8 percent in 1991 (table 2). During 1991-95, this percentage steadily increased, although it was still significantly less than the percentage exported. Sundry industrial papers[75] accounted for between 8 and 11 percent of all industrial paper consumption during 1991-95. A significantly higher percentage of sundry industrial paper consumption (about 25 percent) was supplied by imports than for commodity-grade papers.

Domestic consumption of kraft linerboard increased from 14.9 million metric tons in 1991 to 16.2 million metric tons in 1995, likely reflecting increased demand as the economy strengthened (table 3). Prices for kraft linerboard declined between 1991 and 1993, but generally increased in 1994 and 1995.[76] Accordingly, the value of domestic consumption of kraft linerboard declined irregularly from about $5.8 billion in 1991 to $5.3 billion in 1993, but then increased to $8.5 billion in 1995.

Domestic consumption of semichemical corrugating medium fluctuated between 4.9 million and 5.1 million metric tons during 1991-95 (table 3). Similar to linerboard, semichemical corrugating medium prices declined between 1992 and 1993, and then made noticeable rebounds in 1994 and 1995. The value of domestic consumption of semichemical corrugating medium fluctuated between $1.7 billion and $2.0 billion during 1991-94, but then jumped to nearly $2.8 billion in 1995.

Domestic consumption of solid bleached sulfate board fluctuated between 3.2 million and 3.5 million metric tons during 1991-95 (table 3). Prices for solid bleached sulfate board declined by about 11 percent during 1991-94, but rebounded in 1995. The value of domestic consumption of solid bleached sulfate board fluctuated between $2.9 billion and $3.4 billion during 1991-95.

Domestic consumption of kraft packaging papers declined irregularly from 2.3 million metric tons in 1991 to 1.9 million metric tons in 1995 (table 3). About 40 percent of kraft packaging paper consumption goes toward paper grocery sacks. Over the past decade, these sacks have been significantly displaced by plastic grocery bags. This displacement partially accounts for the decline in kraft packaging paper consumption during 1991-95.

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[75] This is a diverse and unrelated group of industrial papers which account for 55 of the 79 tariff subheadings within this report.

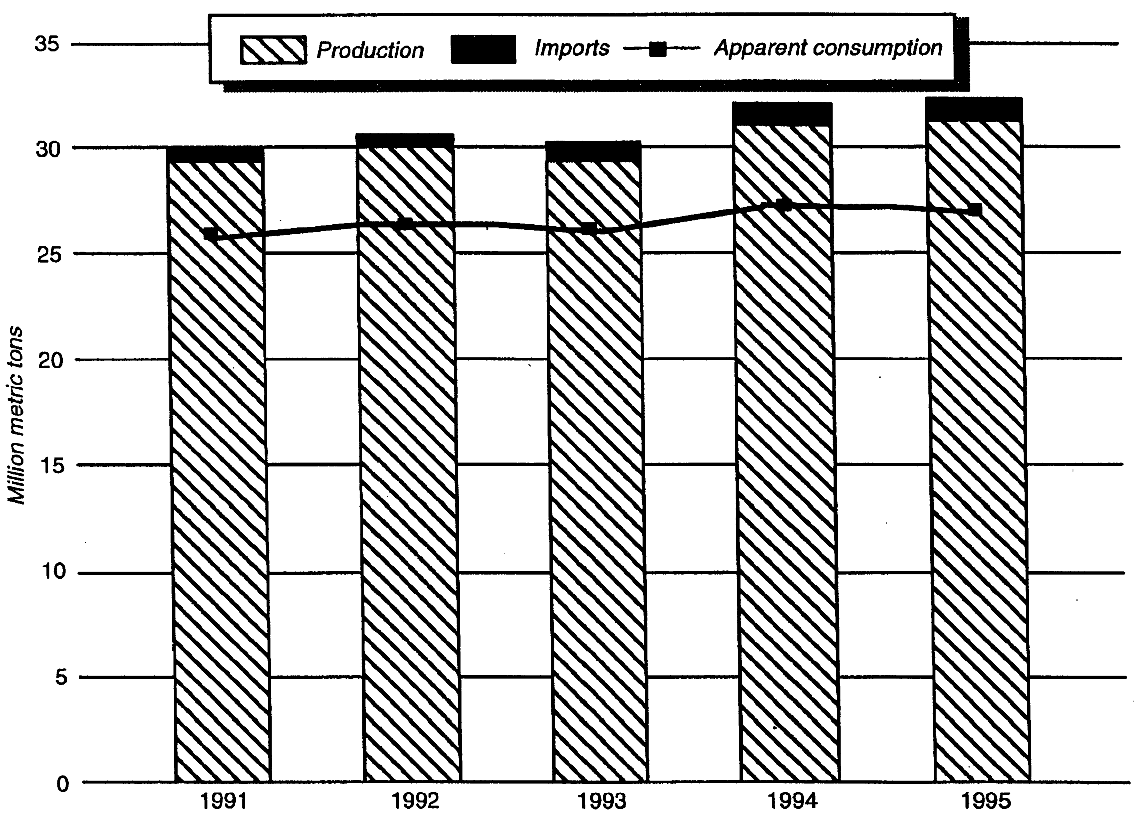
[76] Derived from official statistics of the U.S. Department of Commerce.

Table 2
Industrial papers: U.S. production, exports of domestic merchandise, imports for consumption, apparent U.S. consumption, ratio of imports to consumption, and ratio of exports to production, 1991-95

Year	U.S Production	U.S. Exports	U.S. Imports	Apparent U.S. Consumption	Ratio of Imports to Consumption	Ratio of Exports to Production
	Value (*billion dollars*)				*Percent*	
1991	35.9	3.3	0.9	33.5	2.8	9.2
1992	36.9	3.3	1.1	34.6	3.1	9.0
1993	35.9	3.3	1.1	33.7	3.3	9.3
1994	39.0	3.8	1.4	36.5	3.8	9.8
1995	45.7	5.1	1.9	42.5	4.4	11.1

Note.—Because of rounding, figures may not add to the totals shown.
Source: Trade data derived from official statistics of the U.S. Department of Commerce. U.S. production and consumption estimated by the staff of the U.S. International Trade Commission.

Figure 3
Certain commodity-grade industrial papers:[1] Production, imports, and domestic consumption, 1991-95



[1] Includes kraft linerboard, semichemical corrugating medium, solid bleached sulfate board, and kraft packaging papers.
Source: Production data are derived from American Forest and Paper Association, and import data are compiled from official statistics of the U.S. Department of Commerce.

Table 3
Certain industrial papers: U.S. consumption, 1991-95

	1991	1992	1993	1994	1995
	Value (Billion dollars)				
Kraft linerboard	5.8	5.9	5.3	6.0	8.5
Semichemical corrugating medium	1.7	1.8	1.7	2.0	2.8
Solid bleached sulfate board	3.2	3.0	2.9	3.0	3.4
Kraft packaging papers	1.6	1.5	1.5	1.4	1.6
Sanitary paper products	14.1	14.5	14.3	14.8	15.8
Recycled paperboards	4.1	4.3	4.8	6.1	7.0
	Quantity (Million metric tons)				
Kraft linerboard	14.9	15.4	15.3	16.0	16.2
Semichemical corrugating medium	4.9	5.0	4.9	5.1	4.9
Solid bleached sulfate board	3.4	3.2	3.3	3.5	3.5
Kraft packaging papers	2.3	2.4	2.3	2.3	1.9
Sanitary paper products	([1])	([1])	([1])	([1])	([1])
Recycled paperboards	([1])	([1])	([1])	([1])	([1])

[1]Not available.
Source: Estimated by the staff of the USITC based on official statistics of the U.S. Department of Commerce, trade association data, various industry publications, and conversations with government and industry officials, May-July 1996.

Like solid bleached sulfate board, prices for kraft packaging papers declined during 1991-94, but made a significant rebound in 1995. The value of domestic consumption of kraft packaging papers declined from about $1.6 billion in 1991 to $1.4 billion in 1994, but then again reached $1.6 billion in 1995.

U.S. consumption of sanitary paper products rose irregularly during 1991-95, from $14.1 billion to $15.8 billion (table 3). Domestic consumption of sanitary paper products is significantly more recession-resistant than most other types of paper products (especially when compared to commodity-grade papers).[77] On a value basis, imports of sanitary paper products accounted for approximately 3 percent of domestic consumption in 1995. About 60 percent of sanitary paper product consumption falls within the "tissue" sector, and the remainder falls within the "other sanitary paper products" sector. The largest portion of "other sanitary paper products" consumption is disposable baby diapers with a market size of over $4.0 billion.[78] Feminine hygiene products, adult incontinence products, hospital bedding and curtains, and hospital apparel articles follow disposable baby diapers consumption in the "other sanitary paper products" sector.

During 1991-95, U.S. consumption of recycled paperboards, reflecting a heightened interest in recycling, increased by about 70 percent from $4.1 billion to $7.0 billion (table 3). International

[77] Based on information in various trade publications and conversations with industry and government officials, May-July 1996.
[78] Estimated by the staff of the USITC based on official statistics of the U.S. Department of Commerce, trade association data, various industry publications, and conversations with government and industry officials, May-July 1996.

trade in recycled paperboards is relatively small, and U.S. imports account for only about 1 percent of consumption.

Per capita consumption of the two largest groups, kraft linerboard and recycled paperboards, were at 153 and 98 pounds, respectively, in 1995.[79] Table 4 presents apparent U.S. consumption and other key indexes, on a tonnage basis, for linerboard, recycled paperboards, corrugating medium, bleached paperboard, kraft papers, and tissue papers for 1995.

Production

During 1991-95, domestic production of industrial papers increased irregularly—by about 27 percent—from $35.9 billion in 1991 to $45.7 billion in 1995 (table 2). Kraft linerboard production, the second-largest grouping within this report, also increased irregularly—by about 8 percent—from 18.0 million metric tons in 1991 to 19.4 million metric tons in 1995 (table 5). Semichemical corrugating medium production fluctuated between 5.0 million metric tons and 5.3 million metric tons during 1991-95 (table 5). Semichemical corrugating medium production was at a level of 5.0 million metric tons in both 1991 and 1995.

Domestic production of solid bleached sulfate board increased from 4.1 million metric tons in 1991 to 4.8 million metric tons in 1995 (table 5). Throughout the period, the percentage of solid bleached sulfate board production that was exported increased steadily. In 1991, about 18 percent of solid bleached sulfate board production was exported; whereas, in 1995 about 27 percent of the production was exported. Kraft packaging paper production declined irregularly, going from 2.5 million tons in 1991 to 2.2 million metric tons in 1995 (table 5).

Production of sanitary paper products, the largest grouping within this report, increased from $14.5 billion in 1991 to $16.2 billion in 1995.[80] It is estimated that production of tissue papers, the largest section within sanitary paper products, was over $9 billion in 1995. In 1994, the latest year with available data, disposable baby diaper and feminine hygiene product production amounted to $4.3 billion and $1.7 billion, respectively.[81]

Recycled paperboard production increased by 41 percent—from 8.4 million metric tons in 1991 to 11.8 million metric tons in 1995 (table 5). An important factor affecting this increase was the consumer-driven demand for more paper products made from recyclable materials.[82]

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[79] Derived from data in various monthly issues of *Pulp and Paper*, 1995-96.
[80] Estimated by the staff of the USITC.
[81] U.S. Department of Commerce, *Census of Manufactures*.
[82] Based on information in various trade publications and conversations with industry and government officials, May-July 1996.

Table 4
Major industrial paper grades: Key indexes for 1995

Grade	Capacity	Production	Apparent U.S. consumption	Apparent U.S. consumption per capita	Capacity utilization	Market share: Top 5 producers	Market share: Top 10 producers
	1,000 short tons			Pounds	Percent		
Linerboard [1]	24,124	22,510	20,170	153	93	48	77
Recycled paperboard	14,201	12,965	12,939	98	91	31	51
Corrugating medium [2]	9,440	9,200	9,365	71	99	45	68
Bleached paperboard (SBS)	6,841	6,539	5,762	44	93	69	89
Kraft papers	2,364	1,990	2,091	16	84	74	99
Tissue [3]	6,583	6,154	6,161	[4]47	93	75	([5])
Total	[6]63,553	[6]59,358	[6]56,488	[4]412	[4]93	([5])	([5])

[1] Includes some recycled paperboard—roughly about 10 percent of capacity was recycled linerboard in 1995.
[2] Includes some recycled paperboard—roughly about 36 percent of capacity was recycled corrugating medium in 1995.
[3] The tissue sector is the largest component within the sanitary paper products grouping.
[4] Estimated by USITC staff.
[5] Not available.
[6] Overstated because some recycled paperboard statistics are also included with linerboard and corrugating medium.

Note.—Quantity data are in 1,000 short tons. Comparisons with other tables are cautioned. Most other tables are in metric tons or derived from other sources (e.g., American Forest and Paper Association, U.S. Department of Commerce, etc.).

Source: Derived from data in various issues of Pulp & Paper, "Grade Profile."

Table 5
Certain industrial papers: U.S. production, 1991-95

	1991	1992	1993	1994	1995
			(Million metric tons)		
Kraft linerboard	18.0	18.4	18.0	18.9	19.4
Semichemical corrugating medium	5.0	5.1	5.0	5.3	5.0
Solid bleached sulfate board	4.1	4.1	4.2	4.6	4.8
Kraft packaging papers	2.5	2.5	2.4	2.5	2.2
Recycled paperboards	8.4	9.1	10.4	11.1	11.8

Source: Estimated by the staff of the USITC based on official statistics of the U.S. Department of Commerce, trade association data, various industry publications, and conversations with government and industry officials, May-July 1996.

U.S. TRADE

Overview

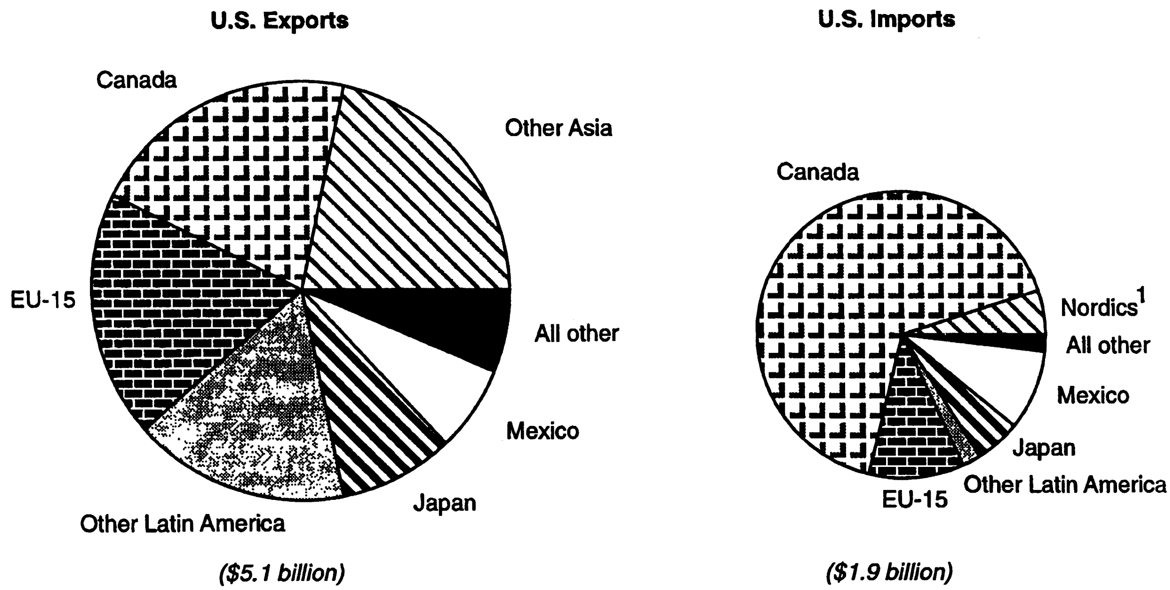
Total U.S. trade in industrial papers increased from $4.2 billion in 1991 to $7.0 billion in 1995. The United States posted significant trade surpluses in industrial papers every year during 1991-95. This surplus increased irregularly from $2.4 billion in 1991 to $3.2 billion in 1995. Figure 4 presents U.S. exports and imports of all industrial papers by major trading country or region for 1995. Table 6 depicts exports, imports, and trade balance for major U.S. trading partners during 1991-95.

In 1995, the largest trade surpluses in industrial papers were registered with Japan ($361 million), Hong Kong ($251 million), the United Kingdom ($181 million), and Mexico ($169 million). Trade deficits of over $10 million were posted with Canada ($186 million), Finland ($38 million), Sweden ($33 million), and Norway ($12 million).

Major changes in current trade patterns are generally viewed in the industry as unlikely in the foreseeable future. The United States, with abundant renewable forest resources coupled with efficient production facilities, is a very competitive producer of industrial papers.[83] U.S. exports of unbleached kraft linerboard are expected to continue to play a significant role in many global markets.[84] U.S. exports of solid bleached sulfate board and sanitary paper products are also likely to continue to strengthen.[85]

[83] Based on information in various trade publications and conversations with industry and government officials, May-July 1996.
[84] Ibid.
[85] Ibid.

Figure 4
Industrial papers: U.S. imports and exports, by country or region, 1995



[1] The Nordic countries are Sweden, Finland, and Norway.
[2] Minus Finland and Sweden.

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

U.S. Imports

Principal Suppliers and Import Levels

U.S. industrial paper imports doubled, on a value basis, from about $936 million in 1991 to just under $1.9 billion in 1995 (table 7). The largest supplier, Canada, supplied 66 percent of U.S. imports in 1995. Mexico, Japan, and Germany, respectively, supplied 9 percent, 5 percent, and 5 percent of 1995 imports. Figure 5 shows total industrial paper imports arranged into four groupings—kraft packaging papers, major grade paperboards, sanitary paper products, and all other industrial papers/paperboards.

Imports of all industrial papers were equivalent to about 4.4 percent of consumption (by value) in 1995. This ratio varied widely within the spectrum of industrial papers. Imports of unbleached kraft linerboard accounted for less than 1 percent of consumption in 1995.[86] On the other hand, imports of sundry industrial papers accounted for about one-quarter of U.S.

[86] Derived from official statistics of the U.S. Department of Commerce.

Table 6
Industrial papers: U.S. exports of domestic merchandise, imports for consumption, and merchandise trade balance, by selected countries and country groups, 1991-95[1]

Item	1991	1992	1993	1994	1995
	(Million dollars)				
U.S. exports of domestic merchandise:					
Canada	588	636	726	834	1,060
Japan	285	288	313	372	459
Mexico	283	327	325	371	338
Germany	199	145	124	121	176
Hong Kong	134	166	168	206	251
United Kingdom	158	165	163	162	210
Netherlands	114	99	98	111	177
Ecuador	93	70	62	74	144
Italy	91	98	70	81	137
Korea	98	83	70	106	131
All other	1,270	1,250	1,212	1,387	2,003
Total	3,314	3,328	3,331	3,827	5,085
EU-15	760	702	630	667	966
LATIN AMERICA	732	784	786	921	1,180
ASIA	1,020	984	969	1,207	1,556
U.S. imports for consumption:					
Canada	568	691	730	897	1,246
Japan	56	53	61	73	98
Mexico	67	61	53	84	169
Germany	55	59	54	87	86
Hong Kong	1	(2)	(2)	(2)	1
United Kingdom	23	27	26	35	29
Netherlands	13	17	16	20	26
Ecuador	0	0	0	(2)	0
Italy	4	3	6	6	7
Korea	2	2	2	2	2
All other	148	151	166	183	220
Total	936	1,065	1,114	1,388	1,884
EU-15	185	213	217	266	283
LATIN AMERICA	94	76	71	114	207
ASIA	66	62	72	86	116
U.S. merchandise trade balance:					
Canada	21	-55	-4	-63	-186
Japan	229	235	252	299	361
Mexico	216	266	272	287	169
Germany	143	86	70	35	90
Hong Kong	134	166	168	206	251
United Kingdom	136	138	137	127	181
Netherlands	101	82	82	91	150
Ecuador	93	70	62	74	144
Italy	88	95	64	75	130
Korea	96	81	68	104	129
All other	1,122	1,099	1,046	1,204	1,783
Total	2,378	2,263	2,217	2,439	3,20
EU-15	575	489	413	401	683
LATIN AMERICA	637	708	715	807	973
ASIA	954	922	896	1,121	1,440

[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."

[2] Less than $500,000.

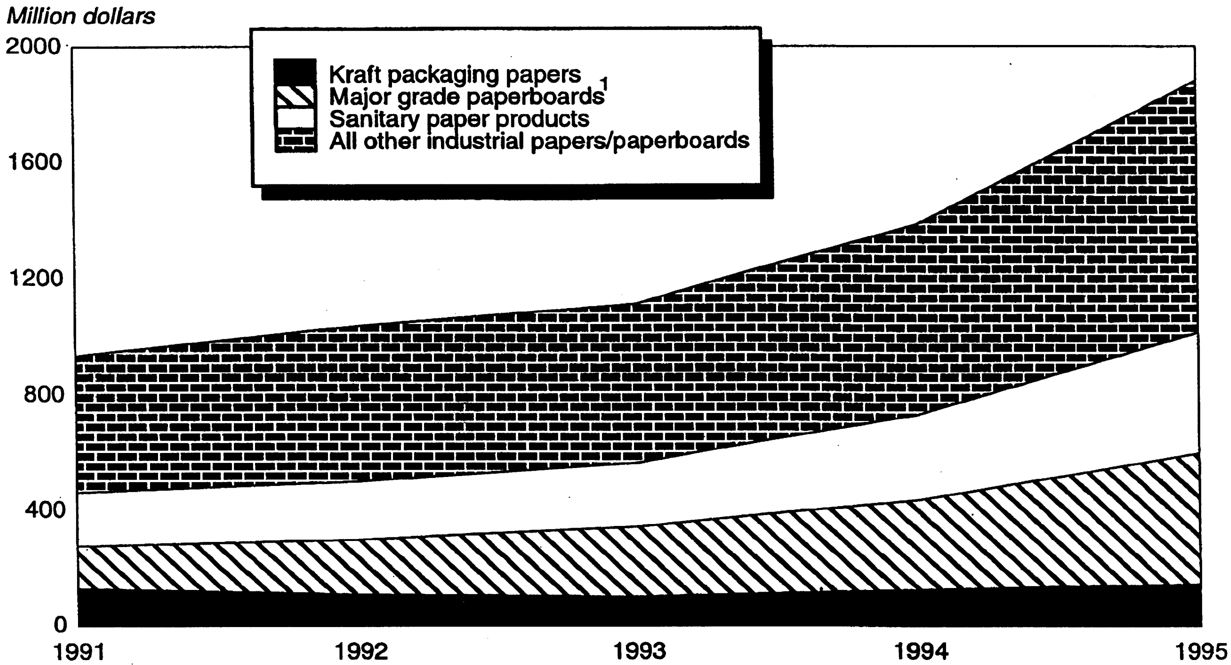
Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 7
Industrial papers: U.S. imports for consumption, by principal sources, 1991-95

Source	1991	1992	1993	1994	1995
	Quantity (1,000 metric tons)				
Canada	1,000	1,194	1,289	1,487	1,558
Mexico	103	110	98	154	259
Japan	11	12	17	19	32
Germany	25	25	26	53	43
France	18	24	32	27	29
Finland	16	19	26	45	44
Sweden	21	24	20	29	39
United Kingdom	4	7	5	12	8
Netherlands	18	21	21	24	31
Venezuela	10	9	8	36	44
All other	44	42	44	46	51
Total	1,270	1,487	1,587	1,933	2,137
	Value (Million dollars)				
Canada	568	691	730	897	1,246
Mexico	67	61	53	84	169
Japan	56	53	61	73	98
Germany	55	59	54	87	86
France	33	39	52	44	47
Finland	17	19	25	35	41
Sweden	31	35	28	32	40
United Kingdom	23	27	26	35	29
Netherlands	13	17	16	20	26
Venezuela	8	4	4	15	24
All other	65	59	66	65	78
Total	936	1,065	1,114	1,388	1,884
	Unit value (Dollars per kilogram)				
Canada	0.57	0.58	0.57	0.60	0.80
Mexico	0.65	0.55	0.54	0.54	0.65
Japan	4.91	4.47	3.52	3.83	3.11
Germany	2.25	2.40	2.06	1.63	2.02
France	1.85	1.63	1.59	1.65	1.63
Finland	1.02	1.01	0.94	0.78	0.92
Sweden	1.52	1.46	1.38	1.10	1.03
United Kingdom	5.09	4.14	5.44	3.02	3.53
Netherlands	0.72	0.82	0.74	0.80	0.84
Venezuela	0.79	0.51	0.46	0.43	0.55
All other	1.48	1.40	1.50	1.43	1.53
Average	0.74	0.72	0.70	0.72	0.88

Note.—Because of rounding, figures may not add to totals shown.
Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure 5
Industrial papers: U.S. imports, by group, 1991-95



[1] Includes kraft linerboard, semichemical corrugating medium, and solid bleached sulfate board.
Source: Compiled from official statistics of the U.S. Department of Commerce.

consumption.[87] In 1995, nearly one-half of all industrial paper imports (i.e., $869 million) fell within the sundry industrial paper subsection.

Imports of sanitary paper products registered $417 million in 1995.[88] Collectively, Canada and Mexico supplied 90 percent of all sanitary paper product imports in 1995.[89] Tissues are low in value, when compared to their bulk. Consequently, transportation costs become relatively more significant for tissues, thereby limiting shipping distances. Table 8 depicts the major sources for sundry industrial paper imports. As is true with total imports, Canada was the major supplier. In 1995, Canada provided 54 percent (by value) and 65 percent (by quantity) of sundry industrial paper imports.

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[87] Estimated by the staff of the USITC based on official statistics of the U.S. Department of Commerce, trade association data, various industry publications, and conversations with industry officials, May-July 1996.
[88] Derived from official statistics of the U.S. Department of Commerce.
[89] Ibid.

Table 8
Sundry industrial papers: U.S. imports for consumption, by principal sources, 1991-95

Source	1991	1992	1993	1994	1995
	Quantity (1,000 kilograms)				
Canada	519	627	546	604	659
Mexico	32	83	77	111	152
Japan	8	8	13	14	19
Germany	12	10	12	35	28
France	14	20	25	21	25
Finland	12	15	18	26	31
United Kingdom	3	5	4	10	7
Netherlands	15	18	20	22	29
Sweden	11	12	11	12	10
Venezuela	4	7	7	31	26
All other	17	23	25	26	32
Total	649	828	759	913	1,016
	Value (Million dollars)				
Canada	267	323	285	330	471
Mexico	12	28	27	45	83
Japan	46	42	51	58	69
Germany	27	26	29	50	54
France	28	33	42	35	38
Finland	14	16	19	24	31
United Kingdom	19	24	22	29	25
Netherlands	9	13	14	17	21
Sweden	21	22	18	19	17
Venezuela	3	3	3	12	14
All other	27	34	37	35	44
Total	473	564	548	655	869
	Unit value (Dollars per kilogram)				
Canada	0.51	0.51	0.52	0.55	0.71
Mexico	0.38	0.34	0.35	0.41	0.54
Japan	6.15	5.63	3.80	4.22	3.67
Germany	2.16	2.62	2.38	1.42	1.93
France	1.93	1.67	1.64	1.67	1.57
Finland	1.11	1.05	1.05	0.91	1.02
United Kingdom	5.52	4.55	5.88	2.83	3.49
Netherlands	0.57	0.70	0.68	0.76	0.75
Sweden	1.91	1.82	1.68	1.62	1.77
Venezuela	0.60	0.42	0.42	0.40	0.54
All other	1.59	1.46	1.46	1.34	1.39
Average	0.73	0.68	0.72	0.72	0.85

Note.—Because of rounding, figures may not add to totals shown.
Source: Compiled from official statistics of the U.S. Department of Commerce.

Major import categories (by 8-digit *HTS* subheadings) included coated multi-ply paper, uncoated semichemical fluting medium, bleached kraft linerboard, tissue stock,[90] and certain converted tissue products. U.S. imports of coated multi-ply paper weighing more than 150 grams per square meter were valued at $152 million in 1995.[91]

U.S. Trade Measures

In 1996, the general (most-favored-nation) U.S. tariff rates applicable to the products herein ranged from free to 4.5 percent ad valorem. All products are eligible for duty-free treatment under the Caribbean Basin Economic Recovery Act, the Andean Trade Preference Act, and the United States-Israel Free-Trade Area. The North American Free-Trade Agreement (NAFTA), implemented under the North American Free-Trade Agreement Implementation Act (Pub. Law 103-182, Dec. 8, 1993), provides for the elimination of U.S. duties on industrial paper imports from Canada in 1998 and from Mexico not later than 2003. The NAFTA became effective on January 1, 1994. In 1995, U.S. dutiable imports of the items in this summary from Canada and Mexico amounted to $3.5 million and $127,000, respectively.

The Uruguay Round of trade negotiations will result in further reductions in U.S. and foreign MFN duties on the articles covered by this summary. Tariffs on these products are scheduled to be reduced to free over a 10-year period starting in 1995.

During 1995, about 89 percent of all industrial papers entered the United States free of duty. The trade-weighted average rate of duty on the remaining imports was 2.8 percent ad valorem in 1995. Figure 6 depicts a 5-year trend line for the trade-weighted duty for dutiable U.S. imports, as well as presenting the value of dutiable U.S. imports. In 1995, total customs duties collected amounted to $6.0 million. Imports of industrial papers from Germany and Japan resulted in duty collections amounting to $1.8 million and $1.6 million, respectively.

Appendix B contains the 79 8-digit *HTS* subheadings included in this report, abridged article descriptions, and the value of U.S. exports and imports for industrial papers in 1995. In some instances, statistical reporting numbers in the *HTS* do not exactly correlate to U.S. Schedule B (export) subheadings, as explained in the footnotes at the end of appendix B. The largest categories of dutiable imports were reported under three separate and unrelated residual groupings (*HTS* subheadings 4811.90.80, 4804.39.60, and 4811.31.40).

Appendix A attempts to bridge *HTS* import numbers, at the 4-, 6-, or 8-digit level or parts of such numbers, to definable domestic and foreign industry groupings. Appendix C contains an explanation of tariff and trade agreement terms. U.S. imports of industrial papers are not subject to quotas, embargoes, or other nontariff measures.

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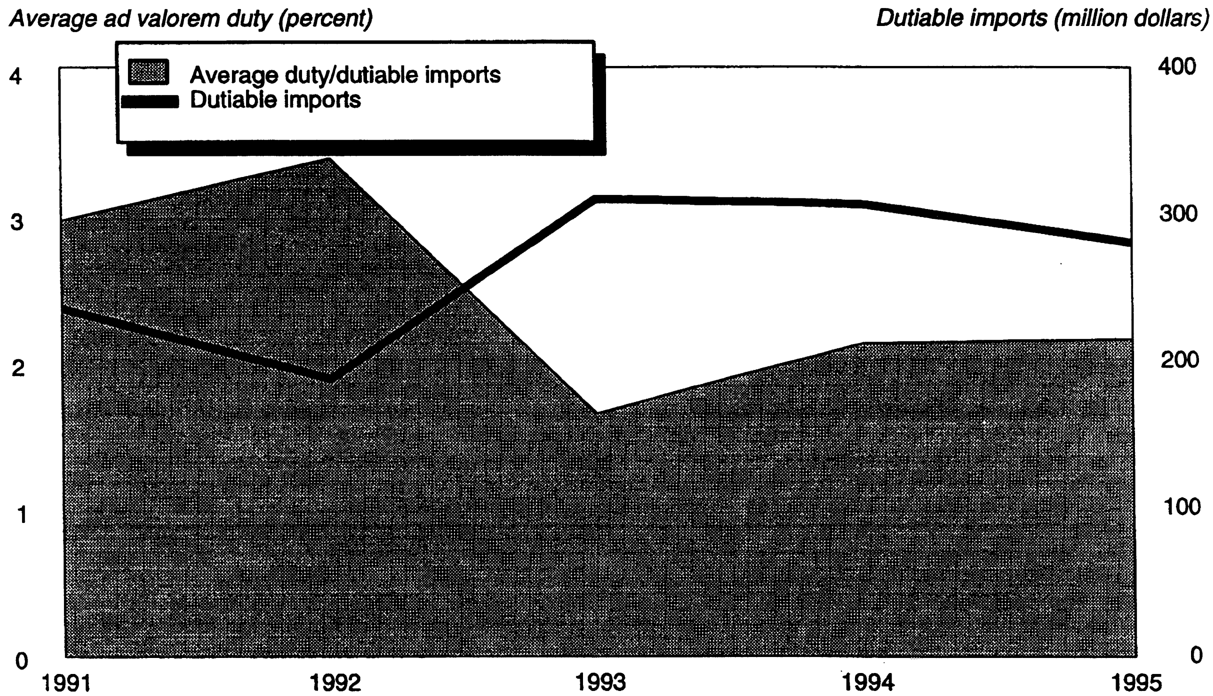
[90] The difference between tissue stock and tissue papers is the degree of conversion. Tissue stock is not cut-to-size. Tissue stock is on [parent] rolls exceeding 36 cm and is classified in *HTS* heading 4803. Tissue papers have been wound off of the parent rolls and cut into "end-user" sizes. Tissue papers are found under *HTS* heading 4818.

[91] Appendix B presents the value of individual imports on an 8-digit subheading basis.

Figure 6
Industrial papers: Average duty rate on dutiable imports, and dutiable U.S. imports, 1991-95



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

U.S. Exports

Principal Markets and Export Levels

Industrial paper exports increased, on a value basis, by 53 percent, from $3.3 billion in 1991 to $5.1 billion in 1995 (table 9). Figure 7 arranges total industrial paper exports into five groupings. As seen in this figure, kraft linerboard, solid bleached sulfate board, and sanitary paper products account for a sizeable part of all industrial paper exports. Kraft linerboard, the largest category of exports, accounted for 32 percent of all U.S. industrial paper exports in 1995. U.S. exports of solid bleached sulfate board and sanitary paper products are also very competitive in global markets.[92]

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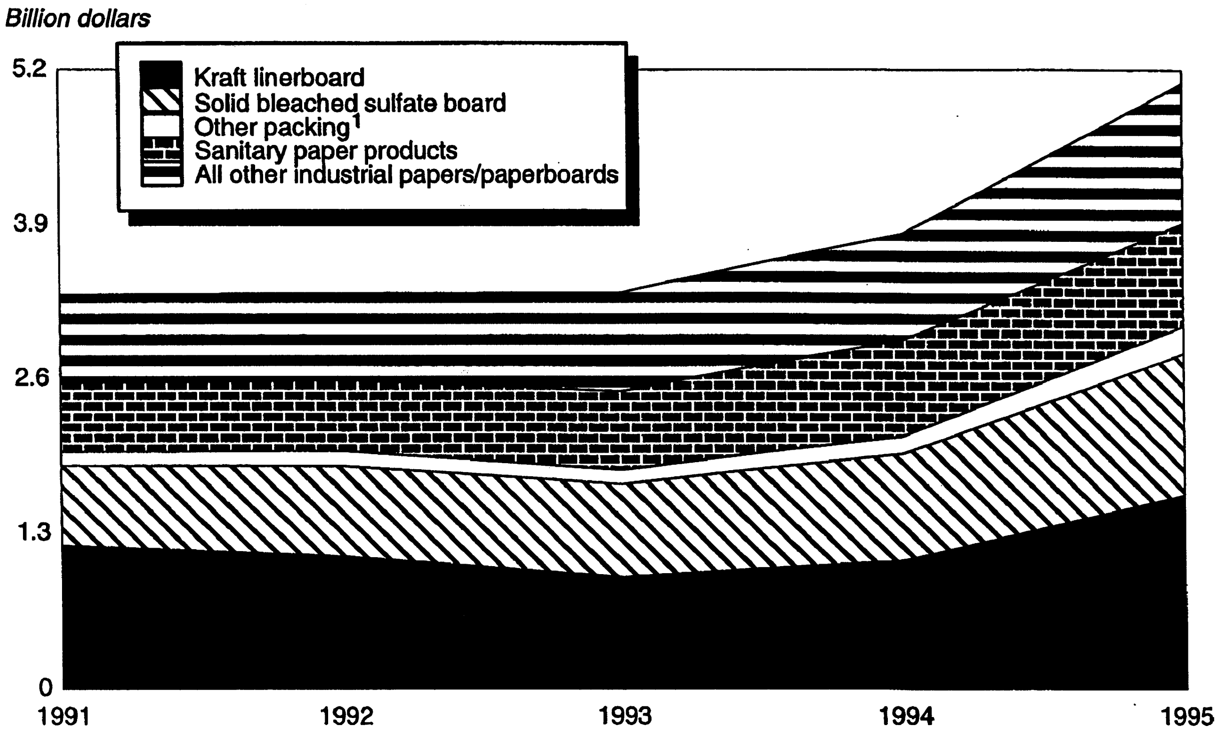
[92] Based on information in various trade publications and conversations with industry and government officials, May-July 1996.

Table 9
Industrial papers: U.S. exports of domestic merchandise, by principal markets, 1991-95

Market	1991	1992	1993	1994	1995
	Quantity (1,000 metric tons)				
Canada	594	679	781	874	1,029
Japan	353	352	362	396	428
Mexico	286	311	366	412	402
Hong Kong	299	368	384	431	408
United Kingdom	288	278	270	267	285
Netherlands	163	129	134	157	218
Germany	255	260	211	212	234
Ecuador	229	183	168	195	254
Italy	209	212	175	196	221
Korea, South	99	103	119	132	159
All other	2,409	2,298	2,268	2,489	2,818
Total	5,184	5,171	5,238	5,761	6,457
	Value (Million dollars)				
Canada	588	636	726	834	1,060
Japan	285	288	313	372	459
Mexico	283	327	325	371	338
Hong Kong	134	166	168	206	251
United Kingdom	158	165	163	162	210
Netherlands	114	99	98	111	177
Germany	198	145	124	121	176
Ecuador	93	70	62	74	144
Italy	91	98	70	81	137
Korea, South	98	83	70	106	131
All other	1,270	1,250	1,212	1,387	2,003
Total	3,314	3,328	3,331	3,827	5,085
	Unit value (Dollars per kilogram)				
Canada	0.99	0.94	0.93	0.95	1.03
Japan	0.81	0.82	0.87	0.94	1.07
Mexico	0.99	1.05	0.89	0.90	0.84
Hong Kong	0.45	0.45	0.44	0.48	0.62
United Kingdom	0.55	0.59	0.60	0.61	0.74
Netherlands	0.70	0.77	0.73	0.71	0.81
Germany	0.78	0.56	0.59	0.57	0.75
Ecuador	0.41	0.38	0.37	0.38	0.57
Italy	0.44	0.46	0.40	0.41	0.62
Korea, South	0.99	0.81	0.59	0.80	0.82
All other	0.53	0.54	0.53	0.56	0.71
Average	0.64	0.64	0.64	0.66	0.79

Note.—Because of rounding, figures may not add to totals shown.
Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure 7
Industrial papers: U.S. exports, by group, 1991-95



[1] Includes semichemical corrugating medium and kraft packing papers.
Source: Compiled from official statistics of the U.S. Department of Commerce.

On a value basis, about 11 percent of domestic production associated with this report is exported.[93] Within various product groupings, the exports to production ratios are estimated to have ranged from 25 percent for solid bleached sulfate board to near zero for some specialty converted products.[94] In 1995, this ratio for kraft linerboard and sanitary paper products was about 16 percent and 5 percent, respectively.[95]

Kraft linerboard exports are an important component of the entire U.S. paper industry.[96] The value of U.S. exports of kraft linerboard fluctuated between $932 million and $1.6 billion during 1991-95 (table 10). U.S. kraft linerboard exports reach many world markets; in 1995, the largest export market was Hong Kong, accounting for about 8 percent of exports. The size of individual country markets for U.S. kraft linerboard exports varied notably during 1991-95. In 1995, Ecuador was the second-leading market, but barely the fifth-leading market the prior year. Likewise, China was the second-leading market in 1994, but only the eleventh-largest

[93] Derived from official statistics of the U.S. Department of Commerce.
[94] Ibid.
[95] Ibid.
[96] Based on information in various trade publications and conversations with industry and government officials, May-July 1996.

Table 10
Kraft linerboard: U.S. exports of domestic merchandise, by principal markets, 1991-95

Market	1991	1992	1993	1994	1995
	Quantity (1,000 metric tons)				
Hong Kong	264	309	323	333	290
Ecuador	203	170	158	173	241
United Kingdom	224	202	189	177	189
Canada	87	125	157	131	189
Costa Rica	131	161	166	157	158
Italy	170	163	130	151	158
Germany	183	200	134	131	145
Spain	82	91	87	123	139
Israel	82	83	74	101	116
Philippines	92	88	95	128	107
All other	1,576	1,332	1,203	1,308	1,439
Total	3,095	2,925	2,717	2,913	3,170
	Value (Million dollars)				
Hong Kong	103	116	111	122	133
Ecuador	77	61	55	62	130
United Kingdom	94	81	66	63	105
Canada	47	58	64	55	96
Costa Rica	45	58	59	63	91
Italy	62	59	36	48	82
Germany	71	72	42	44	81
Spain	32	36	28	44	69
Israel	27	30	23	35	62
Philippines	35	31	31	45	57
All other	609	505	415	493	724
Total	1,201	1,107	932	1,074	1,631
	Unit value (Dollars per kilogram)				
Hong Kong	0.39	0.38	0.34	0.37	0.46
Ecuador	0.38	0.36	0.35	0.36	0.54
United Kingdom	0.42	0.40	0.35	0.36	0.56
Canada	0.54	0.46	0.41	0.42	0.51
Costa Rica	0.34	0.36	0.36	0.40	0.57
Italy	0.36	0.36	0.28	0.32	0.52
Germany	0.39	0.36	0.32	0.34	0.56
Spain	0.39	0.40	0.33	0.36	0.50
Israel	0.33	0.37	0.31	0.34	0.54
Philippines	0.38	0.35	0.33	0.35	0.54
All other	0.39	0.38	0.35	0.38	0.50
Average	0.39	0.38	0.34	0.37	0.51

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

market in 1995. In 1995, the United Kingdom, the third-largest export market, received $105 million in U.S. kraft linerboard exports—an increase of $42 million over the prior year. In addition to Hong Kong, Ecuador, and the United Kingdom, another 22 markets each received over $25 million of U.S. kraft linerboard exports in 1995.

Exports of solid bleached sulfate board and sanitary paper products followed kraft linerboard, accounting for 23 percent and 17 percent, respectively, of all industrial paper exports in 1995. The value of U.S. exports of both solid bleached sulfate board and sanitary paper products steadily increased each year between 1991 and 1995. U.S. exports of solid bleached sulfate board increased from $670 million in 1991 to $1.2 billion in 1995 (table 11). This increase was primarily accounted for by an increase in exports of heavy-gauged clay-coated folding carton stock (up by $218 million) and heavy-gauged plastic-coated milk carton stock (up by $164 million).

U.S. exports of sanitary paper products increased from $579 million in 1991 to $867 million in 1995. Many different products contributed to this increase. Canada, Mexico, and Japan accounted for 44 percent, 13 percent, and 6 percent, respectively, of U.S. exports of sanitary paper products in 1995.

Foreign Trade Measures

Foreign tariffs applicable to U.S. exports entering some of the major foreign markets are depicted in table 12. Nontariff trade restrictions on the commodity-grade industrial papers are believed to be minimal. Under the NAFTA, Mexico is obligated to phase out its duties on the items covered in this summary over a 10-year period. The Uruguay Round Agreements will further reduce duties on U.S. exports to all countries shown in table 12 except for those to China, which is not yet a member of the World Trade Organization.

Foreign Market Profile

Industrialized countries are the major markets for the papers discussed in this summary. In 1995, nearly 80 percent of global paper consumption was concentrated in North America, Western Europe, Japan, and China.[97,98] A number of countries, including Canada, Sweden, and Finland have significant lumber and paper resources and are export oriented. Consequently, opportunities to significantly increase U.S. exports to these markets are limited despite their relatively high per capita demand for paper. Germany, the United Kingdom, France, and Italy, the largest industrial paper importing countries in Europe, also have a high per capita demand for paper. However, the overwhelming portion of imports into these markets has historically

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[97] Derived from data in *Pulp and Paper International*, annual review, July 1996.

[98] In 1995, China was estimated to be the world's third-largest paper consumer and producer, importing about 11 percent of its domestic consumption and exporting about 2 percent of its production.

Table 11
Solid bleached sulfate board: U.S. exports of domestic merchandise, by principal markets, 1991-95

Market	1991	1992	1993	1994	1995
			Quantity (1,000 metric tons)		
Japan	199	207	233	262	287
Canada	106	132	159	182	198
Mexico	14	42	46	102	129
Korea, South	51	51	37	59	60
Australia	62	58	65	54	64
Netherlands	49	53	49	44	54
Republic of South Africa	46	39	47	43	48
Germany	15	27	38	48	49
Hong Kong	13	24	25	41	52
China	4	([1])	3	16	44
All other	170	219	205	243	298
Total	730	854	906	1,094	1,284
			Value (Million dollars)		
Japan	192	193	213	245	318
Canada	96	116	134	147	171
Mexico	9	32	29	48	71
Korea, South	51	51	36	59	64
Australia	58	53	61	49	61
Netherlands	43	48	41	35	52
Republic of South Africa	48	41	47	43	51
Germany	14	27	36	41	47
Hong Kong	9	19	21	29	45
China	2	([2])	2	13	42
All other	148	180	164	189	268
Total	670	760	783	898	1,191
			Unit value (Dollars per kilogram)		
Japan	0.96	0.93	0.91	0.94	1.11
Canada	0.91	0.88	0.84	0.80	0.86
Mexico	0.61	0.75	0.63	0.47	0.55
Korea, South	0.99	0.99	0.97	0.99	1.06
Australia	0.94	0.91	0.93	0.91	0.96
Netherlands	0.89	0.90	0.83	0.79	0.95
Republic of South Africa	1.05	1.05	1.00	1.01	1.06
Germany	0.96	1.01	0.96	0.85	0.96
Hong Kong	0.66	0.78	0.84	0.71	0.88
China	0.37	1.04	0.77	0.81	0.95
All other	0.87	0.82	0.80	0.78	0.90
Average	0.92	0.89	0.86	0.82	0.93

[1] Less than 500 metric tons.
[2] Less than $500,000.
Note.—Because of rounding, figures may not add to totals shown.
Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 12
Industrial papers: Selected examples of 1996 foreign tariff rates in representative U.S. export markets

Export market:	Duty ranges[1] [2]
Applicable U.S. exports[3]	
All paper and paperboard exports:	
Canada	Free[4]
Hong Kong	Free
Unbleached kraft linerboard exports:	
EU-15	4.5% ad valorem + VAT[5]
Ecuador	15% ad valorem +10% VAT +1% customs fee
Costa Rica	1% ad valorem +15% VAT +1% surcharge
Israel	Free +17% VAT +1% port fee
Philippines	20% ad valorem +10% VAT
China	15% ad valorem +17% VAT
Saudi Arabia	12% ad valorem
Chile	11% ad valorem +18% VAT
South Korea	8% ad valorem +10% VAT
Taiwan	5% ad valorem +5% VAT +0.05% port fee
Japan	2.8% ad valorem[6]
Panama	10% ad valorem[7] +5% sales tax
Malaysia	5% ad valorem +10% sales tax
Colombia	15% ad valorem +16% VAT
Guatemala	5% ad valorem +10% VAT
Dominican Republic	15% ad valorem +8% sales tax
Honduras	5% ad valorem +7% VAT +1.5% customs fee
Mexico	10%[8] ad valorem
Singapore	Free + 3% sales tax
All other papers and paperboard exports:[3]	
Mexico:[9]	
Other hospital/household articles	7% ad valorem
Plastic-coated, solid bleached sulfate	10%,[8] 4% ad valorem, or free
Heavy-weight, clay-coated solid bleached sulfate	4% ad valorem
Diapers, sanitary napkins, tampons, etc	7% ad valorem
Heavy-weight, bleached kraft packaging paper	Free
Tissue stock	10%,[8] 7%, 4% ad valorem, or free
Towels and facial tissues	7% ad valorem
Apparel articles made of paper	Free
Toilet paper	7% ad valorem
EU-15:	
Clay-coated solid bleached sulfate	7.2% ad valorem + VAT[5]
Clay-coated unbleached sulfate	3.6% ad valorem + VAT
Diapers, sanitary napkins, tampons, etc	6.4% ad valorem + VAT
Heavy-weight, bleached kraft packaging paper	5.7% ad valorem + VAT
Apparel articles made of paper	8.0% ad valorem + VAT
Plastic-coated, solid bleached sulfate	6.7% ad valorem + VAT

Table 12—Continued
Industrial papers: Selected examples of 1996 foreign tariff rates in representative U.S. export markets

Export market: Applicable U.S. exports[3]	Duty ranges[1 2]
All other papers and paperboard exports--Continued:[3]	
Australia:	
Mid-weight bleached kraft packaging paper	5% ad valorem +21% sales tax
Heavy-weight, clay-coated solid bleached sulfate	5% ad valorem +21% sales tax
Clay-coated, unbleached sulfate board	5% ad valorem +21% sales tax
Japan:	
Plastic-coated, solid bleached sulfate	Free
Heavy-weight, clay-coated, solid bleached sulfate	Free
Apparel articles made of paper	2.9% ad valorem
Clay-coated, unbleached sulfate board	Free
Mid-weight bleached kraft packaging paper	2.8% ad valorem
Other hospital/household articles	2.6% ad valorem
Tissue stock	3.4% ad valorem
Diapers, sanitary napkins, tampons, etc	Free to 2.9% ad valorem
Taiwan:	
Plastic-coated, solid bleached sulfate	8.5% ad valorem + 5% VAT +0.05% port fee
Light-weight, unbleached kraft packaging paper	5% ad valorem + 5% VAT +0.05% port fee
China:	
Heavy-weight, clay-coated solid bleached sulfate	20% ad valorem + 17% VAT
Mid-weight bleached kraft packaging paper	15% ad valorem
South Korea:	
Plastic-coated, solid bleached sulfate	8% ad valorem + 10% VAT
Heavy-weight, clay-coated solid bleached sulfate	8% ad valorem + 10% VAT
South Africa:	
Plastic-coated, solid bleached sulfate	10% ad valorem + 14% VAT
Heavy-weight, clay-coated solid bleached sulfate	10% ad valorem + 14% VAT

[1] The primary assessment is the ad valorem customs duty. An attempt was also made to capture other charges applicable to U.S. exports (e.g., VAT taxes and other surcharges). However, there may be other restrictions on U.S. exports not depicted here.

[2] The duty and other taxes (footnote 1) would not be applicable if the product entered a foreign free-trade zone, and was subsequently re-exported from that country.

[3] There was an attempt to capture a matrix of products and countries at export levels exceeding $20 million during 1995 using the 6-digit tariff break, excepting a few 6-digit tariff breaks that are considered "basket groupings." The description is derived from a six-digit tariff break or a higher level tariff break.

[4] Canadian tariff rates for U.S. exports under the NAFTA are free for paper products. However, Canada's MFN rate on paper extended to other countries ranges from free to 14 percent.

[5] VAT is a value added tax. The VATs for the EU-15 members range from 15 to 25 percent. Generally, value-added taxes imposed on imports are also imposed on similar internal domestic production.

[6] If kraft linerboard exports to Japan weigh more than 300 grams per square meter, the duty rate is reduced to 2.0 percent ad valorem.

[7] In some instances, light-weight kraft linerboard exports to Panama may be assessed at a lower duty rate.

[8] This 10 percent Mexican tariff will be reduced over 3 years—to 8 percent in 1997, to 7 percent in 1998, and to free in 1999.

[9] Under the NAFTA, Mexican duties on these products will be staged to free by 2003 or sooner.

Source: Data are compiled from information provided by various country desk officers at the U.S. Department of Commerce.

been supplied by other West European countries—especially the Nordic countries.[99] Germany imports about 45 percent of its consumption. Sweden, Finland, France, Austria, the Netherlands, and Italy are Germany's major traditional suppliers. Likewise, France imports about 48 percent of its consumption—traditionally from Germany, Finland, Sweden, the Netherlands, Italy, and the United Kingdom.[100]

In Asia, the largest importers of industrial papers are Hong Kong, China, Taiwan, Singapore, and South Korea.[101] The United States is a significant source for paper imports into many of these countries. Japan, with a forest area of about 3 percent as large as all of North America's forest area, imports only about 4 percent of its domestic paper consumption. Japan is heavily reliant on recycled papers.

Latin American countries have relatively low per capita consumption of paper, averaging 31 kilograms per capita in 1995.[102] Should growth in per capita consumption of paper occur in many Latin American countries, this growth would likely be supplied by imports from Brazil, the United States, and Canada.

FOREIGN INDUSTRY PROFILE

Although industrial papers are manufactured throughout the world, production is especially concentrated in countries that enjoy a plentiful and economical raw material resource, such as wood pulp and/or waste paper. Generally these countries have a well-developed pulp and paper industry and produce many other types of papers in addition to industrial papers. Data for major foreign pulp and paper producing countries relating to forested area, per capita consumption, mill numbers, and employment are shown in appendix D. In 1995, major foreign producers of industrial papers were Japan, China, Germany, Sweden, Canada, and France (table 13). Foreign production of industrial papers generally can be subdivided into packaging papers, tissues, and other papers. Major producers of packaging papers, tissues, and other papers are shown in tables 14-16.

[99] The Nordic countries are Sweden, Finland, and Norway.
[100] Derived from United Nations trade data and data in *Pulp and Paper International,* July 1996.
[101] Derived from data in *Pulp and Paper International,* annual review, July 1996.
[102] Examine Appendix D for global per capita consumption comparisons.

Table 13
Industrial papers:[1] Major global producers, 1995

Country[2]	Production[3]	Industrial paper production as a percent of total paper production
	1,000 tons	*Percent*
United States	51,824	64
Japan	16,000	54
China[4]	12,300	51
Germany	7,373	50
Sweden	4,777	52
Canada	4,605	25
France	4,539	53
South Korea	4,320	63
Italy	4,024	59
Brazil	3,783	65
United Kingdom	3,459	57
Taiwan	3,457	81
Finland	3,203	29
Spain	2,678	73
Mexico	2,273	75
Indonesia	2,160	63
Russia	2,116	52
Netherlands	1,787	60
Australia	1,485	65
India	1,476	49
Thailand	1,466	75
Austria	1,455	40
South Africa	1,212	60

[1] This international grouping includes corrugating materials, other wrapping papers, tissues, other papers, and paperboards. Newsprint and printing/writing papers are not included.
[2] Countries selected were those that had an industrial paper production of over 1.2 million tons in 1995.
[3] Data on total world production are not available.
[4] Chinese production data are estimated by USITC staff from information obtained from the United Nations, *Pulp and Paper International*, and an International Pulp and Paper Symposium in Seattle, Washington, September 1994.
Source: Derived from data in annual review issue, *Pulp and Paper International,* July 1996, except where noted.

Table 14
Packaging papers:[1] Production, trade, and operating rates, by major international producer, 1995

Country[2]	Production	Imports	Exports	Operating rates
		1,000 tons		*Percent*
United States	30,876	2, 798	2,827	93
Japan	10,108	157	179	94
Germany	5,480	2,717	1,900	92
China	3,950	1,443	148	([3])
Canada	3,039	459	1,456	93
France	3,029	943	808	([3])
Sweden	2,986	82	2,497	98
Italy	2,900	1,778	803	([3])
Brazil	2,445	46	307	88
South Korea	2,411	175	133	87
Taiwan	2,078	233	300	93
United Kingdom	1,821	1,198	161	96
Spain	1,632	586	215	89
Russia	1,567	0	84	45
Mexico	1,509	164	200	([3])
Indonesia	1,319	38	85	74
Australia	1,312	253	208	([3])
Finland	[4] 1,189	51	590	94
Thailand	1,167	20	123	81

[1] This grouping is not always uniform. In some cases, this grouping is comprised of subgroupings labeled corrugating materials and other wrapping papers. In other cases, this grouping is solely labeled packaging papers.

[2] Countries selected were those that had a packaging paper production of over 1 million tons in 1995.

[3] Not available.

[4] 1993 production data.

Source: Derived from data in annual review issue, *Pulp and Paper International,* July 1996.

Table 15
Tissue papers: Production, trade, and operating rates, by major international producer, 1995

Country[1]	Production	Imports	Exports	Operating rates
	1,000 tons			*Percent*
United States	5,634	100	95	93
Japan	1,560	0	0	94
China	1,350	17	46	(2)
Germany	877	111	107	92
Canada	617	95	107	89
United Kingdom	567	243	33	96
Italy	554	24	301	(2)
Brazil	496	23	39	82
France	487	173	124	(2)
Mexico	477	23	52	(2)
South Korea	318	0	3	86
Sweden	293	21	153	94
Spain	239	79	30	82
Taiwan	224	36	22	98
Australia	173	27	11	(2)
Finland	[3]169	2	60	94
Venezuela	164	0	40	(2)
Netherlands	161	26	13	(2)

[1] Countries selected were those that had a tissue production of over 150,000 tons in 1995.
[2] Not available.
[3] 1993 production.

Source: Derived from data in annual review issue, *Pulp and Paper International,* July 1996.

Table 16
Other papers:[1] Production, trade, and operating rates, by major international producer, 1995

Country[2]	Production	Imports	Exports	Operating rates
	1,000 tons			*Percent*
United States	15,314	974	1,887	([3])
China[4]	7,000	700	30	([3])
Japan	4,332	106	227	94
Finland	[5]1,845	99	1,857	94
South Korea	1,591	221	475	95
Sweden	1,498	177	1,461	93
Taiwan	1,155	429	332	95
United Kingdom	1,071	752	350	96
France	1,023	807	456	([3])
Germany	1,016	126	127	92
Canada	949	388	337	89
Netherlands	911	414	593	([3])
Brazil	842	168	146	80
Spain	807	331	253	91
Indonesia	785	126	245	74
India	702	35	50	77
Italy	570	98	161	([3])
Russia	467	34	([3])	45
Austria	425	129	324	86

[1] This grouping includes mostly industrial papers; however, certain other products that are not part of the industrial papers grouping might be included herein.
[2] Countries selected were those that had an "other papers" production of over 400,000 tons in 1995.
[3] Not available.
[4] Chinese data are estimated by USITC staff from information obtained from the United Nations, *Pulp and Paper International*, and a International Pulp and Paper Symposium in Seattle, Washington, September 1994.
[5] Finland's comparative production of "other papers" is estimated by USITC staff.
Source: Derived from data in annual review issue, *Pulp and Paper International,* July 1996, except where noted.

Japan

Japanese industrial paper output is second only to the United States (table 13). The size of Japanese industrial paper production, as well as total paper production, is about one-third that of the United States. More than one-half of Japanese papermaking fiber tonnage comes from waste paper[103, 104] and about one-eighth of Japanese papermaking fibers come from imported wood pulp.[105] About 3 percent of Japan's total paper production, and less than 3 percent of Japan's industrial paper production, is exported.[106] However, Japan is a significant source of paper for China, Taiwan, and South Korea.[107] Japan also has sizeable investments in corrugated box plants and tree plantations in China.[108]

China

China is the world's third-largest industrial paper producer (table 13) as well as the world's third-largest total paper producer. There are about 6,000 paper mills in China; however, the majority are small in terms of production and employment. China has only about 300 paper mills that employ over 500 persons each and only 43 mills that produce over 30,000 tons per year.[109] Unlike the rest of the world, few Chinese mills engage in international transactions; total Chinese paper exports represent about 2 percent of production.[110] The Chinese industry is expected to grow by 7 percent annually during the latter part of the 1990s.[111] Most of the forested land in China is state owned, and about 60 percent of Chinese papermaking fiber comes from nonwood sources, such as straw, kenaf, and bagasse.[112]

Germany

Germany is the world's fourth-largest industrial paper producer and has the world's fifth-largest paper industry (table 13). About 30 percent of Germany's industrial paper production and about 40 percent of Germany's total paper production is exported.[113] Germany's primary export markets for all papers are France, the United Kingdom, the Netherlands, and Italy.[114] Imported

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[103] Derived from data in annual review issue, *Pulp and Paper International,* July 1996.

[104] Furthermore, Japan only imports about 3 percent of the waste paper that is consumed in papermaking operations. However, much of Japan's imported waste paper comes from the United States.

[105] Derived from data in annual review issue, *Pulp and Paper International,* July 1996.

[106] Ibid.

[107] Derived from United Nations trade data.

[108] *Pulp and Paper International,* July 1995.

[109] Notes from International Pulp and Paper Symposium in Seattle, Washington, Sept. 1994.

[110] Derived from data in *Pulp and Paper International,* July 1996.

[111] Notes from International Pulp and Paper Symposium in Seattle, Washington, Sept. 1994.

[112] Ibid.

[113] Derived from data in *Pulp and Paper International,* July 1996.

[114] Derived from United Nations trade data.

virgin pulp accounts for about one-quarter of Germany's papermaking fibers, while recovered domestic waste paper accounts for over one-half of its papermaking fibers.

Sweden

Sweden is the fifth-largest industrial paper producer and the world's seventh-largest paper industry (table 13). Sweden's industry is export-oriented, with about 86 percent of Sweden's industrial papers being exported.[115] The majority of Sweden's papermaking fibers come from virgin pulp—only about 7 percent of these fibers come from imported waste paper. Sweden is also the largest wood pulp producer in Europe. Sweden's primary export markets for all paper are Germany, the United Kingdom, France, the Netherlands, and Italy.[116]

Canada

Canada is the world's sixth-largest industrial paper producer and the world's fourth-largest paper industry (table 13). A great portion of the Canadian pulp and paper industry is devoted to newsprint and printing/writing papers. The entire Canadian industry is export oriented; about three-quarters of all Canadian papers are exported, and about 40 percent of Canada's industrial papers are exported.[117] Canada's largest export market for all paper is the United States. Similar to Sweden, more than four-fifths of all of Canadian papermaking fibers come from virgin wood pulp while only about one-tenth of Canadian papermaking fibers come from imported waste paper. The majority of Canadian waste paper imports come from the United States.

France

France is the world's seventh-largest industrial paper producer and has the world's eighth-largest paper industry (table 13). About 31 percent of France's industrial papers and about 42 percent of France's total papers are exported.[118] France's primary export markets are Germany, the United Kingdom, Italy, Spain, and the Netherlands.[119] Imported wood pulp accounts for slightly more than one-fifth of French papermaking fibers, while recovered domestic waste paper accounts for slightly over 40 percent of French papermaking fibers.[120]

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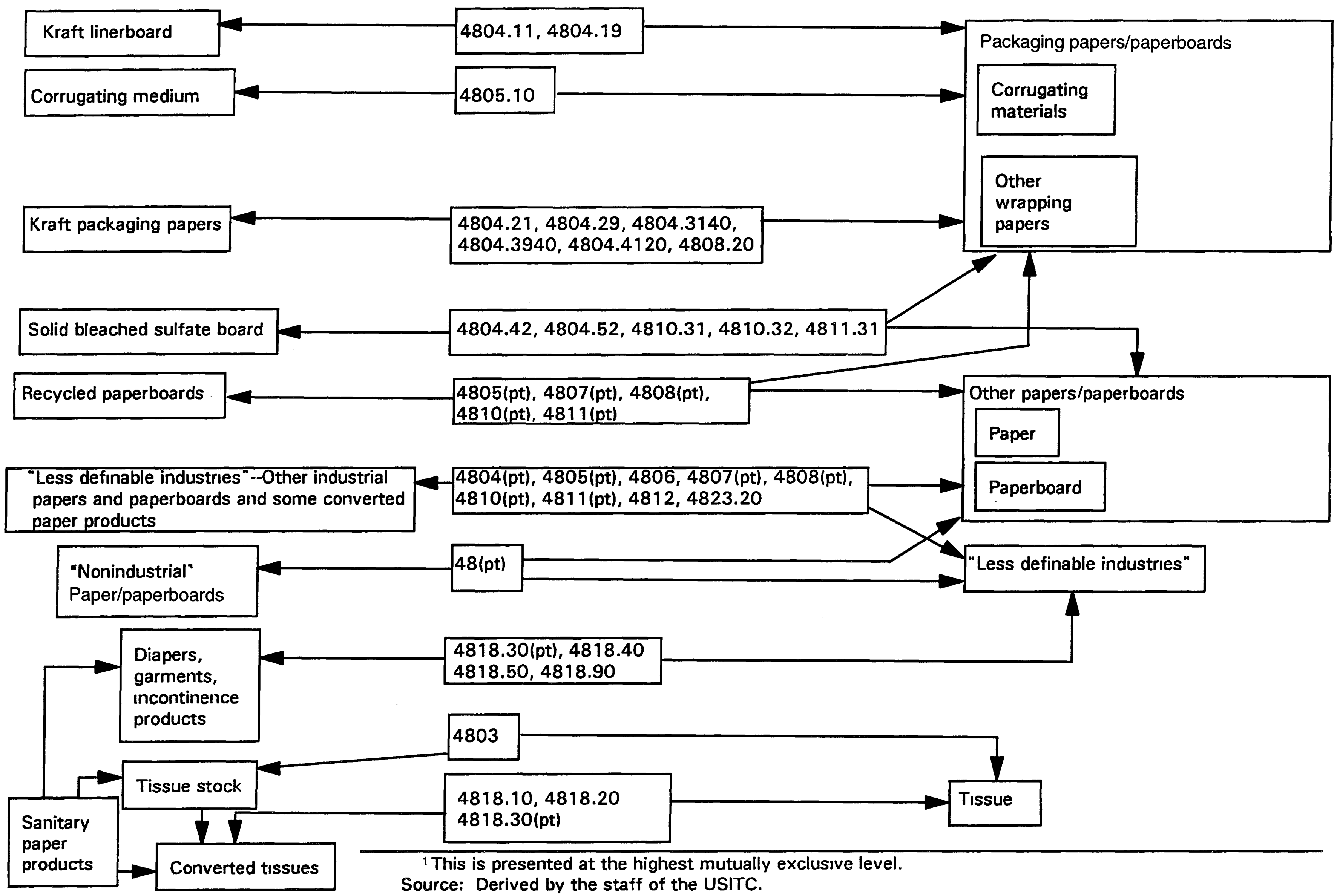
[115] Derived from data in *Pulp and Paper International,* July 1996.
[116] Derived from United Nations trade data.
[117] Derived from data in *Pulp and Paper International,* July 1996.
[118] Ibid.
[119] Derived from United Nations trade data.
[120] Derived from data in *Pulp and Paper International,* July 1996.

APPENDIX A
INDUSTRIAL PAPERS: *HTS* HEADINGS AND SUBHEADINGS INDEXED TO DEFINABLE DOMESTIC AND DEFINABLE FOREIGN INDUSTRIES

Appendix A

Industrial papers: *HTS* headings and subheadings indexed to definable domestic and definable foreign industries

Definable domestic industry	Applicable *HTS* heading or subheading[1]	Definable foreign industry



[1] This is presented at the highest mutually exclusive level.

Source: Derived by the staff of the USITC.

APPENDIX B
INDUSTRIAL PAPERS: *HARMONIZED TARIFF SCHEDULE* SUBHEADING; DESCRIPTION; U.S. COLUMN 1 RATE OF DUTY AS OF JAN. 1, 1996; U.S. EXPORTS, 1995; AND U.S. IMPORTS, 1995

Appendix B

Industrial papers: *Harmonized Tariff Schedule* subheading; description;[1] U.S. column 1 rate of duty as of Jan. 1, 1996; U.S. exports, 1995; and U.S. imports, 1995

Subheading	Abridged description	Col. 1 rate of duty as of Jan. 1, 1996 General	Col. 1 rate of duty as of Jan. 1, 1996 Special[2]	U.S. exports 1995	U.S. imports 1995
				—Million dollars—	
	Tissue stock, in rolls or sheets exceeding 36 cm:				
4803.00.20	Cellulose wadding	2.8%	Free (A,CA,E,IL,J,MX)	[3]141	5
4803.00.40	Other	Free		([3])	99
	Uncoated kraft paper and paperboard, in rolls or sheets:				
4804.11.00	Kraftliner, unbleached	Free		1,603	73
4804.19.00	Kraftliner, other	Free		28	118
4804.21.00	Sack kraft paper, unbleached	Free		70	21
4804.29.00	Sack kraft paper, other	Free		14	3
	Other kraft paper and paperboard weighing 150 grams per square meter or less:				
	Unbleached:				
	Condenser paper:				
4804.31.10	Weighing over 15 grams per square meter but not over 30 grams per square meter	1.6%	Free (A,CA,E,IL,J,MX)	[4] 22	1
4804.31.20	Other	3.4%	Free (A,CA,E,IL,J,MX)	([4])	2
4804.31.40	Wrapping paper	Free		50	98
4804.31.60	Other	3.2%	Free (A,CA,E,IL,J,MX)	([4])	28
	Other:				
4804.39.20	Condenser paper	3.4%	Free (A,CA,E,IL,J,MX)	[5]1	([6])
4804.39.40	Wrapping paper	Free		25	23
4804.39.60	Other	3.2%	Free (A,CA,E,IL,J,MX)	[5]15	60
	Other kraft paper and paperboard weighing more than 150 grams per square meter but less than 225 grams per square meter:				
	Unbleached:				
4804.41.20	Wrapping paper	Free		3	([6])
4804.41.40	Other	3.2%	Free (A,CA,E,IL,J,MX)	56	1
4804.42.00	Bleached, the fiber content of which contains more than 95 percent wood fibers obtained by a chemical process	Free		64	2
4804.49.00	Other	3.2%	Free (A,CA,E,IL,J,MX)	20	1
	Other kraft paper and paperboard weighing 225 grams per square meter or more:				
4804.51.00	Unbleached	Free		28	1
4804.52.00	Bleached, the fiber content of which contains more than 95 percent wood fibers obtained by a chemical process	Free		91	19
4804.59.00	Other	3.2%	Free (A,CA,E,IL,J,MX)	18	1

Appendix B—*Continued*

Industrial papers: *Harmonized Tariff Schedule* subheading; description;[1] U.S. column 1 rate of duty as of Jan. 1, 1996; U.S. exports, 1995; and U.S. imports, 1995

Subheading	Abridged description	Col. 1 rate of duty as of Jan. 1, 1996 General	Special[2]	U.S. exports 1995	U.S. imports 1995
				— Million dollars —	
	Other uncoated paper and paperboard, in rolls or sheets:				
4805.10.00	Semichemical fluting paper (corrugating medium)	3.2%	Free (A,CA,E,IL,J,MX)	67	132
	Multi-ply paper and paperboard:				
4805.21.00	Each layer bleached	Free		6	(6)
4805.22.00	Only one outer layer bleached	Free		5	8
4805.23.00	Both outer layers bleached, 3 or more layers	Free		12	2
4805.29.00	Other	Free		42	46
4805.30.00	Sulfite wrapping paper	1.9%	Free (A,CA,E,IL,J,MX)	1	1
4805.40.00	Filter paper and paperboard	3.4%	Free (A,CA,E,IL,J,MX)	35	12
4805.50.00	Felt paper and paperboard	Free		8	37
	Other paper and paperboard weighing 150 grams per square meter or less:				
4805.60.20	Condenser paper	3.4%	Free (A,CA,E,IL,J,MX)	[7]73	1
4805.60.30	Bibulous paper	Free		(7)	(6)
4805.60.40	Wrapping paper	Free		18	6
	Other:				
4805.60.50	Weighing not over 15 grams per square meter	1.2%	Free (A,CA,E,IL,J,MX)	(7)	1
4805.60.70	Weighing between 15 and 30 grams per square meter	Free		(7)	5
4805.60.90	Weighing over 30 grams per square meter	3.2%	Free (A,CA,E,IL,J,MX)	[7]13	102
	Other paper and paperboard weighing more than 150 grams per square meter but less than 225 grams per square meter:				
4805.70.20	Pressboard	3.9%	Free (A,CA,E,IL,J,MX)	[8]9	(6)
4805.70.40	Other	Free		[8]6	35
	Other paper and paperboard weighing 225 grams per square meter or more:				
4805.80.20	Pressboard	3.9%	Free (A,CA,E,IL,J,MX)	[9]40	3
4805.80.40	Other	Free		[9]2	26
	Vegetable parchment, greaseproof, tracing, glassine and other glazed transparent or translucent papers, in rolls or sheets:				
4806.10.00	Vegetable parchment	Free		2	4
4806.20.00	Greaseproof papers	Free		1	31
4806.30.00	Tracing papers	Free		4	3

Appendix B—*Continued*

Industrial papers: *Harmonized Tariff Schedule* subheading; description;[1] U.S. column 1 rate of duty as of Jan. 1, 1996; U.S. exports, 1995; and U.S. imports, 1995

Subheading	Abridged description	Col. 1 rate of duty as of Jan. 1, 1996 — General	Col. 1 rate of duty as of Jan. 1, 1996 — Special[2]	U.S. exports 1995	U.S. imports 1995
				—Million dollars—	
4806.40.00	Glassine and other glazed transparent or translucent papers	Free		8	7
	Composite paper and paperboard, not surface coated nor impregnated, in rolls or sheets:				
4807.10.00	Internally laminated with bitumen, tar, asphalt	Free		1	4
	Other:				
4807.90.10[10]	Straw paper and paperboard	2.2%	Free (A,CA,E,IL,J,MX)	[11]([6])	([6])
	Other:				
4807.90.20[10]	Cloth-lined or reinforced paper	1.9%	Free (A,CA,E,IL,J,MX)	[12]52	1
4807.90.40[10]	Other	Free		([12])	8
	Corrugated, creped, crinkled, embossed, or perforated paper and paperboard, in rolls or sheets:				
4808.10.00	Corrugated paper and paperboard	3.2%	Free (A,CA,E,IL,J,MX)	43	14
4808.20.00	Creped or crinkled sack kraft paper	Free		2	([6])
4808.30.00	Creped or crinkled other kraft paper	Free		13	13
	Other:				
4808.90.20	Creped or crinkled	2.7%	Free (A,CA,E,IL,J,MX)	[13]33	1
4808.90.40	Embossed	1.6%	Free (A,CA,E,IL,J,MX)	([13])	3
4808.90.60	Other	4.2%	Free (A,CA,E,IL,J,MX)	([13])	1
	Paper and paperboard, coated with clay or other inorganic substance, in rolls or sheets:				
	Kraft paper, used for other than graphic purposes:				
4810.31.00	Bleached, the fiber content of which contains more than 95 percent wood fibers obtained by a chemical process, and weighing 150 grams per square meter or less	Free		24	17
4810.32.00	Bleached, the fiber content of which contains more than 95 percent wood fibers obtained by a chemical process, and weighing more than 150 grams per square meter	Free		499	4
	Other:				
4810.39.20	Whether or not impregnated, but not otherwise treated	Free		[14]292	25

Appendix B—*Continued*

Industrial papers: *Harmonized Tariff Schedule* subheading; description;[1] U.S. column 1 rate of duty as of Jan. 1, 1996; U.S. exports, 1995; and U.S. imports, 1995

Subheading	Abridged description	Col. 1 rate of duty as of Jan. 1, 1996 General	Special[2]	U.S. exports 1995	U.S. imports 1995
				— *Million dollars* —	
4810.39.40	Other	1.5%	Free (A,CA,E,IL,J,MX)	([14])	2
	Other paper and paperboard:				
	Multiply:				
4810.91.20	Weighing more than 150 grams per square meter	Free		[15]29	152
4810.91.40	Other	1.5%	Free (A,CA,E,IL,J,MX)	([15])	25
4810.99.00	Other	1.5%	Free (A,CA,E,IL,J,MX)	28	39
	Paper, paperboard, cellulose wadding, webs of cellulose fibers, coated, impregnated, covered, surfaced-colored surface-decorated or printed, in rolls and sheets, other than goods of headings 4803, 4809, or 4810:				
4811.10.00	Tarred, bituminized, or asphalted paper and paperboard	Free		6	21
	Paper and paperboard, coated, impregnated or covered with plastics:				
	Bleached, weighing more than 150 grams per square meter:				
4811.31.20	0.3 mm or more in thickness	Free		467	14
4811.31.40	Other	2.1%	Free (A,CA,E,IL,J,MX)	46	76
4811.40.00	Paper and paperboard, coated, impregnated or covered with wax, paraffin, stearin, oil, or glycerol	2.7%	Free (A,CA,E,IL,J,MX)	31	9
	Other paper, paperboard, cellulose wadding, and webs:				
4811.90.10	Handmade paper	3.1%	Free (A,CA,E,IL,J,MX)	[16]98	([6])
	Other:				
4811.90.20	Covered with flock, gelatin, metal, or metal solution	2.6%	Free (A,CA,E,IL,J,MX)	([16])	18
	Other:				
4811.90.30	Impregnated with latex	Free		73	3
	Other:				
4811.90.40	Weighing not over 15 grams per square meter	2.3%	Free (A,CA,E,IL,J,MX)	([16])	2
4811.90.60	Weighing over 15 grams per square meter but less than 30 grams per square meter	Free		([16])	10
4811.90.80	Weighing over 30 grams per square meter	1.6%	Free (A,CA,E,IL,J,MX)	([16])	80

Appendix B—*Continued*

Industrial papers: *Harmonized Tariff Schedule* subheading; description;[1] U.S. column 1 rate of duty as of Jan. 1, 1996; U.S. exports, 1995; and U.S. imports, 1995

Subheading	Abridged description	Col. 1 rate of duty as of Jan. 1, 1996 General	Col. 1 rate of duty as of Jan. 1, 1996 Special[2]	U.S. exports 1995	U.S. imports 1995
				— *Million dollars* —	
4812.00.00	Filter blocks, slabs and plates, of paper pulp	3%	Free (A,CA,E,IL,J,MX)	1	1
	Toilet paper, handkerchiefs, cleansing tissues, towels, tablecloths, table napkins, diapers, tampons, bed sheets and similar household, sanitary or hospital articles, articles of apparel and clothing accessories, of paper, pulp, cellulose wadding, or webs of cellulose fibers:				
4818.10.00	Toilet paper	[17]4.2%	Free (A,CA,E,IL,J,MX)	53	54
4818.20.00	Handkerchiefs, cleansing or facial tissues and towels	[17]4.2%	Free (A,CA,E,IL,J,MX)	139	105
4818.30.00	Tablecloths and table napkins	4.2%	Free (A,CA,E,IL,J,MX)	20	12
	Sanitary napkins and tampons, diapers and diaper liners, and similar sanitary articles:				
4818.40.20	Of paper pulp	Free		65	47
4818.40.40	Other	4.2%	Free (A,CA,E,IL,J,MX)	291	80
4818.50.00	Articles of apparel	4.5%	Free (A,CA,E,IL,J,MX)	82	4
4818.90.00	Other	2.4%	Free (A,CA,E,IL,J,MX)	76	9
	Other paper, paperboard, cellulose wadding and webs of cellulose fibers, cut to size or shape, other articles of pulp, paper, paperboard, cellulose wadding or webs of cellulose fibers:				
	Filter paper and paperboard:				
4823.20.10	Paint filters and strainers	4.2%	Free (A*,CA,E,IL,J,MX)	2	([6])
4823.20.90	Other	3%	Free (A,CA,E,IL,J,MX)	17	15

Appendix B—*Continued*

Industrial papers: *Harmonized Tariff Schedule* subheading; description;[1] U.S. column 1 rate of duty as of Jan. 1, 1996; U.S. exports, 1995; and U.S. imports, 1995

[1] Some tariff descriptions have been condensed. For the precise legal tariff description, see HTS chapter 48.

[2] Programs under which special tariff treatment may be provided and the corresponding symbols for such programs as they are indicated in the "Special" subcolumn are as follows: Generalized System of Preferences (A); Goods of Canada pursuant to the NAFTA (CA); Caribbean Basin Economic Recovery Act (E); United State-Israel Free-Trade Agreement (IL); Andean Trade Preference Act (J); Goods of Mexico pursuant to the NAFTA (MX).

[3] Imports under these HTS subheadings correspond to exports under Schedule B subheading 4803.00.00. Exports under Schedule B subheading 4803.00.00 are reported under the first relevant subheading in the table.

[4] Imports under these HTS subheadings correspond to exports under Schedule B subheading 4804.31.50. Exports under Schedule B subheading 4804.31.50 are reported under the first relevant subheading in the table.

[5] Imports under HTS subheadings 4804.39.20 and 4804.39.6040 correspond to exports under Schedule B subheadings 4804.39.6020 and 4804.39.70. Exports under these Schedule B subheadings are reported under the most logical relevant subheadings in the table.

[6] Less than $500,000.

[7] Imports under HTS subheadings 4805.60.20, 4805.60.30, 4805.60.50, 4805.60.70, and 4805.60.9040 correspond to exports under Schedule B subheadings 4805.60.60 and 4805.60.95. Exports under these Schedule B subheadings are reported under the first relevant subheading in the table.

[8] Imports under HTS subheadings 4805.70.20 and 4805.70.4060 correspond to exports under Schedule B subheading 4805.70.50. Exports under this Schedule B subheading are reported under the first relevant subheading in the table.

[9] Imports under HTS subheadings 4805.80.20 and 4805.80.4090 correspond to exports under Schedule B subheading 4805.80.50. Exports under this Schedule B subheading are reported under the first relevant subheading in the table.

[10] The 1995 trade data for these 1996 HTS subheadings were respectively reported under 1995 HTS subheadings 4807.91.00, 4807.99.20, and 4807.99.40.

[11] Exports in 1995 were reported under Schedule B subheading 4807.91.00.

[12] Imports under HTS subheadings 4807.99.20 and 4807.99.40 correspond to exports under Schedule B subheading 4807.99.00. Exports under this Schedule B subheading are reported under the first relevant subheading in the table.

[13] Imports under these HTS subheadings correspond to exports under Schedule B subheading 4808.90.00. Exports under Schedule B subheading 4808.90.00 are reported under the first relevant subheading in the table.

[14] Imports under these HTS subheadings correspond to exports under Schedule B subheading 4810.39.00. Exports under Schedule B subheading 4810.39.00 are reported under the first relevant subheading in the table.

[15] Imports under these HTS subheadings correspond to exports under Schedule B subheading 4810.91.00. Exports under Schedule B subheading 4810.91.00 are reported under the first relevant subheading in the table.

[16] Imports under these HTS subheadings correspond to exports under Schedule B subheading 4811.90.90. Exports under Schedule B subheading 4811.90.90 are reported under the first relevant subheading in the table.

[17] Rolls of a width exceeding 15 cm are dutiable at a lesser rate—3.1 percent ad valorem in 1996. See HTS subheading 9907.48.02.

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

APPENDIX C
EXPLANATION OF TARIFF AND TRADE AGREEMENT TERMS

TARIFF AND TRADE AGREEMENT TERMS

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

Duty rates in the ***general*** subcolumn of HTS column 1 are most-favored-nation (MFN) rates, many of which have been eliminated or are being reduced as concessions resulting from the Uruguay Round of Multilateral Trade Negotiations. Column 1-general duty rates apply to all countries except those enumerated in HTS general note 3(b) (Afghanistan, Cuba, Laos, North Korea, and Vietnam), which are subject to the statutory rates set forth in ***column 2***. Specified goods from designated MFN-eligible countries may be eligible for reduced rates of duty or for duty-free entry under one or more preferential tariff programs. Such tariff treatment is set forth in the ***special*** subcolumn of HTS rate of duty column 1 or in the general notes. If eligibility for special tariff rates is not claimed or established, goods are dutiable at column 1-general rates. The HTS does not enumerate those countries as to which a total or partial embargo has been declared.

The ***Generalized System of Preferences*** (GSP) affords nonreciprocal tariff preferences to developing countries to aid their economic development and to diversify and expand their production and exports. The U.S. GSP, enacted in title V of the Trade Act of 1974 for 10 years and extended several times thereafter, applied to merchandise imported on or after January 1, 1976 and before the close of May 31, 1997. Indicated by the symbol "A" or "A*" in the special subcolumn, the GSP provided duty-free entry to eligible articles the product of and imported directly from designated beneficiary developing countries, as set forth in general note 4 to the HTS.

The ***Caribbean Basin Economic Recovery Act*** (CBERA) affords nonreciprocal tariff preferences to developing countries in the Caribbean Basin area to aid their economic development and to diversify and expand their production and exports. The CBERA, enacted in title II of Public Law 98-67, implemented by Presidential Proclamation 5133 of November 30, 1983, and amended by the Customs and Trade Act of 1990, applies to merchandise entered, or withdrawn from warehouse for consumption, on or after January 1, 1984. Indicated by the symbol "E" or "E*" in the special subcolumn, the CBERA provides duty-free entry to eligible articles, and reduced-duty treatment to certain other articles, which are the product of and imported directly from designated countries, as set forth in general note 7 to the HTS.

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

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

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

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

The ***General Agreement on Tariffs and Trade 1994*** (GATT 1994), annexed to the Agreement Establishing the World Trade Organization, replaces an earlier agreement (the GATT 1947 [61 Stat. (pt. 5) A58; 8 UST (pt. 2) 1786]) as the primary multilateral system of disciplines and principles governing international trade. Signatories' obligations under both the 1994 and 1947 agreements focus upon most-favored-nation treatment, the maintenance of scheduled concession rates of duty, and national (nondiscriminatory) treatment for imported products; the GATT also provides the legal framework for customs valuation standards, "escape clause" (emergency) actions, antidumping and countervailing duties, dispute settlement, and other measures. The results of the Uruguay Round of multilateral tariff negotiations are set forth by way of separate schedules of concessions for each participating contracting party, with the U.S. schedule designated as Schedule XX.

Pursuant to the **Agreement on Textiles and Clothing** (ATC) of the GATT 1994, member countries are phasing out restrictions on imports under the prior "Arrangement Regarding International Trade in Textiles" (known as the **Multifiber Arrangement** (MFA)). Under the MFA, which was a departure from GATT 1947 provisions, importing and exporting countries negotiated bilateral agreements limiting textile and apparel shipments, and importing countries could take unilateral action in the absence or violation of an agreement. Quantitative limits had been established on imported textiles and apparel of cotton, other vegetable fibers, wool, man-made fibers or silk blends in an effort to prevent or limit market disruption in the importing countries. The ATC establishes notification and safeguard procedures, along with other rules concerning the customs treatment of textile and apparel shipments, and calls for the eventual complete integration of this sector into the GATT 1994 over a ten-year period, or by Jan. 1, 2005.

APPENDIX D
PAPER AND PAPERBOARD: MAJOR INDUSTRY INDICATORS FOR THE LEADING INTERNATIONAL PRODUCERS, 1995

Appendix D

Paper and paperboard: Major industry indicators for the leading international producers, 1995

Country or region[1]	Total forest	Per capita consumption of paper/paperboard	Number of paper/ paperboard mills	Paper/paperboard capacity	Number of employees in the pulp/paper industry
	(1,000 square kilometers)	(kilograms)		(million tons)	(thousands)
United States	2,960	332.0	537	88	228
Canada	4,180	229.7	117	20	66
TOTAL NORTH AMERICA[2]	7,140	321.7	654	108	294
Germany	104	193.7	224	16	47
Finland	263	304.3	44	12	37
France	137	164.4	141	10	26
Sweden	290	210.2	50	10	34
Italy	87	139.6	210	8	[3]26
United Kingdom	24	193.6	97	6	24
Spain	111	192.1	140	4	10
Austria	39	129.3	28	4	20
TOTAL WESTERN EUROPE[4]	([5])	171.0	1,072	77	([5])
Japan	252	239.1	441	32	53
China	([5])	21.7	[6]6,000	17	[6]1,500
South Korea	65	146.7	137	7	66
Taiwan	19	223.7	153	5	18
India	668	14.0	380	5	71
Indonesia	144	3.7	61	4	300
TOTAL ASIA[4]	([5])	25.3	[6]7,566	77	([5])
CIS	([5])	12.7	161	11	([5])
TOTAL EASTERN EUROPE[4]	([5])	19.2	312	18	([5])
Brazil	[7]15	34.9	220	7	62
Mexico[2]	400	35.8	59	4	25
TOTAL LATIN AMERICA[4]	([5])	31.0	473	16	([5])
TOTAL AFRICA	([5])	5.5	87	4	([5])
TOTAL OCEANIA[8]	([5])	153.2	27	4	([5])
GLOBAL TOTAL	([5])	48.7	[6]10,234	306	([5])

Appendix D—*Continued*
Paper and paperboard: Major industry indicators for the leading international producers, 1995

[1] Countries selected were all those that had a paper capacity of over 4 million tons in 1995. The collective totals for "other" countries in Europe, Asia, and Latin America are not presented, because "other" data are not available or the data would be meaningless.
[2] In order to be consistent with *Pulp and Paper International's* analyses, Mexico is grouped with Latin America.
[3] 1994 employment data for Italy.
[4] Totals do not add because many other countries in this region are not depicted.
[5] Not available.
[6] Most paper mills in China are small.
[7] Represents Brazil's commercial forest land. Data on Brazil's total forest area are not available.
[8] The principal industries in this region are in Australia and New Zealand.
Source: Derived from data in annual review issue, *Pulp and Paper International,* July 1996.