1994 industry outlook for paper and allied products

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Paper and allied products shipments will climb an estimated 3% in 1994 and should increase by about 2.5% annually through 1998.

This article is based on a chapter from the 1994 U.S. Industrial Outlook report from the U.S. Commerce Department. The full document will be available in January 1994. (Readers may also find chapters such as "Chemicals and Allied Products," "Printing and Publishing," and "Foods and Beverages" of interest.) For more information, contact the U.S. Department of Commerce, Forest Products Division, Washington, DC 20230.

Overview: paper and allied products

The United States has the world's most competitive paper and allied products industry. It is recognized worldwide as a high-quality, high-volume, low-cost producer that benefits from a large consumer base, a modernized technical infrastructure, adequate raw materials, and a highly skilled labor force. The industry ranks eighth among all U.S. manufacturing industries in the value of its shipments and third among the nondurables sectors in sales. Although one of the largest U.S. consumers of energy (ranked third behind metals and chemicals), the paper and allied products industry has the highest rate of self-generated fuels, totaling more than 56% in 1992–93.

Within Standard Industrial Classification (SIC) 216, there are 17 separate manufacturing sectors which process wood, used paper, other cellulose fiber, and plastic film into thousands of end products. The largest sector is the capital-intensive primary pulp, paper, and paperboard manufacturing industries that obtain cellulose fibers from company-owned and managed timberlands or from purchased virgin and recycled fibers. These sectors produce commodity grades of wood pulp, printing and writing papers, sanitary tissue, industrial-type papers, containerboard, and boxboard. According to an industry survey, in 1992 this sector operated an estimated 544 paper and paperboard mills and 207 pulp mills (down three from 1991). Together, these mills employed about 196,700 people in 1993. The primary sector is concentrated in the South, close to its major forest resources, but its paper- and paperboard-producing plants are concentrated in the North Central and Northeast regions of the country.

The converting sector is larger and more widely distributed, consisting of 14 separate, distinct industries. These include firms that are either integrated with the primary manufacturers (especially in the production of sanitary tissue paper products, corrugated shipping containers, folding cartons, flexible packaging, and envelopes) or firms that purchase paper, paperboard, and plastic film from the primary sector and transform these materials into finished products. Most of the paper and paperboard converting sector is in the populous metropolitan areas in the Northeast, Southeast, the Great Lakes region, and California, where end-user markets are readily accessible and high transportation costs can be minimized.

Industry performance

Aggregate current dollar shipments of the U.S. paper and allied products industry were estimated at US$ 130 billion in 1993, a less than 1% decrease from the 1992 level. The small decline was directly attributable to continued depressed prices that affected a number of leading pulp, paper, and paperboard grades in 1993. Several attempts to raise prices on the principal paper and board commodities were only partially successful, and deep regional price discounting significantly lowered the actual unit values of many delivered products. Still, tonnage shipments were up for many of the industry's principal paper and paper grades, in both domestic and foreign markets.

The primary pulp, paper, and paperboard sectors accounted for slightly more than 40% of the value of the industry's total shipments. In 1993, the sector recorded significant real growth in its output and sales of certain printing and writing papers and boxboard, while shipments of market pulp and containerboard declined. The larger, more labor-intensive paper and paperboard converting sector, which accounted for the remaining 58% of paper industry shipments, achieved significant real growth in certain sectors in 1993, particularly in its sales of corrugated and folding carton shipping containers and boxes, sanitary paper products, and envelopes.

For the first time in recent years, improvements and rebuilds of existing machinery and equipment were reported to have exceeded the installation of new machines—at significant cost savings to the industry at a time of reduced profitability. By controlling operating rates and improving sales and distribution methods, paper and paperboard inventories have currently been drawn down to near-normal, workable levels, in contrast to previous business downturns. As a result, the industry is in a relatively strong economic position.

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In a recent industry survey, U.S. companies had announced they would spend US$ 13.4 billion on mill improvements over the 1992–94 period, down 4.4% from the previous year's survey and marking the third straight year of decreased expenditures. But the negative trend has leveled off and should turn positive over the next several years as the global economic recovery progresses. With the industry's largest expansion (during 1987–90) winding down, environmental improvements have replaced capacity additions as the driving force behind the industry's capital spending plans. Environmental programs now account for nearly 15% of total spending plans, up from 13.8% in 1992. Stricter state environmental standards have led to projects to add secondary treatment plants, control odorous emissions, and reduce the use of elemental chlorine.

As in other manufacturing sectors, rapidly escalating medical costs have become a major industry concern and are threatening the economic viability of a number of paper companies. Health care costs are estimated to consume almost half of business operating profits, so trying to control escalating insurance costs will be a main agenda item for most paper companies. Negotiations will hinge on determining the dollar amount of industry medical cost-sharing and the extent of employee health coverage.

International competitiveness

After narrowing for four straight years, the U.S. paper industry's historic trade deficit expanded in 1993 to US$ 1.4 billion after it had narrowed to US$ 302 million in 1992. Factoring in the large U.S. recovered paper export trade (not included in SIC data) estimated at about US$ 560 million in 1993 (imports were a relatively small US$ 26 million), the 1993 trade deficit was less than US$ 900 million.

The value of industry exports decreased about 2% in 1993, following an 8.5% rise in 1992. Export tonnage was essentially unchanged from the 1992 level, further reflecting a softness in prices for U.S. paper and allied products. Despite a record-low U.S. dollar, the industry was not able to take advantage of the favorable exchange rate because of the poor economic performances of both Asia and Europe. Exports of kraft linerboard, the industry's single largest export commodity, were especially hit hard by depressed foreign demand, falling 8% in 1993 primarily due to lower sales to the European Community (EC) and Japan.

However, substantially higher sales were noted in a number of individual export markets including Mexico (up 11%), Canada (up 8%) and Thailand (up 18%). Markets declined in Japan, most of the EC, Scandinavia, the Caribbean, Taiwan, South Korea, and the People's Republic of China. The EC remained the principal regional market for U.S. paper goods, with about 21% of the total in 1993. Canada remained the number one-ranked country market, with 21% of the total, followed by Mexico (15%) and Japan (12%).

The continued growth of U.S. paper and allied products exports to Canada in 1993, despite that nation's economic difficulties, is largely credited to the U.S.-Canada Free Trade Agreement (FTA), which eliminated all paper industry tariffs between the two nations on Jan. 1, 1993.

Approval of the North American Free Trade Agreement (NAFTA) is expected to accelerate U.S. paper exports to Mexico. Growth in U.S. exports to Mexico over the past five years has soared by 70%, from US$ 841 million in 1988 to US$ 1.4 billion. NAFTA would phase out market access barriers on most primary pulp, paper, and paperboard grades over a five-year period. Corrugated box tariffs and nontariff barriers would be eliminated over seven years, and most converted products would be on a 10-year phase-out time frame.

The Uruguay Round of the GATT multilateral trade talks were ongoing at press time, with the Clinton Administration pressing for a Dec. 15, 1993, conclusion. The paper industry continues to press U.S. and foreign government and industry officials to implement the zero-for-zero market access barrier removal initiative, which will effectively eliminate all market access barriers affecting the import and export of paper and allied products. A successful conclusion of the Uruguay Round is essential to the paper industry if it is to remain competitive in global paper markets.

The primary objective of the U.S.-Japan Paper Agreement signed in April 1992 was to open Japan's US$ 69 billion paper market to foreign suppliers. The two governments will continue to review the agreement semiannually over the next five years.

The economic downturn, which slowed business activity in the United States and in its major paper trading partners in Western Europe and the Pacific Rim, has not eroded the international position of the U.S. paper industry. Its products were highly cost-competitive in overseas markets despite the various constraints placed by foreign tariff and nontariff barriers, the systematic barriers of the Japanese paper market, and the increasing economic cohesion of the EC.

Environmental issues

Based on its 1993 performance (41–42% recovery rate), the domestic paper industry will easily surpass the goal of achieving a 40% used paper recovery rate by 1995.

Many states and local jurisdictions continued to press for tougher recycling and packaging legislation, and the U.S. government also tightened its requirements for recycled fiber content in the large quantity of printing and writing papers it purchases.

The Environmental Protection Agency (EPA) continues to develop revised water effluent and air emission limitations and standards for the industry under the Clean Water Act and the Clean Air Act. The guidelines are expected to address dioxins and other substances, with potential implications for bleached pulp mills. EPA expects to have its proposed guidelines ready by early 1994 and promulgated by mid- to late-1995. Clean Air Act amendments, signed into law at the end of 1990, provide extensive changes to existing and new source requirements in ozone, carbon monoxide, and particulate matter. These requirements could have a profound effect on pulp and paper mills in regions where ambient air quality does not meet health-based national standards. Paper companies will be required to demonstrate, on a case-by-case basis, that they are in compliance with all existing air standards, or that the benefits of a mill significantly outweigh the environmental and social costs of anti-pollution regulations.

The EC's recent draft legislation on packaging and packaging waste, precipitated by the restrictive actions of individual member countries such as Germany, is a growing concern in the United States and other paper-trading nations. The objective of the recent EC directive is to reduce the amount of packaging waste produced, require the recovery of packaging waste, and minimize the volume of such waste that goes into final disposal. The EC draft proposes that 90% of packaging waste is to be recovered and 60% is to be recycled within 10 years. Earlier time-frame targets were dropped in favor of EC member states proposing their own timetables for reaching an intermediate state of recovery and recycling. New emphasis has been put on such measures as an EC packaging tax to ensure collection of waste and to fund recycling plans. Strict conditions have been set to ensure that member states do not use these levies as future barriers to trade. Overall, the imposition of an EC packaging tax plus the requirement that manufacturers, retailers, and distributors be responsible for recovering packaging waste, could add to U.S. paper export costs and reduce general product competitiveness over the longer term.

Outlook for 1994

Real growth in shipments of paper and allied products is projected to climb about 3%, supported by stronger domestic demand for packaging and industrial-type paper grades and by strengthening export markets. Despite further economic consolidation of the reorganized EC trading bloc in 1994, U.S. paper and allied product shipments to that market will likely expand because of the U.S. paper industry's success in meeting the new EC guidelines and product standards. The industry will attempt to further strengthen its presence in Western Europe through joint ventures or acquisitions of local papermaking operations, especially in the printing/writing and sanitary tissue sectors.

Exports should increase by at least 5% in 1994, and the increase could be significantly higher if trade concessions are realized in Japan, Mexico, and the EC. Imports will continue to expand in 1994 as Canadian shipments of newsprint, pulp, and printing and writing paper successfully reach many U.S. end users.

Long-term prospects

Paper and allied products shipments are forecast to grow at an average annual rate of about 2.5% over the 1994–98 period. The combination of abundant, relatively low-cost fiber resources and energy supplies, and improvements in product technology and design will keep the domestic industry at the forefront among world paper and paperboard producers, converters, and exporters. The successful implementation of the U.S.-Japan Paper Trade Agreement, NAFTA, and the GATT are keys to the industry's future export performance. Competition for sales in the United States and abroad will probably intensify, as foreign paper companies in the developing nations improve their product quality and more aggressively compete in major Western markets. The growth of many Latin American countries' economies, as well as growing markets in the Pacific Rim, will offer increased opportunities for U.S. paper producers during the next five years.

Competition for domestic packaging market share between paper and plastics will continue through 1998. But the strong environmental movement in the United States and abroad will constrain the rapid growth of rigid and flexible plastic packaging, a trend that will benefit paper and paperboard. The domestic plastics industry will boost its efforts to develop more degradable resins through the use of various organic chemical combinations (such as cornstarch) and will organize better collection methods to recover and recycle conventional plastic bags and containers. Environmental spending for new and expanded recycling facilities is expected to accelerate during the forecast period in an attempt to counter increasing pressures from consumer groups to create environmentally friendly products, and to satisfy new federal and state guidelines on reducing air and water emissions.

The rate of growth in the value of paper product imports is expected to increase over the next few years and exports of paper and allied products are projected to climb at an even faster rate. The result should be a positive trade balance for years to come.

Pulp mills

Commodities manufactured by this sector (SIC 2611) include a number of chemical and mechanical paper grade pulps and special alpha and dissolving pulps, sold on the open market. Shipments by this industry, both export and domestic, annually represent between 12–16% of total U.S. pulp production and do not include domestic transfer shipments to affiliated paper and board mills.

After a record-breaking year in 1992, the U.S. market pulp industry experienced a 2.5% decline in shipments in 1993 from 8.76 million metric tons to 8.54 million metric tons. Depressed foreign sales in key markets, sluggish demand, falling prices, continued global overcapacity, low operating rates in domestic market pulp mills, and significant increases in domestic and foreign recovered paper consumption contributed to the overall reduction in U.S. market pulp demand. On the other hand, there was a nearly 10% increase in shipments to the domestic market, which marked the reversal of a trend that began in 1988. Overall, U.S. market pulp exports represented two-thirds of all U.S. market pulp shipments in 1993, a decline from the 70% market share that exports held in 1992.

Industry developments

Bleached and semibleached softwood and hardwood kraft (or sulfate) paper grade pulp is the principal commodity produced by the domestic market pulp industry. In 1993, this commodity accounted for nearly 95% (8.11 million metric tons) of total domestic sales.

In 1993, about 63% (22.8 million metric tons) of world output of chemical paper-grade market pulp came from the NORSCAN countries (United States, Canada, Sweden, Finland, and Norway). Recently, the market share of NORSCAN producers has come under increased pressure from a number of low-cost, state-of-the-art market pulp mills in Latin America, Western Europe, and Africa. As the pulp industries in the low-cost regions develop, the NORSCAN pulp producers will struggle to maintain their domestic and foreign market shares, which will force increased productivity and environmental protection while holding down costs.

The global pulp consumer market is undergoing a transition driven primarily by changes in the European pulp market. Tremendous interest and investment, brought about by environmental and public pressures (especially in Europe) has been focused in the past several years on the development and production of totally chlorine free (TCF) market pulps, made without the use of any chlorine compounds in the bleaching process. Advanced pulp processing technologies based on extended delignification; improved brownstock washing techniques; and the development and implementation of hydrogen peroxide, oxygen, and ozone bleaching operations have been effective in dealing with the dioxin problem associated with chlorine bleaching as well as producing high quality pulp.

International competitiveness

In 1993, U.S. exports of market pulp decreased about 8% (on a quantity basis), from 6.12 million metric tons to 5.63 million metric tons. Due to falling pulp prices, the value of exports fell more than 16%. U.S. exporters shipped market pulp to 74 countries in 1993, but four imported 46% of total U.S. pulp exports. The major importers were Japan (18% of total), South Korea (12%), Mexico (10%), and Italy (7%).

U.S. pulp imports increased nearly 10%, from 5.03 million metric tons to 5.53 million metric tons, and accounted for almost 9.8% of total U.S. wood pulp consumption. In 1993, the United States imported market pulp from 15 countries, but Canada (86%) and Brazil (10%) were the only significant suppliers of pulp.

Outlook for 1994

A turnaround in the world economy, especially in the United States, Western Europe, and Asia, should result in higher sales of U.S. market pulp. Domestic and foreign market pulp shipments should increase about 2.3%, reaching 8.74 million metric tons. Higher demand by European and Asian producers of printing and writing papers will contribute to the expansion of sales by domestic market pulp manufacturers.

U.S. exports of market pulp will increase by 8.5% (on a quantity basis) to 6.11 million metric tons, which will increase their market share to nearly 70% of all U.S. market pulp shipments. U.S. imports will also increase, as Canadian market pulp exports to the large U.S. market increase by an additional 6%.

Long-term prospects

The U.S. market pulp industry should experience higher sales throughout the 1994–98 forecast period, but the growth in shipments will be limited to 2% annually. Foreign pulp shipments, as a percent of total U.S. market pulp shipments, will likely increase to almost 75% during the next five years as U.S. paper and board producers continue to consume even larger quantities of recovered paper and paperboard.

World market pulp capacity is forecasted to increase about 4% over the next five years, mostly by North American and Latin American producers. At the same time, global market pulp demand should increase about 6.5% annually.

The movement of the U.S. pulp industry toward TCF bleaching will continue as domestic and foreign government, consumer, converter, and environmental pressures increase. This will lead to an increase in TCF kraft market pulp capacity and in hydrogen peroxide, oxygen, and ozone bleaching plant installations or retrofits. The worldwide green movement will continue to change the character of the papermaking marketplace and alter historical fiber consumption patterns.

As many countries worldwide combat the growing municipal solid waste (MSW) problem and the pressure to increase secondary fiber use, many levels of government will implement legislation or set policies the affect the collection and use of recyclable paper and board—the largest constituent of domestic MSW. This additional legislation will put even greater pressure on papermakers to increase the amount of secondary fiber in their fiber mix. Nonintegrated world papermakers will find secondary fiber an abundant, less-expensive alternative to virgin fiber, thus creating a stronger demand for recovered paper throughout the forecast period.

Improved pulping and bleaching technologies will be developed during 1994–98. New higher-brightness bleaching technologies, greater-yielding pulping processes, improved cleaning and processing of recovered paper, and greater recovery of energy are foreseen. These developments will be essential to the future profitability of many mills. Similar measures to keep costs down and productivity high are needed if the industry is to remain competitive.

Paper and paperboard mills

The U.S. primary paper and paperboard mills industries experienced higher sales in 1993, primarily due to increased domestic demand, especially in the printing and writing grades. Based on first-half results, U.S. production increased by 2.5% in 1993 to 76.4 million metric tons. The total current dollar value was just over US$ 46 billion. A continuing world oversupply resulted in net operating losses for most U.S. paper and board companies.

Domestic paper mills

The industry produces four principal commodities: printing and writing paper, newsprint, tissue, and packaging and industrial papers. The leading sector was printing and writing paper, which accounted for 21.8 million metric tons, or 57.5% of all production by the paper industry in 1993. Product shipments by domestic paper mills rose 3.3% in 1993.

In 1993, shipments of uncoated free sheet (the single largest paper grade produced, 52% of total printing and writing papers) increased 3.5%, reflecting strong domestic demand by publishing, commercial printing, and office/business end users. Operating rates during 1993 remained in the 90–93% range but a similar performance is unlikely in 1994.

Shipments of uncoated groundwood increased more than 7% to nearly 4.1 million metric tons, more than 18.5% of domestic printing and writing paper shipments. After several years of strong growth shipments of newsprint increased by only 1% in 1993, amounting to 6.38 million metric tons and accounting for nearly 17% of total U.S. paper shipments. U.S. newspaper publishers' consumption increased 1.2%, but that was offset by a more than 10% decline in newsprint exports.

Paperboard mills

After experiencing strong growth over the past several years, U.S. paperboard production increased less than 2% in 1993. Containerboard production amounted to 26.7 million metric tons, an increase of only about 1%, representing 69% of all paperboard production. In 1993, boxboard production amounted to 11.9 million metric tons. Production of containerboard for domestic use increased less than 2% to 23.6 million metric tons representing 61% of all U.S. paperboard production in 1993.

Domestic linerboard production amounted to 16.4 million metric tons, about 61% of total containerboard production and about 42% of all U.S. paperboard production. Total domestic production of corrugating medium grew less than 1%, to 7.2 million metric tons, representing 30% of U.S. containerboard production and just under 19% of total U.S. paperboard production. Domestic boxboard production continued its recent strong performance, increasing more than 4.2% in 1993.

International competitiveness

Exports of various printing and writing paper grades, which increased 24% in 1992, increased an additional 11% in 1993 to nearly 1.2 million metric tons. Uncoated free sheet and coated groundwood were responsible for most of the increase. Principal U.S. export markets for uncoated free sheet in 1993 were Canada (53.5%), Mexico (13.7%), and Hong Kong (2.8%). The leading U.S. export targets for coated groundwood were Canada (35.1%), Mexico (19.2%), Japan (18.2%), and The Netherlands (13.3%).

The recessionary or stagnant economic climates in Europe and Asia had a negative effect on U.S. paperboard exports in 1993. Overall, U.S. paperboard exports fell nearly 3% to 4.43 million metric tons. Exports of unbleached kraft linerboard (accounting for 60% of all paperboard exports) fell by 8%, to 2.65 million metric tons. But in 1993, U.S. exports of folding carton board, after growing 4% in 1992, expanded an additional 16% to 256,820 metric tons.

A moderate turnaround in the U.S. economy and the large domestic paper consuming market were the principal reasons for a sizable increase in U.S. paper and board imports in 1993. On a volume basis, imports surged by more than 15% to 11.95 million metric tons. This was led by a more than 18% increase in newsprint imports to 7.45 million metric tons, which were supplied almost exclusively by Canada. Imports of printing and writing paper increased nearly 14% to 3.6 million metric tons. Imports of paperboard grades increased 10% to 907,000 metric tons, mostly supplied by Canada.

Outlook for 1994

The real value of product shipments in 1994 is expected to increase 2.5% as domestic demand remains strong and U.S. producers experience higher sales in overseas markets. This forecast is contingent upon growth in the U.S. economy, a low valued U.S. dollar, and a marked improvement in the economies of Asia and Europe. U.S. paper and board exports should increase about 5%, while imports should increase about 3%. In 1994, domestic paper and board producers are expected to add an additional 1.5 million metric tons of capacity, which could continue to put pressure on prices. If the global economy is able to improve in 1994, the additional output could be easily absorbed by foreign converters and packagers. If not, the result will likely be flat or slightly lower operating rates in domestic paper and board mills and increased pressure on domestic producers to schedule extended periods of mill downtime.

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Long-term prospects

The domestic paper and board mills industry should experience higher local and foreign demand for its leading outputs over the 1994–98 period. The U.S. industry, which already produces about one-third of the world's paper and board, should be in the best position to supply much of the world's increased paper and board requirements, expected to reach a record 300 million metric tons by 1988. Product shipments should increase at an average annual rate of 2.3%. As additional capacity is brought on-line, the industry will continue to target foreign markets, especially Japan, Mexico, and the EC. However, for the U.S. paper and board industry to be successful in the world paper market, it must be put in a position to sell overseas through improved market access. If the industry is to remain competitive and improve its position in world markets, it is essential that tariff and nontariff barriers in principal export markets be eliminated.

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The U.S. industry will need to continue to adapt its processing technologies and products to improve upon its recognition as an environmentally conscious industry. The industry will continue to consume progressively larger amounts of secondary fiber in its products for environmental, economic, and public approval purposes. In some instances, recovered paper will replace virgin wood pulp through retrofits and new equipment. The industry will also need to develop products that are recognized by global paper consumers as environmentally friendly or low-environmental impact. This will improve the industry's position in the world paper market and should result in higher sales.

Corrugated and solid fiber boxes

Product shipments of corrugated and solid fiber box deliveries were valued at US$ 18.9 billion in 1992. Total shipments (physical quantity basis) increased 2.5% to 344.1 billion ft^2, an all-time U.S. industry high. A moderate increase in the U.S. economy resulted in a slight increase in demand for industrial and consumer nondurable goods, which translated into higher demand for various packaging and shipping medium.

Corrugated boxes and other packaging products have a longstanding and excellent reputation in both industry and end-user circles as being environmentally acceptable. The recycling rate of old corrugated containers (OCC) is 55–60%, the highest among all post-consumer recovered paper categories. In 1993, the corrugated industry continued to rapidly expand its consumption of preprinted linerboard ("preprint"), as several leading domestic containerboard producers added to their preprint capacity. The domestic demand for graphically enhanced corrugated packaging is soaring as users place higher priorities upon point-of-purchase (POP) sales for goods packaged in shipping containers. Recent growth in the value-added, POP high graphics market has far exceeded that of the traditional brown box business. The food packaging industry in particular puts tremendous emphasis on multicolored, high-impact packaging with innovative designs.

The industry's 1993 performance marked the eighth consecutive year that total industry shipments set a record. The growth in shipments occurred across all regions of the United States, but was the strongest in the West and the Southeast. The 1993 record shipment level was about 40% above the revised corrugated sales volume of the EC and more than twice as large as Japan's annual corrugated box shipments.

International competitiveness

In 1993, U.S. exports of corrugated paperboard products experienced their fourth consecutive year of double-digit growth by increasing 10% in value and 4% in quantity. U.S. exports of value-added corrugated products were shipped mainly to adjacent markets in Mexico (65%) and Canada (23%). Significant increases in purchases were made by several small markets, particularly from countries in Asia, Latin America, and the Caribbean.

Although imports of corrugated containers and other products are still relatively small, amounting to only US$ 67.2 million in 1993, they increased 35% on a value basis. Principal corrugated product suppliers included Canada, Taiwan, and Mexico.

Outlook for 1994

The value of shipments of corrugated and solid fiber products is projected to increase by about 3.5% in 1994. The forecast is contingent upon a growing U.S. economy, an increase in consumer spending which should translate into higher shipments of durable and nondurable goods, and a stable low-valued U.S. dollar. The food and kindred products and paper and allied products industries will continue to be the leading end-use markets in 1994. Demand by chemicals and allied products, toys, amusements, sporting goods, and rubber and miscellaneous products will be the fastest-growing end-user segments.

Exports of corrugated products are expected to continue to increase by 12% in 1994, a fifth consecutive year of double-digit growth, as principal markets in Asia and Latin America strengthen. Imports, while still small, will increase an additional 15% in 1994.

The structure of the industry should remain stable in terms of the number of plants, but the industry will continue its efforts to keep inventory levels down, output high, and prices at acceptable levels. The trend toward acquisitions is not expected to continue in 1994. Larger producers, especially the fully integrated operations, will either upgrade or downsize their operations showing little or static profit.

Long-term prospects

U.S. corrugated product shipments are forecast to grow at a 2.5% annual rate over the next five years, placing the industry first in projected average annual growth among all domestic paperboard packaging sectors. Consumer-directed specialty corrugated products, a relatively small portion of annual sales, will grow at a faster rate than the industry average over the forecast period, but containers and boxes will continue to dominate shipments. The value-added, POP high graphics market will continue to experience gains much higher than the traditional brown box business. Shipments should increase 6–7% annually over the next five years.

As the world's highest-volume, lowest-cost producer, the Unites States is projected to maintain an estimated 35% share (more than 24 million metric tons) of the total number of boxes produced worldwide (expected to climb 3–4% annually) during the next five years. Economic growth in many parts of Latin America and Asia will result in increased demand for most packaging mediums, especially corrugated packaging and shipping containers. These countries' demand will likely far outstrip the supply from their domestic output, further increasing the potential for additional U.S. exports of both containerboard and higher value-added corrugated products to these areas.

However, to remain competitive the industry needs to continue to increase the productivity of its corrugator and sheet plants while keeping labor and operating costs at acceptable levels. The industry will also have to be flexible to customer demands, both foreign and domestic, which will become increasingly challenging in years to come. The development of new graphics, coatings, inks, dyes, and corrugated products will be essential if the industry is to remain the world's highest-quality producer. Expanded automation will enable box customers to establish Local Area Networks (LANs) with their producers, entering their orders directly from their computer to the boxmaker's computer and receiving accurate updates on order status. Advanced computerized scheduling and control systems will minimize the amount of waste board produced from the corrugator and will make troubleshooting of the boxmakers' equipment more effective, thus minimizing plant repair and maintenance downtime.

U.S. exports of corrugated products (in value terms) are forecast to climb an average of 10% annually over the forecast period, buoyed by increasing sales to Mexico and Canada. Technological advances will produce boxes that should meet the most stringent overseas environmental and performance requirements.

Sanitary paper products

The U.S. sanitary paper products industry experienced higher sales in 1993 as product shipments increased 2.5%. This industry continues to position itself into an almost recession-proof industry. Its principal commodity lines (toilet tissue, consumer and industrial toweling, feminine hygiene products, disposable diapers) are primarily nondiscretionary commodities whose usage is based on population growth, demographic changes, consumer buying and price trends, and product specialization.

In 1993, the value of current dollar product shipments for this industry was US$ 16.2 billion. The three leading product sectors were: sanitary tissue paper products (valued at US$ 9.4 billion, or 58% of all U.S. sanitary paper products sales); disposable baby diapers (US$ 5.2 billion, or 32% of the industry's total sales); and personal feminine hygiene products (valued at US$ 1.5 billion, or about 9.2% of total sales).

The strong domestic market for new-to-market entrees such as toilet tissue and baby wipes has created some excellent sales opportunities for private label and generic tissue producers. Much publicity was given to the appearance, texture, size, absorbency, and overall quality of many of the leading products. In advertising and promotion of its products in recent years, this industry has easily outspent all other domestic paper converting and packaging sectors combined.

The US$ 52-billion disposable baby diaper segment is under the most competition and pressure. The competition for the domestic disposable diaper market has increased rapidly over the past decade as the principal U.S. producers develop new products, increase their production, establish aggressive advertising campaigns and other promotional activities, and alter their pricing patterns to maintain or increase market share. With exceptionally high capital costs and proprietary technologies serving as effective barriers to entry for competitors, the leading suppliers are well entrenched and are constantly jockeying for position in terms of leading U.S. sales.

In recent years, tremendous pressure has been placed on U.S. disposable diaper producers to address the issue of the diapers' environmental impact and its likelihood for recycling, composting, or biodegrading. Increased competition from reusable cloth diapers and the proliferation of diaper services combined with stronger-than-expected negative media coverage have cause the industry to respond with its own publicity campaign to promote its products' ability to be composted or recycled or to biodegrade.

The industry continues to experience rapid growth for its wide range of adult incontinence products. Consumer response to these types of products has been excellent and strong growth should be expected for several years.

In the area of personal feminine hygiene products, new product innovations and technical and medical safety improvements and precautions have helped to gradually expand annual tampon product sales, hampered due to the toxic shock syndrome problems that occurred in the 1980s. This situation had led to a rapid nationwide switch to external sanitary napkins and pads.

International competitiveness

U.S. exports of sanitary paper products, which accounted for the largest dollar total of any U.S. converted paper products sector, rose 3% in value and almost 6% in quantity over the 1992 level. The export profile consisted of disposable diapers and liners (28%); disposable bed sheets and similar health-care articles (18%); sanitary hospital gowns, clothing, or other apparel (13%); and paper towels (10%). These products were shipped mostly to Mexico and Canada. With 4.5% of the export total, Japan was the fastest-growing market, its imports by 48% in quantity and 56% in value in 1993.

U.S. imports of sanitary paper products rose about 10% over 1992. Principal foreign suppliers to the domestic market were Canada and Mexico.

One of the most prevalent trends in the global sanitary tissue market involves compact packaging. This is obtained through greater product compactness during the final packaging step before shipment, which translates into more product being transported in less space. The benefits are lower transport costs, optimized storage and warehouse spacing, more effective use of existing shelf space, and reduced packaging use and costs. Another trend in some Asian and European markets is coreless bathroom tissue rolls, which are wound on a mandrel which is then extracted when the roll is finished. The center of the roll has an irregular-shaped hole which is then fitted onto traditional dispensers through a syringe-type mechanism. The products have been very successful in both the EC and Japan. U.S. companies have begun to develop a number of products using this idea.

Outlook for 1994

An increase in the domestic demand for disposable diapers, consumer and C&I tissue products, adult incontinence products, and disposable health-care articles will result in at least a 3% rise (constant dollar basis) in the value of sanitary paper products shipments. Tissue shipments are expected to increase in volume by almost 4.5%. Exports and imports are expected to increase about 5% each in 1994. Recovery, recyclability, and biodegradability will continue to be major issues for the industry. Capacity additions planned for 1994 will use recycled fiber in part or as the total fiber mix.

Long-term prospects

During the 1994–98 forecast period, shipments of sanitary paper products are expected to climb about 3% annually (in constant dollars). Disposable baby wipes, adult incontinence products, and health-care apparel and other articles will make up the fastest-growing industry component. Environmental pressures to limit or ban the sale of disposable diapers are expected to continue in many jurisdictions over the forecast period, especially as the numbers of sanitary landfills shrink.

Foreign trade in sanitary paper products will continue to expand, especially with Canada and Mexico. As per capita income continues to climb in Latin America and the Pacific Rim, greater sales of higher value-added U.S. sanitary products such as disposable baby diapers and adult health care items are expected.

Several major U.S. sanitary tissue products companies, anticipating the growth of the newly consolidated EC, have positioned themselves (through mergers, acquisitions, and new plant construction) to gain market share in this highly lucrative paper sector. The U.S.-owned or -shared operations are likely to further expand their investments in the EC during the next few years. Toward the latter part of the forecast period, when the economies of Eastern Europe are expected to stabilize, some U.S. sanitary products companies will probably show greater interest in penetrating that potentially significant market. Sanitary products have evolved into a global industry that is expected to continue to expand worldwide over the next five years. TJ

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