

1. ECONOMICS OF THE INDUSTRY

INTRODUCTION

The paper and allied products industry is the eleventh largest manufacturing industry in the United States in terms of contribution to gross domestic products (GDP) with a share of 4%. Shipments were \$158.2 billion in 1997, up from \$154.9 billion in 1996, but down from \$164.9 billion in 1995.

The industry produces high-volume products with production of all grades of paper and paperboard in 1997 at 96.8 million tons, up 5% from 92.2 million tons in 1996 and 91.3 million tons in 1995. Domestic consumption in 1997 was 2% higher than production as imports exceeded exports by slightly more than 2.0 million tons. Although paper and paperboard is basically a low-cost commodity, it is an adaptable material that can be designed in a number of forms and produced with a great assortment of properties to meet a variety of end uses.

A distinguishing characteristic of the paper industry is its high level of capital investment. One dollar of investment in gross plant and equipment generates only \$1.69 in annual sales. In 1996, the industry is estimated to have spent \$9 billion for capital expenditures, of which approximately 13% was for environmental control equipment.

The industry has a highly efficient but conservative technology. Most of its basic technical practice was developed in the nineteenth century when the continuous paper machines, fourdrinier and cylinder types, were invented and when various processes for woodpulping were developed. Great advances have since been made, but these have generally involved progress in engineering process improvements rather than radical innovations in the basic technology. As in mining, metals, and other primary industries, high competence in engineering rather than in basic research is the distinguishing feature of the paper industry.

Because of its high capital investment, the industry on the whole tends to be production-oriented rather than marketing oriented. Although applications for paper are constantly expanding, these markets are most often developed by research outside the industry rather than within the paper industry. For example, special papers for business communications are expanding at a remarkable rate, but the technological impulse for this growth has come from manufacturers of computers and document-copying machines rather than from paper companies.

An important exception to this general rule is sanitary paper products. Producers have effectively sold the concept of disposability to the public and have made great gains in marketing such convenience items as facial tissue, napkins, cups, and plates. Because of this, sanitary paper products enjoy one of the highest rates of growth in the industry.

Paper is one of the oldest manufacturing industries having been in existence for over 2000 years. For most of the 20th century, the domestic paper industry increased at a rate that was slightly lower than real gross domestic product (constant dollar GDP). However, over the past 20 years, the industry has grown at a rate which closely approximated increases in real GDP. In the United States per capita consumption of paper and board is about 730 pounds per person, the highest in the world.