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**A CASE STUDY ON HOW TO
CONDUCT AN INDUSTRY
PERFORMANCE REVIEW:
THE NORTH AMERICAN
PAPER INDUSTRY**

by

Dorothy A. Paun



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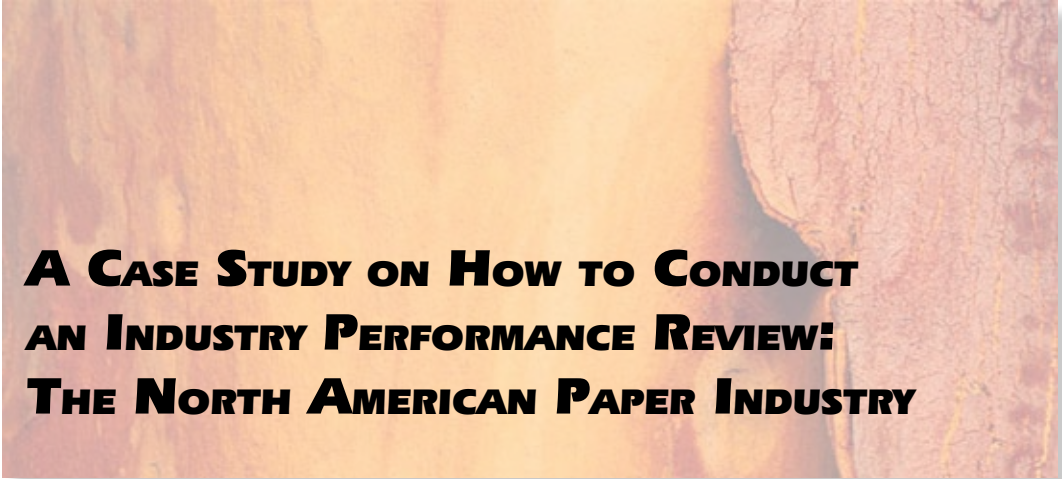
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A CASE STUDY ON HOW TO CONDUCT AN INDUSTRY PERFORMANCE REVIEW: THE NORTH AMERICAN PAPER INDUSTRY

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This case study describes in detail how to conduct a performance review of forest product industries. This case study uses the paper industry for illustration, but the principles and methods presented are such that you will be able to conduct a performance review in any industry.

INTRODUCTION

The first step in conducting a performance review is to garner an overview of finance and accounting fundamentals, which can be accomplished through a review of introductory finance and accounting texts. These are plentiful and generic, so most will suffice. Because a real-world financial review requires analyzing financial statements, texts on financial statements analysis are very useful; an alternative to these academic texts

are popular press books on financial statements, the most useful and approachable being *Financial Statements: A Step-by-Step Guide* (Ittelson 1998).

LOCATING FINANCIAL DATA AND THE SAMPLE

The second step is to decide which companies will be included in the analysis. In this case study, paper firms that publicly trade on stock exchanges are identified using the *Lockwood Post's Directory of the Pulp and Paper Industry*. Any industry directory with a comprehensive listing of publicly traded companies can be used. The first time a sample is identified, cross referencing among several directories, say with Standard and Poor's, creates sample reliability if a census of companies is sought. It is important to create selection criteria for companies to be included in the sample. In this case study, qualifying companies are those having more than 20% of annual sales arising from the manufacture of pulp, paper, and/or packaging products, as compared to wood and non-wood products. Each year, we report mergers and acquisitions, which have been common in the forest products industry.

The third step in conducting a performance review is to obtain the necessary corporate financial information, in particular the current annual reports of the companies to be studied. One alternative is to obtain financial data electronically. Publicly traded companies publish their annual reports on the Web, and it is also possible to download financial data online from Edgar (<http://www.edgar-online.com>), Hoovers (<http://hoovers.com>), or Annual Report Service (www.annualreportservice.com), to name a few services. Another alternative is to ask each company to send a paper copy of their annual report.

The fourth step is to conduct the financial statement review and analysis, which is presented in detail in the next section (note that we will use International Paper, Weyerhaeuser Company, and other firms to illustrate the process and resultant findings that are presented in the Appendix).

CONDUCTING THE FINANCIAL ANALYSES: STUDY VARIABLES

In conducting an industry review, it is important to carefully choose the research domain. Common study variables include sales (firm size), capital expenditures (investing in the future), debt-to-equity (liquidity), product sectors (competitive domain), return on equity and earnings per share (rates or return), and globalization (international business activities, sales and production). In the sections below, each variable is described, the formula for calculation is presented, and any special analysis considerations are discussed.

STUDY VARIABLE ONE: FIRM SIZE

*ANNUAL SALES = TOTAL ANNUAL SALES
MINUS DISCOUNTS, ALLOWANCES,
RETURNS*

*PAPER SALES = PAPER ANNUAL
SALES MINUS PAPER DISCOUNTS,
ALLOWANCES, RETURNS*

Annual sales is a measure of firm size. *Annual net sales* refers to total sales minus discounts, allowances, and returns (any activity that reduces or reverses sales). *Total annual net sales* include all revenues earned from paper, wood, and non-forest products sales. Total sales are reported in the *income statement*, also called the *earnings statement*.

To calculate paper sales, look for and subtract any intersegment sales (i.e., sales among a firm's business segments). We only subtract out the proportion of intersegment sales that can be attributed to the paper portion of the firm's segmented sales. If a firm subtracted intersegment sales and did not add them in to sales, we report net sales to unaffiliated customers only and subtract only the proportion of intersegment sales attributed to paper sales.

To remove the impact of firm size on industry statistics (e.g., mean or average), compute weighted means. Weighting factors are calculated by dividing net sales of each firm by the sum of net sales of all industry firms. Four weights are calculated, based on paper sales and total sales, for each U.S. and Canadian firm, for the current and the previous year.

For ease of comparison, most study variables convert Canadian dollars to U.S. dollars in the tables; however, Canadian firm weights must be determined using Canadian dollars. Additionally, when calculating the percent change in sales between the current

and previous year, Canadian dollars must be used to avoid distortions that would arise due to the Canadian dollar's appreciation or depreciation relative to the U.S. dollar.

Total annual sales in 1999 ranged from a high of \$38 billion for Procter & Gamble to a low of \$67 million for Badger Paper (see Appendix, Table 3). Industry mean total annual sales reached almost \$5 billion, an increase of 9% from the previous year. *Paper annual sales* ranged from a high of almost \$20 billion for International Paper to a low of \$67 million for Badger Paper. Industry mean paper annual sales were \$3 billion, an increase of 10% over 1998. Factors influencing this increase in total and paper sales include acquisitions and improved global market demand for pulp and packaging products. The largest company in the U.S. is International Paper, with almost \$25 billion in total annual sales, while Weyerhaeuser Company ranks seventh in size with about \$12 billion dollars in total annual sales.

Paper annual sales, the focus of our performance review, are a segment of total net sales. International paper had almost \$20 billion of paper sales, or 80% of its total annual sales. Weyerhaeuser, a more diversified firm in terms of paper *and* wood products, had paper sales of almost \$5 billion, which represents 39% of its total annual sales. Firms may automatically report a dollar amount for all paper sales, but sometimes it is necessary to add up the sales of individually reported paper segments. Paper sales can be found in the business segment information, in the "Notes to the Financial Statements."

STUDY VARIABLE TWO: INVESTING IN THE FUTURE

CAPITAL EXPENDITURES = PAPER

CAPITAL EXPENDITURE PURCHASES AND ACQUISITIONS

Capital expenditures are purchases of land, property, equipment, and technological

improvements, *as well as* facilities acquisitions (i.e., buying another firm's mill, but *not* buying wholly another firm). As such, capital expenditures represent investments in future production.

Total capital expenditures (i.e., non-paper capital expenditures and paper capital expenditures) are often reported in the "Cash Flow Statement"; however, we strive to report *only* paper capital expenditures. If the cash flow statement does not provide separate paper capital expenditures, we search for paper capital expenditures throughout the annual report. Near the end of the report, many paper firms have a "Capital Expenditures Table" that separates capital expenditures by business segment or product line, and, if so, it is possible to add the capital expenditures (e.g., market pulp, newsprint, paperboard and packaging, printing and writing papers, specialty paper products, and tissue). If no capital expenditures table exists, then the information may be in the "Notes to the Financial Statements." However, the notes may state *total* land, buildings, and equipment purchases, necessitating further reading to determine whether or not such purchases are associated with paper manufacturing and distribution versus non-fiber products. The Shareholders Letter may also provide information on paper capital expenditures.

Most paper firms discuss capital expenditures as land, buildings, and equipment purchases, but we want to also include acquisitions to paper capital expenditures. Acquisitions can be the purchase of a pulp or paper mill or other type of manufacturing facility *and* the purchase of another firm. We report the former only because the purchase of a mill or manufacturing facility is essentially a substitute for purchasing new equipment. Most paper firms report their major acquisitions for the last three to five years, but we are interested in acquisitions that took place during the year of our analyses. If there is

a large increase in capital expenditures, we look through the annual report and note how the money was invested. We do not include *corporate* expenditures (as compared to *capital* expenditures) in paper capital expenditures.

Capital expenditures have a tendency to correlate directly with annual sales, so capital intensity is reported to eliminate firm size effect. Capital intensity represents paper capital expenditures divided by annual paper sales. The paper industry is capital intensive, and both the U.S. and Canadian industries means are typically 8%, suggesting that, on average, \$8 per \$100 earned is reinvested in productive capacity.

For the U.S. firms, the trend to reduce capital expenditures continued in 1999. Industry average capital expenditures decreased 5%, to \$685 million in capital expenditures (see Appendix, Table 11). Thirteen firms (37%) reported an increase in the capital expenditures. The ranges in both 1999 and 1998 were very similar, with expenditures ranging from a low of \$3 million to a high of \$2.8 billion. Similarly, 1999 capital intensity resembled 1998, with a low of 2% and a high of 25%, when Republic Group, with its phenomenal 1999 capital intensity of 152%, is excluded from the analysis. Mean capital intensity decreased 1%.

Both International Paper and Weyerhaeuser represent companies that invest heavily in future growth. International Paper spent nearly a billion dollars on capital expenditures, and as such ranked second in the industry. Weyerhaeuser invested almost \$300 million, for a sixth-place rank.

STUDY VARIABLE THREE: RISK AND LIQUIDITY

$$DEBT-TO-EQUITY = \frac{TOTAL LIABILITIES}{SHAREHOLDERS' EQUITY}$$

Debt-to-equity ratios describe the proportion of assets that are leveraged to those that are owned by shareholders. Lenders, investors, and suppliers alike examine a company's debt-to-equity ratio when deciding where to lend or invest money. Lenders want assurance that they will be repaid; investors want an assurance that the company will remain solvent and produce a return; suppliers need to know they will be paid. In an industry as volatile as pulp and paper, debt-to-equity can illustrate which companies will be able to survive market fluctuations. In sum, debt-to-equity analysis is important to understanding the survivability of a firm and the ability to cope with the unexpected.

We interpret a debt-to-equity ratio of 2:1 as saying that a company is using \$3 of total capital for every \$1 of equity capital; or, stated alternately, a company has \$3 of total assets for every \$2 of debt and \$1 of equity capital invested. When the return on an asset is expected to exceed the weighted average cost of capital, companies justify assuming debt for productive assets that have a high likelihood of enhancing profitability. In doing so, a company is leveraging itself. High debt-to-equity ratios indicate that a larger proportion of assets are leveraged. If a company is over leveraged, then it may be unable to pay bills (i.e., become insolvent) in the face of a sudden or unexpected change in market conditions. For this reason, debt-to-equity is used as a proxy for risk when assessing investments.

Liabilities, found on the *balance sheet*, are short (e.g., accounts payable, accrued expenses and taxes, dividends payable, and short-term loans and notes) or long-term (e.g., minority

interest, long-term loans and notes, redeemable preferred shares) obligations.

Shareholders' equity is also found on the balance sheet and is composed of common and preferred shares, retained earnings, foreign exchange conversion adjustments, paid-in capital and capital in excess of par value, contributed surplus and deficit minus the cost of treasury shares. Shareholders' equity does not include convertible debentures and minority interest. Firms may issue a security called redeemable preferred shares (as compared to regular preferred shares), and, if listed in shareholders' equity, these should be subtracted and added to liabilities.

It is common for U.S. paper firms to be more highly leveraged than Canadian paper firms. The past several years, U.S. paper firms averaged a debt-to-equity ratio of slightly over 2.0, whereas Canadian paper firms averaged less than 1.5.

The U.S. industry average debt-to-equity ratio was 2.18, a decrease of -0.04 from the previous year (see Appendix, Table 9). This minimal change in leverage demonstrated industry commitment to control leverage and debt. Weyerhaeuser Company debt-to-equity ratio, at 1.6, was more conservative than the industry, as was International Paper at 1.9.

STUDY VARIABLE FOUR: INTERNATIONAL BUSINESS ACTIVITIES

*INTERNATIONAL BUSINESS = EXPORTS,
FOREIGN SALES, AND FOREIGN
PRODUCTION*

International business activity refers to transactions across national borders. International sales arise from *exports* (producing a product in one country and selling in another country) and overseas production and sales. Foreign business enables firms to protect themselves from the risks and uncertainties

associated with domestic business cycles, secure new market share, achieve lower production costs, and pursue opportunities for international counter-trade.

Foreign sales are presented in the notes to the financial statements and report sales in all overseas markets. In our analysis, we report annual foreign sales, followed by foreign sales as a percent of total annual sales. The latter indicates each firm's degree of globalization, so to speak. In the paper industry, U.S. firms derive as much as 67% of total sales from foreign sales, and only two firms have domestic sales only. Canadian firms earn as much as 90% of sales abroad, and no firms are dependent on domestic sales only. In addition to foreign sales, it is interesting to provide the country locations of foreign production facilities and sales offices. This geographic data is useful for interpreting where firms are doing business abroad.

U.S. firms averaged \$1.3 billion in foreign sales, representing a nearly 9% increase from 1998 (see Appendix, Table 13). Foreign sales ranged from \$18.4 billion for Procter & Gamble to a low of \$36 million for Greif. Procter & Gamble topped the list with over \$18 billion. Its foreign sales were more than three times greater than its closest competitor, International Paper, which reported foreign sales of \$5.4 billion. Other firms *leading annual foreign sales* were Kimberly-Clark (\$4.6 billion) and Weyerhaeuser (\$2.3 billion). Forty-eight percent of International Paper's sales are foreign derived, compared to Weyerhaeuser's 18%.

STUDY VARIABLE FIVE: COMPETITIVE DOMAIN

PRODUCT SECTORS

A *product* is anything that is offered to satisfy a want or need. These can be tangible goods (tissue paper), intangible series (paper

distribution services), ideas (sustainable forestry), persons (Smokey the Bear), places (California Redwood country), and organizations (Sierra Club). While many forest products firms produce and sell paper products, wood products, and non-forest products, the focus of our performance review is paper.

The six primary product sectors of the pulp, paper, and packaging industry are market pulp, newsprint, paperboard and packaging, printing and writing papers, specialty papers, and tissue. We examine the product sector groupings for two reasons. First, it is important to know which companies compete directly. Second, it is useful to interpret study findings on an intra-sector basis (e.g., comparing return on equity for business-to-business firms (e.g., market pulp) versus consumer products firms (e.g., tissue).

- *Market pulp* is any kind of pulp sold to outside buyers, including hardwood and softwood pulp, bleached and unbleached pulp, pulp from virgin and recycled fiber, fluff pulp, and alpha-cellulose pulp.
- *Newsprint* is paper used to make newspapers and other temporary papers.
- *Paperboard and packaging* includes linerboard, corrugated containers or medium, folding cartons, kraft paper (e.g., grocery bags), molded fiber products (e.g., egg cartons), recycled fiber paperboard and packaging, and specialty paperboard and packaging.
- *Printing and writing papers* include uncoated groundwood (e.g., directory paper and catalogs), coated groundwood (e.g., magazines and newspaper inserts), uncoated wood-free (e.g., groundwood-free, like writing paper, printing paper, offset paper, bond paper, tablets, and copy paper), and coated wood-free (e.g., high quality high gloss paper for books, ads, annual reports).

- *Specialty papers* include photographic films, cigarette papers, postage stamps, filter papers, glassine, and cellophane, to name a few.
- *Tissue products* are characterized by high absorbency and include numerous consumer products like facial tissue, toilet tissue, sanitary tissue, toweling, and napkins.

Wood products are solid or composite wood products, including timber, lumber, engineered wood products, furniture, flooring, cabinetry, and moldings. Non-forest products are non-fiber, non-wood products, examples of which include plastic products, metal products, medical equipment, over the counter drugs, and real estate. Information on the products manufactured by a firm can be found in the annual report inside cover, sections describing the firm's mission, such as the "Letter to Shareholders," and the "Segmented Sales Section."

International Paper and Weyerhaeuser are highly diversified firms in that they participate in almost all product sectors. Both firms produce market pulp, paperboard and packaging, printing and writing papers, wood products, and non-wood products, meaning International Paper does not compete in the newsprint market and Weyerhaeuser, the tissue market.

STUDY VARIABLE SIX: RETURN ON EQUITY

$$RETURN\ ON\ EQUITY = NET\ INCOME / AVERAGE\ SHAREHOLDERS'\ EQUITY$$

Profitability ratios, or "return on" ratios (e.g., assets, capital, equity, income), compare corporate profits to other financial information. From an investor's perspective, the greater the return, the greater the motivation for investing in a company through buying its stock.

One of the most common measures of return is return on equity. *Return on equity* measures the profit earned for shareholders. Specifically, it examines net income (total sales minus all expenses), shown on the earnings statement, relative to shareholders' equity, shown on the balance sheet. Shareholders' equity includes common and preferred shares, retained earnings, foreign exchange conversion adjustments, paid-in capital and capital in excess of par value, and contributed surplus and deficit. Items excluded from shareholders' equity are cost of treasury shares, convertible debentures, minority interest, and redeemable preferred shares (not to be confused with preferred common shares).

Calculating return on equity can be a challenge. Sometimes paper firms have no net income but rather a net loss, and occasionally a firm will have negative shareholders' equity, say from paying dividends that exceed current and retained earnings. In our research lab, we are careful to footnote the following situations. First, a firm earns a profit but has negative shareholders' equity or positive net income divided by negative shareholders' equity. This produces a negative return on equity, which is not meaningful. Second, the worst possible scenario, a firm incurs a loss and has negative shareholders' equity or negative net income divided by negative shareholders' equity. Two negatives "mathematically" produce a favorable or a positive return on equity, however, which would be very misleading to report.

Average return on equity (see Appendix, Table 5) was almost 18% for U.S. firms, representing an absolute percent increase of 3%. Return on equity ranged from a high of 50% for Chesapeake to a low of -22% for Pactiv. This high-low range was narrower than the previous year, which had a high of 61% and a low of -32%. Of the 35 U.S. paper firms in the study, 33 firms (94%) had a positive return on equity. Factors contributing to the increase

included strengthened economies that boosted sales, industry consolidation, and relative price stability, which enabled 23 firms (65%) to experience growth in both sales and return on equity. Both of our company illustrations had lackluster returns that were below the industry average. International Paper, ranked 33 out of 35 firms, earned 1.7% and Weyerhaeuser, ranked 21, earned 9%.

In a comparative analysis of return on equity in our past five publications, the following was observed. Pulp and newsprint manufacturers tend to have a much lower return than the paper industry average. The return earned by the paperboard and packaging and printing and writing sectors closely reflects the average industry return on equity. Specialty papers and tissue consistency have a much high return than the industry average; it is interesting to note that specialty papers' superior return has been eroding the past five years toward the industry average while tissue's return is accelerating each year.

STUDY VARIABLE SEVEN: EARNINGS PER SHARE

EARNINGS PER SHARE DILUTED =
NET INCOME / AVERAGE NUMBER
OF COMMON SHARES OUTSTANDING
MINUS TREASURY SHARES PLUS
COMMON SHARE EQUIVALENTS

EARNINGS PER SHARE BASIC = NET
INCOME / AVERAGE NUMBER OF
COMMON SHARES OUTSTANDING
MINUS TREASURY SHARES

Earnings per share is a profitability measure of the dollar amount of net income earned (total sales minus expenses) for each share of common stock. Investors frequently use this ratio. First, it is commonly used because

earnings per share is the foundation for the amount of a dividend that a firm can pay shareholders (i.e., for solvent firms, dividends are paid from current earnings and not retained earnings). Second, investors look for earnings per shares that grow over time, which can enhance the value of the stock.

There are two types of earnings per share shown in the income statement, basic earnings per share and diluted earnings per share. Both have the same numerator (i.e., net income), but have different denominators, because diluted earnings per share includes the dilution that would occur if “potentially dilutive securities” or “common share equivalents” were converted into common stock that then shared in the earnings. Examples include stock options, convertible preferred shares, convertible bonds, contingent shares, stock warrants. If a firm has no common share equivalents, then basic and diluted are the same, and if this is the case, paper firms report only basic earnings per share.

Some Canadian paper firms use average number of common shares outstanding while other firms use not an average but a year-end number of common shares outstanding. If a firm does not use an average, calculate an average using the two year-end numbers of common shares outstanding.

Overall, industry performance for North America was impressive. U.S. firms experienced a 58% increase in EPS, to \$2.18. 1999 average weighted EPS for U.S. pulp and paper firms was \$2.18, a 58% increase (see Appendix, Table 7). EPS ranged from a low of \$2.05 to a high of \$12.29. Weyerhaeuser Company earned \$2.55, for a sixth place rank, but International Paper earned only 44 cents, for a rank of 33 out of 35.

CLOSING REMARKS

After completing the performance review, the last step is to write a manuscript detailing the research or study findings. Typical manuscript sections might include an overview of the industry (both global and domestic); methodology (sample and accounting protocols followed); products sectors in the industry (for insight on the competitive environment); study variables (annual sales, return on equity, earnings per share, leverage, capital expenditure and intensity; and international business); future trends (future industry challenges and opportunities); and closing remarks. The method we use is that each student takes responsibility for one study variable and writes a corresponding manuscript section. All research participants play an active role in reviewing sections written by other students, as well as the completed manuscript. After a thorough in-house review, the industry performance review manuscript can be submitted to a journal for possible publication.

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Appendix

A PERFORMANCE ASSESSMENT OF THE NORTH AMERICAN PAPER INDUSTRY: 1999

by

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2001 TAPPI PEER-REVIEWED PAPER

A PERFORMANCE ASSESSMENT OF THE NORTH AMERICAN PAPER INDUSTRY

Dorothy Paun, Pantipa Tachawachira, Tracy Ho, Chavonda Jacobs-Young, Barb Miele, Jeff Connick, Shelley Gardner, Randy Cantrell, and Jason Cross

Paun is associate professor; Jacobs-Young is assistant professor; Cantrell, Cross, Gardner, and Tachawachira are Ph.D. students; Connick and Miele are M.S. and M.B.A. students; and Ho is a B.S. student.

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SUMMARY

This report presents findings arising from a financial performance analysis of the North America pulp, paper, and packaging industry. Data presented in 1999 annual reports of firms in the United States and Canada, 35 and 13 firms respectively, was used in the study. The objectives of this analysis are multiple. All publicly traded U.S. and Canadian pulp, paper, and packaging firms are categorized into primary product sectors so as to identify and compare direct competitors. We investigate industry performance by analyzing several financial measures, like annual sales, return on equity, and earnings per share. Risk assessment is achieved through an examination of firm leverage via the debt to equity ratio. Investment in the future is captured in our capital expenditures and intensity analysis. Worldwide activities are discussed in the international business section.

The analysis shows 1999 was a good year for the pulp, paper, and packaging industry. During 1999, pulp and paper sales increased 10% for U.S. firms, to almost US\$ 108 billion, and 15% for Canadian firms, to nearly US\$ 13 billion. Foreign sales rose as well, up 9% in the United States, to US\$ 43 billion, and 20% in Canada, to US\$ 12 billion. Rebounding sales were due to stronger demand, supply balanced with that demand, recovering Asian and European markets, little expansion of productive capacity, and higher production efficiency. Financial performance improved, as evidenced by positive

returns on equity that were almost 18% in the United States and 6% in Canada. Strong earnings per share were realized for U.S. firms, averaging US\$ 2.18, a 58% increase over 1998. For Canadian firms, earnings per share were US\$ 0.58, a six-fold increase from 1998. Leverage was relatively unchanged for all North American pulp, paper, and packaging firms, with U.S. average debt-to-equity being 2.18 and 1.33 for Canadian firms. Due to the continuing trend of reducing capital expenditures, capital expenditures and intensity decreased for U.S. firms (-5%, -1% respectively) and Canadian firms (-32%, -3% respectively).

INTRODUCTORY REMARKS

This report discusses the study findings arising from a financial analysis of the North American pulp, paper, and packaging industry, based on data presented in the 1999 annual reports of publicly traded firms in the United States and Canada. This is the sixth consecutive performance review of the industry published by researchers from the University of Washington (1, 2, 3, 4, 5). The objectives of this analysis are multiple. All publicly traded U.S. and Canadian pulp, paper, and packaging firms are categorized into primary product sectors so as to identify and compare direct competitors. We investigate industry performance by analyzing several financial measures, like annual sales, return on equity, and earnings per share. Risk assessment is achieved through an examination of firm leverage via the debt to equity ratio. Investment in the future is captured in our capital expenditures and intensity analysis. Worldwide activities are discussed in the international business section.

INDUSTRY OVERVIEW

Global

Characterized by higher prices and increased sales and earnings, 1999 was a good year for the pulp and paper industry. Rebounding from an oversupplied market in 1998, the industry strengthened profits by improving production efficiency and achieving a better balance between supply and demand (6). Production increased modestly despite a virtual halt in capacity growth during 1999. Taken together, these factors collectively led to higher prices, sales, and profits.

International consumption rose in 1999 with paper and board consumption rising over 4% to 314 million tons, from 301 million tons in 1998 (7). Pulp consumption grew by almost 3% to 180 million tons, from 175 million tons the previous year (8). While production capacity increased only 1.5%, improvement in efficiency was evident as paper and board production rose to 315 million tons in 1999, an increase of almost 5% from 1998 (9). Pulp production increased almost 2% to 179 million tons, from 176 million tons (9). A study of the top 150 pulp and paper firms recorded a sales increase of almost 4% world wide, equaling US\$ 223 billion in 1999 versus US\$ 215 billion in 1998 (10). The same study reported a 39% increase in profits, to over US\$ 14 billion in 1999 from slightly less than US\$ 10 billion in 1998 (10).

United States

The trend of global industry consolidation continued in 1999, including Weyerhaeuser's US\$ 2.45 billion acquisition of MacMillan Bloedel, and Georgia Pacific's US\$ 1.24 billion purchase of Unisource Worldwide (11). The consolidation drive appears to be fueled by industry efforts to decrease volatile market supply and associated prices (12), and it showed in 1999 with higher prices. Northern bleached softwood kraft pulp prices, while relatively unchanged between 1999 and 1998, rose 24% to a 1999 high of US\$ 610 per ton from a 1999 low of US\$ 460 (6). Despite higher prices, paper and board consumption rose over 4% to 95 million tons, from 91 million tons in 1998. U.S. pulp consumption remained comparatively even at 59 million tons, a decrease of less than 1% from 1998 (7). Production mimicked consumption patterns. Paper and board production increased almost 3% to 87 million tons, from 86 million tons in 1998. The increase in paper and board output was due to increased production efficiency, signaled by a simultaneous decline in production capacity (11). Production capacity of U.S. paper and board decreased 0.5% to 101 million tons, from 102 million tons the previous year. The increase in efficiency, coupled with strong demand and rising prices, led to increased sales and profits in 1999.

Canada

Consolidations continued throughout the Canadian pulp and paper industry, with transactions including the acquisitions of MacMillan Bloedel and Northwood. Pulp and paper and board consumption expanded in 1999. Paper and board consumption grew over 6% to almost 8 million tons in 1999, and pulp consumption increased over 6% to nearly 15 million tons in 1999 (7). Production increases exceeded consumption increases. Paper and board producers manufactured over 20 million tons, an increase of 8%. Pulp producers manufactured almost 26 million tons, almost 8% more than in 1998 (7). As with U.S. firms, Canadian production was robust despite a 0.5% drop in production capacity. Paper and board capacity rose almost 2% to 22 million tons while pulp capacity declined nearly 2% to 11 million tons in 1999 (13). Prices for Canadian products were mixed, with newsprint prices falling 9% while pulp and paper and board prices rose over 10%. Again, our study presents 1999 sales and performance data for Canadian firms.

STUDY METHODOLOGY

Sample

Pulp, paper, and packaging firms that publicly trade were identified using the *Lockwood Post's Directory of the Pulp and Paper Industry* (16). Firms having annual paper sales equal to or exceeding 20% of total (paper and non-paper) annual sales are included in the financial analyses. Since our 1998 analysis (1), several sample changes have taken place. Four firms were dropped from the analysis, three due to acquisitions (Crestbrook by Tempec, MacMillan Bloedel by Weyerhaeuser, and Union Camp by International Paper) and one due to bankruptcy (Crown Vantage). Thus, the total number of qualifying paper firms is 48, of which 35 are from the United States and 13 from Canada. It should be noted that Pactiv was formerly known as Tenneco. Tenneco, a firm

formerly included in this study, chose to spin off packaging operations, and as a result created Pactiv Corporation in 1999.

Foreign exchange and financial and accounting methods

Canadian dollars were converted to U.S. dollars using the Bank of Canada 1999 average exchange rate or Canadian \$1 equals US\$ 0.6730 while in 1998 Canadian \$1 equals 0.6734 (17). When calculating Canadian percent change between 1999 and 1998 data, our calculations used “local currency” or Canadian dollars to avoid distortions that would arise due to the Canadian dollar’s 1999 appreciation relative to the U.S. dollar. Note that 1998 financial information reflects any restated 1998 data presented in 1999 annual reports.

PRODUCT SECTORS

The industry manufactures a variety of products, from commodities like newsprint and corrugated medium to specialized, value-added items like tobacco filter papers. Emerging from this are several different markets or competitive product sectors. To distinguish these sectors, all firms are categorized into six different product sectors: market pulp, newsprint, paperboard and packaging, specialty papers, tissue, and printing and writing papers. In each product sector, firms are listed in descending order according to total annual sales in pulp, paper, and board for 1999 (**Table 1**).

Market pulp is cellulose-derived pulp, which encompasses bleached and unbleached pulp, fluff pulp, dissolving pulp, and pulp made from virgin and recycled fiber. Newsprint is a low-grade, commodity paper used for newspapers and other temporary papers and is characterized by high printability, high opacity, and low cost. The paperboard and packaging sector includes all linerboard, corrugated medium, folding cartons, kraft paper, and molded fiber products like egg cartons. Also included in this sector are recycled fiber and specialty paperboard and packaging. Specialty papers are value-added products, produced less commonly than commodity products, such as photographic films, tobacco papers, filter papers, glassine, and cellophane. The tissue sector contains items distinguished by high absorbency, like facial tissue, toilet tissue, sanitary tissue, toweling, and napkins. Printing and writing papers are coated and uncoated papers used for communication and made from ground wood and wood-free materials. Ground wood papers are often found in catalogs and newspaper inserts while wood-free papers are used for printing and copy paper and high quality, high gloss paper.

MARKET PULP		SPECIALTY PAPERS	
U.S.	Canada	U.S.	Canada
International Paper	Cascades	International Paper	Cascades
Georgia-Pacific	Domtar	Kimberly-Clark	Domtar
Smurfit-Stone	Donohue	Champion	Donahue
Fort James	Canfor	Bemis	Fletcher Challenge
Weyerhaeuser	Nexfor	Consolidated Papers	
Champion	Tembec	Wausau-Mosinee	
Mead	Fletcher Challenge	Caraustar	
Willamette	Alliance	P.H. Glatfelter	
Boise Cascade	Repap Enterprises	Buckeye	
Bowater	West Fraser	Schweitzer-Mauduit	
Consolidated Papers	Doman Industries	FiberMark	
Rock-Tenn		Lydall	
Potlatch		Badger Paper	
Buckeye			
Rayonier			
Pope & Talbot			
Republic Group			
NEWSPRINT		TISSUE	
U.S.	Canada	U.S.	Canada
Smurfit-Stone	Abitibi-Consolidated	International Paper	Cascades
Weyerhaeuser	Donohue	Kimberly-Clark	
Boise Cascade	Canfor	Procter & Gamble	
Bowater	Nexfor	Georgia-Pacific	
	Tembec	Fort James	
	Fletcher Challenge	Chesapeake	
	Alliance	Potlatch	
	West Fraser	Wausau-Mosinee	
PAPERBOARD AND PACKAGING		PRINTING AND WRITING PAPERS	
U.S.	Canada	U.S.	Canada
International Paper	Cascades	International Paper	Abitibi-Consolidated
Georgia-Pacific	Domtar	Kimberly-Clark	Cascades
Smurfit-Stone	Canfor	Georgia-Pacific	Domtar
Fort James	St. Laurent	Fort James	Canfor
Weyerhaeuser	Nexfor	Weyerhaeuser	Nexfor
Champion	Tembec	Champion	Tembec
Mead	Fletcher Challenge	Mead	Fletcher Challenge
Westvaco	Repap Enterprises	Westvaco	Alliance
Willamette	West Fraser	Willamette	Repap Enterprises
Sonoco		Boise Cascade	
Boise Cascade		Bowater	
Bemis		Consolidated Papers	
Consolidated Papers		Potlatch	
Temple-Inland		Wausau-Mosinee	
Rock-Tenn		P.H. Glatfelter	
Chesapeake		Badger Paper	
Potlatch			
Caraustar			
Gaylord Container			
Pactiv			
Longview Fibre			
FiberMark			
Lydall			
Greif Bros.			
Republic Group			
Badger Paper			

Table 1. Pulp, paper, and packaging product sector competitors.

Table 2 provides two additional sectors to these six pulp and paper sectors, solid wood products (e.g., lumber and paneling) and nonwood products (e.g., plastics, real estate). These are included in this report because diversified firms may experience different overall financial performance when compared with firms producing only pulp and paper.

SOLID WOOD PRODUCTS		NON-WOOD PRODUCTS	
U.S.	Canada	U.S.	Canada
International Paper	Abitibi-Consolidated	International Paper	Cascades
Georgia Pacific	Cascades	Kimberly-Clark	Tembec
Weyerhaeuser	Domtar	Proctor & Gamble	West Fraser
Champion	Donahue	Georgia Pacific	
Willamette	Canfor	Weyerhaeuser	
Boise Cascade	St. Laurent	Sonoco	
Bowater	Nexfor	Boise Cascade	
Temple-Inland	Tembec	Temple-Inland	
Chesapeake	Alliance	Rock-Tenn	
Potlatch	Repap Enterprises	Chesapeake	
Longview Fibre	West Fraser	Caraustar	
Rayonier	Doman	Pactiv	
Greif Bros.		FiberMark	
Pope & Talbot		Lydall	
		Greif Bros.	
		Republic Group	

Table 2. Solid wood and nonwood product sector competitors.

United States

Fourteen firms (40%) of the U.S. market sell solid wood products in addition to pulp and paper products. Sixteen firms (46%) of the market are involved in non-wood related businesses. Only 12 firms (34%) of the market sell mainly pulp and paper products

Canada

Twelve of the 13 Canadian firms (92%) of the market sell solid wood products as well as pulp and paper goods, leaving only one firm, Fletcher Challenge, solely based in pulp and paper. Of the 12 firms selling solid wood products, two firms, Cascades and West Fraser, are involved in non-wood products. Cascades manufactures plastic products and West Fraser Cascades runs a chain of retail stores.

ANNUAL SALES

The first variable examined, *total annual sales*, refers to the total revenues received for all products sold after discounts, returns, allowances, and intersegment sales have been subtracted from gross revenues. Many pulp, paper, and packaging firms also produce and sell a multitude of solid wood and non-forest products. The primary focus of this study is the paper industry, so pulp, paper, and packaging sales are provided in addition to total annual sales. Analyzing paper sales, independent of the total sales,

provides a more accurate picture of firm size, productivity, and position within the paper industry. Note that for consistency and ease of comparison, Canadian sales were converted to U.S. dollars using Bank of Canada 1999 (Canadian \$1 equals US\$ 0.6730) and 1998 (Canadian \$1 equals US\$ 0.6734) average exchange rates (7). For calculating Canadian percent change between 1999 and 1998 sales, "local currency" or Canadian dollars were used to avoid distortions arising from currency fluctuations and not sales increases or decreases.

Tables 3 and 4 report the sales of U.S. and Canadian firms, in descending order of 1999 annual report total annual sales data. Firms from both countries experienced a fairly strong increase in sales. *Total annual sales* in the United States were US\$ 170 billion, a 9% increase over 1998, and averaged US\$ 5 billion per firm. Canadian total annual sales were US\$ 17 billion, a 17% increase, and averaged US\$ 1.3 billion per firm. U.S. *paper sales* were US\$ 108 billion, a 10% increase over 1998, and averaged US\$ 3 billion per firm. Canadian paper sales were US\$ 13 billion, a 15% increase, and averaged US\$ 972 million per firm.

	1999 SALES				1998 SALES				% CHANGE	
	Paper annual sales, US\$ million	Total annual sales, US\$ million	Paper sales as % of total sales	Sales as % of industry sales	Paper annual sales, US\$ million	Total annual sales, US\$ million	Paper sales as % of total sales	Sales as % of industry sales	Paper annual sales %	Total annual sales %
International Paper	19,693	24,573	80	18.26	19,474	23,979	81	19.81	1.1	2.5
Kimberly-Clark	12,617	13,007	97	11.70	11,929	12,298	97	12.14	5.8	5.8
Procter & Gamble	11,451	38,215	30	10.62	10,862	37,154	29	11.05	5.4	2.9
Georgia-Pacific	9,065	17,796	51	8.41	5,565	13,229	42	5.66	62.9	34.5
Smurfit-Stone	7,151	7,151	100	6.63	3,485	3,485	100	3.55	105.2	105.2
Fort James	6,827	6,827	100	6.33	6,803	6,803	100	6.92	0.4	0.4
Weyerhaeuser	4,832	12,262	39	4.48	4,312	10,766	40	4.39	12.1	13.9
Champion	4,013	5,268	76	3.72	4,640	5,653	82	4.72	-13.5	-6.8
Mead	3,800	3,800	100	3.52	3,772	3,772	100	3.84	0.7	0.7
Westvaco	2,802	2,802	100	2.60	2,886	2,886	100	2.94	-2.9	-2.9
Willamette	2,611	4,078	64	2.42	2,446	3,700	66	2.49	6.8	10.2
Boise Cascade	2,168	6,953	31	2.01	2,094	6,162	34	2.13	3.5	12.8
Sonoco	2,114	2,547	83	1.96	2,123	2,558	83	2.16	-0.4	-0.4
Bowater	1,993	2,135	93	1.85	1,847	1,995	93	1.88	7.9	7.0
Bemis	1,918	1,918	100	1.78	1,848	1,848	100	1.88	3.8	3.8
Consolidated Papers	1,839	1,839	100	1.71	1,989	1,989	100	2.02	-7.5	-7.5
Temple-Inland	1,798	3,682	49	1.67	1,642	3,291	50	1.67	9.5	11.9
Rock-Tenn	1,218	1,310	93	1.13	1,203	1,294	93	1.22	1.6	1.2
Chesapeake	1,119	1,162	96	1.04	906	950	95	0.92	23.5	22.3
Potlatch	998	1,677	60	0.93	933	1,566	60	0.95	7.0	7.1
Wausau-Mosinee	945	945	100	0.88	946	946	100	0.96	-0.2	-0.7
Gaylord Container	871	871	100	0.81	843	843	100	0.86	3.3	3.3
Caraustar	863	890	97	0.80	715	737	97	0.73	20.7	20.8
Pactiv	847	2,921	29	0.79	800	2,791	29	0.81	5.9	4.7
P.H. Glatfelter	681	681	100	0.63	705	705	100	0.72	-3.8	-3.5
Buckeye	618	618	100	0.57	630	630	100	0.64	-2.0	-2.00
Longview Fibre	603	774	78	0.56	587	753	78	0.60	2.7	2.8
Schweitzer-Mauduit	504	504	100	0.47	547	547	100	0.56	-7.7	-7.7
Greif Bros.	459	819	56	0.43	456	814	56	0.46	0.7	0.6
Rayonier	459	1,036	44	0.43	486	1,009	48	0.49	-5.6	2.7
FiberMark	300	325	92	0.28	282	307	92	0.29	6.4	5.9
Lydall	268	319	84	0.25	188	224	84	0.19	42.6	42.0
Pope & Talbot	238	487	49	0.22	204	421	48	0.21	16.7	15.7
Republic Group	74	138	54	0.07	79	128	62	0.08	-6.3	7.8
Badger Paper	67	67	100	0.06	66	66	100	0.07	1.5	1.5
Mean (unweighted)*	\$3,081	\$4,868	78%	100.00%	\$2,808	\$4,466	78%	100.00%	10.1%	9.0%
Median	\$1,218	\$1,839	92%	100.00%	\$1,203	\$1,848	92%	100.00%	2.7%	2.9%

* Sales determine firm weights (a firm's sales relative to industry sales), so a weighted mean is not meaningful

Table 3. Annual sales of U.S. pulp, paper, and packaging firms.

	1999 SALES ^a				1998 SALES ^b				% CHANGE ^c	
	Paper annual sales, US\$ million	Total annual sales, US\$ million	Paper sales as % of total sales	Sales as % of industry sales	Paper annual sales, US\$ million	Total annual sales, US\$ million	Paper sales as % of total sales	Sales as % of industry sales	Paper annual sales %	Total annual sales %
Abitibi-Consolidated	2,582	2,718	95	20.43	2,155	2,253	96	19.63	20.0	20.9
Domtar	1,715	2,075	83	3.77	1,343	1,583	85	4.83	27.9	31.3
Cascades	1,672	1,760	95	8.20	1,619	1,704	95	7.77	3.5	3.5
Donohue	1,273	1,672	76	13.23	1,218	1,548	79	14.75	4.7	8.2
Canfor	1,036	1,178	88	1.40	853	956	89	1.43	21.7	23.5
St. Laurent	796	916	87	13.57	694	792	88	12.23	15.0	15.9
Nexfor	766	1,636	47	10.08	877	1,636	54	11.10	-12.5	0.2
Tembec	740	1,127	66	5.58	641	960	67	1.74	15.7	17.6
Fletcher Challenge	705	705	100	6.06	192	192	100	7.98	268.7	268.7
Alliance	476	709	67	2.96	531	732	73	3.67	-10.0	-23.0
Repap Enterprises	374	388	97	6.30	403	416	97	6.32	-6.9	-6.6
West Fraser	327	1,483	22	5.85	298	1,256	24	5.83	10.0	18.3
Doman Industries	176	588	30	2.59	157	525	30	2.71	12.5	12.2
Mean (unweighted)^d	\$972	\$1,304	73%	100.00%	\$845	\$1,119	75%	100.00%	15.1%	16.5%
Median	\$766	\$1,178	83%	100.00%	\$694	\$960	85%	100.00%	12.5%	15.9

^a 1999 exchange rate C\$1 = US\$0.6730
^b 1998 exchange rate C\$1 = US\$0.6743
^c Percent change calculated using Canadian dollar to avoid currency fluctuation distortion and not sales increases or decreases
^d Sales determine firm weights (a firm's sales relative to industry sales), so it is the only variable that can not report a weighted mean

Table 4. Annual sales of Canadian pulp, paper, and packaging firms.

United States

Total annual sales in 1999 ranged from a high of US\$ 38 billion for Procter & Gamble to a low of US\$ 67 million for Badger Paper (Table 3). Industry mean total annual sales reached almost US\$ 5 billion, an increase of 9% from the previous year. Paper annual sales ranged from a high of almost US\$ 20 billion for International Paper to a low of US\$ 67 million for Badger Paper. Industry mean paper annual sales in 1999 was US\$ 3 billion, an increase of 10% over 1998. Factors influencing this increase in 1999 total and paper sales include acquisitions and improved global market demand for pulp and packaging products.

The top five U.S. firms for paper annual sales in 1999 were International Paper (US\$ 20 billion), Kimberly-Clark (US\$ 13 billion), Procter & Gamble (US\$ 12 billion), Georgia Pacific (US\$ 9 billion), and Smurfit-Stone (US\$ 7 billion). Compared to 1998, the three largest firms remained unchanged in their positioning. International Paper and Kimberly-Clark are selling products in a variety of sectors, while Procter & Gamble focuses extensively on the seemingly always lucrative tissue sector. Georgia Pacific rose from the fifth to fourth largest firm, but the increase in sales was most likely due to the acquisitions of Unisource Worldwide and Wisconsin Tissue. Smurfit-Stone's improvement was attributable to the merger between Jefferson Smurfit and Stone.

In 1999, 71% of the firms experienced an increase in sales. The *five U.S. firms with the greatest percent increase in paper annual sales* in 1999 were Smurfit-Stone (105%), Georgia Pacific (63%), Lydall (43%), Chesapeake (24%), and Caraustar (21%). An increase on sales of Smurfit-Stone and Georgia Pacific was a result of previously mentioned mergers and acquisitions. For Lydall, an increase in paper sales arose due to the stronger Asian and European markets, particularly for the filtration and separation businesses. Chesapeake's sales increase seems due to the acquisition of European firms Field Group and Berry's Limited. Caraustar's improvement was driven by acquisitions of five Tenneco carton plants and Sprague paperboard mill.

The *five U.S. firms with the greatest percent decrease in paper annual sales* were Champion (-14%), Schweitzer-Mauduit (-8%), Consolidated Papers (-8%), Republic Group (-6%), and Rayonier (6%). Overall, 29% of the firms had a decrease in sales over 1998. The sales decline at Champion was attributable to divestments of newsprint operations and specialty paper mills. For Schweitzer-Mauduit, lower selling prices, unfavorable exchange rates, and reduced sales volumes in its core cigarette papers business caused a decline in paper sales. Consolidated Papers pursued a strategy that led to a deliberate reduction in coated printing paper production. Republic Group and Rayonier experienced lower sales due to weak markets in the paper product sectors.

Canada

In 1999, *total annual sales* ranged from US\$ 388 million for Repap Enterprises to almost US\$ 3 billion for Abitibi-Consolidated (Table 4). The industry mean for total annual sales in 1999 was US\$ 1.3 billion, an increase of nearly 17%. *Paper annual sales* in 1999 ranged from US\$ 176 million for Doman to almost US\$ 2.6 billion for Abitibi-Consolidated. The industry mean for paper annual sales in 1999 was US\$ 972 million, an increase of 15% over 1998. Many acquisition activities and the poor paper sales in 1998 are main factors for the improvement.

The *top three Canadian firms for paper annual sales* in 1999 were Abitibi-Consolidated (US\$ 3 billion), Cascades (US\$ 2 billion), and Domtar (US\$ 2 billion). Domtar and Cascades sell products in a variety of market segments, while Abitibi-Consolidated is a major supplier of newsprint.

The *three Canadian firms with the greatest percent increase in paper annual sales* were Fletcher Challenge (267%), Domtar (28%), and Canfor (22%). Abitibi-Consolidated was a close fourth with a 20% increase in sales. In 1999, 77% of the Canadian firms showed an increase in paper annual sales. Fletcher Challenge's sales increase was reflective of the much lower sales in 1998 due to a mill strike. Domtar's sales increase was driven by the completed integration of E.B. Eddy, initially acquired in July 1998. Canfor's increase in sales was due to the acquisition of Northwood.

Only *three Canadian firms had a decrease in paper annual sales* in 1999, and these were Nexfor (-13%), Alliance (-10%), and Repap Enterprises (-7%). Weak markets for coated

papers and pulp products had a negative impact on Repap sales. For Nexfor, sales were impacted by divestments of the Masson-Angers newsprint mill and half of its interest in Northwood, Inc. A decrease in sales of Alliance was due primarily to weaker demand for newsprint and pulp.

RETURN ON EQUITY

The effectiveness of a firm to maximize the return on investments is captured by return on equity. By comparing net income to average shareholders' equity, or ROE, an assessment can be made as to how well a firm is utilizing equity for maximizing shareholder value. **Tables 5 and 6** show that weighted 1999 industry means ROE was almost 18% (3% increase) for U.S. firms and 6% (0.1% increase) for Canadian firms.

	1999 ROE	1998 ROE	CHANGE ^a
	%	%	%
Chesapeake	50.4	10.9	39.5
Fort James	47.4	60.8	-13.4
Kimberly-Clark	36.6	27.0	9.6
Procter & Gamble	31.0	31.1	-0.1
Buckeye	28.8	38.9	-10.1
Sonoco	21.8	21.6	0.2
Georgia-Pacific	20.6	2.9	17.7
Schweitzer-Mauduit	16.5	16.5	0.0
Bemis	16.2	15.2	1.0
Caraustar	16.0	23.2	-7.2
Republic Group	15.5	20.9	-5.4
Boise Cascade	13.1	-2.3	15.4
Willamette	12.4	4.5	7.9
P.H. Glatfelter	11.8	10.6	1.2
Greif Bros.	10.8	8.7	2.1
Wausau-Mosinee	10.7	9.8	0.9
Rayonier	10.6	10.0	0.6
Rock-Tenn	9.6	10.9	-1.3
FiberMark	9.5	12.8	-3.3
Smurfit-Stone	9.0	-31.7	40.7
Weyerhaeuser	9.0	6.4	2.6
Mead	8.9	9.7	-0.8
Pope & Talbot	8.4	0.2	8.2
Champion	7.5	2.1	5.4
Badger Paper	6.0	10.1	-4.1
Lydall	5.6	3.9	1.7
Temple-Inland	5.0	3.2	1.8
Bowater	5.0	-2.2	7.2
Westvaco	5.0	5.8	-0.8
Consolidated Papers	4.9	7.7	-2.8
Longview Fibre	4.8	-1.5	6.3
Potlatch	4.4	4.0	0.4
International Paper	1.7	2.5	-0.8
Pactiv	-22.0	6.5	-28.5
Gaylord	NM ^b	NM ^c	NM
Mean (weighted)	17.9%	14.6%	3.3%
Mean (unweighted)	13.3%	10.6%	2.7%

^a Change is absolute or 1999 ROE % minus ROE 1998%

^b NM= not meaningful due to negative shareholders' equity (NI = -\$46 million, SE = -\$69 million)

^c NM= not meaningful due to negative shareholders' equity (NI = -\$83 million, SE = -\$6 million)

Table 5. Return on equity of U.S. pulp, paper, and packaging firms.

	1999 ROE	1998 ROE	CHANGE ^a
	%	%	%
Nexfor	19.8	3.6	16.2
Canfor	15.4	38.5	-23.1
West Fraser	15.3	0.6	14.7
Donohue	14.7	18.0	-3.3
Domtar	9.2	4.8	4.4
Cascades	9.2	7.6	1.6
St. Laurent	6.4	-4.0	10.4
Tembec	2.7	6.6	-3.9
FletcherChallenge	1.7	14.3	-12.6
Alliance	-1.8	2.7	-4.5
Abitibi-Consolidated	-9.7	-1.0	-8.7
Doman Industries	-21.4	-22.7	1.3
Repap Enterprises	NM ^b	NM ^c	NM
Mean (weighted)	6.2%	6.1%	0.1%
Mean (unweighted)	5.1%	5.8%	-0.7%

^a Change is absolute or 1999 ROE % minus ROE 1998%

^b NM = not meaningful due to negative shareholders' equity (NI = -\$47 million, SE = -\$134 million)

^c NM = not meaningful due to negative shareholders' equity (NI = -\$49 million, SE = -\$64 million)

Table 6. Return on equity of Canadian pulp, paper, and packaging firms.

United States

Table 5 indicates that average ROE was almost 18% for U.S. firms, representing an absolute percent increase of 3% from 1998. In 1999, ROE ranged from a high of 50% for Chesapeake to a low of -22% for Pactiv. This high-low range was narrower than in 1998, which had a high of 61% and a low of -32%. Of the 35 U.S. paper firms in the study, 33 firms (94%) had a positive ROE in 1999. Factors contributing to the increase in ROE included strengthened economies that boosted sales, industry consolidation, and relative price stability, which enabled 23 firms (65%) to experience growth in both sales and ROE.

Tissue and specialty paper makers led the way in industry performance, as has been the case for the past several years. The five U.S. firms with the highest ROE were Chesapeake, Fort James, Kimberly-Clark, Procter & Gamble, and Buckeye. Chesapeake's performance (51%) was enhanced by its acquisitions of Field Group and Berry's Limited and one-time gains from the sale of Wisconsin Tissue. Fort James had the second-highest ROE in 1999 at 47%, and while this was a decline from 1998, it showed that Fort James continued a strong leadership position in the industry. Third place Kimberly-Clark (37%) typified the overall strength of tissue producers. Procter & Gamble's ROE of 31% was basically unchanged from the previous year; although earnings were down slightly due to newly implemented organizational initiatives, the decline was offset by an equal decline in equity after the company revalued and wrote-down some of its current assets. Buckeye, the only non-tissue firm in the top five, was fifth with an ROE of 29%.

The five U.S. firms with the greatest percent increase in 1999 ROE were Smurfit-Stone (41%), Chesapeake (40%), Georgia-Pacific (18%), Boise Cascade (15%), and Kimberly-Clark (10%). Smurfit-Stone's ROE increase was impacted substantially by its

restatement of 1998 sales to encompass merging with Jefferson Smurfit and Stone Container. As noted above, Chesapeake made acquisitions as well and also realized a one-time, net income gain from the sale of Wisconsin Tissue. Georgia-Pacific's growth was a result of its acquisitions of Unisource and Wisconsin Tissue (from Chesapeake), which had immediate impacts on earnings, as well as its strong performance in the building product sector. Boise Cascade's increase in ROE reflected its resurgence in the Asian market as well as a strong demand for domestic building products. Kimberly-Clark achieved record sales and operating profits in 1999.

The *five U.S. firms with the lowest ROE* in 1999 were Pactiv (-22%), International Paper (2%), Potlatch (4%), Longview Fibre (5%), and Consolidated Papers (5%). Pactiv's negative ROE was partly due to being spun off from Tenneco. Additionally, Pactiv divested itself of all containerboard assets, resulting in a huge charge against earnings for discontinued operations. For Consolidated Papers and International Paper, the ROE decrease was directly tied to retiring and selling paper machines. Consolidated Papers sold Castle Rock Container while International Paper purchased Union Camp and then proceeded to shut down machines throughout its system to reduce capacity. The costs involved in machine downtime and the charges incurred from asset shutdowns had significant impacts on both firms. Since Longview Fibre and Potlatch are heavily involved in the paperboard and packaging sector, the price fluctuations of this market in 1999 had an adverse effect on the earnings of the two firms. Longview's lack of diversification and heavy reliance on the paperboard industry made it difficult for the company to maximize returns.

The five U.S. firms with the greatest percent decrease in ROE were Pactiv (-29%), Fort James (-13%), Buckeye (-10%), Caraustar (-7%), and Republic Group (-5%). Fort James's decline in ROE was tempered by the fact that its ROE for 1999 is still an impressive 47%. For both Buckeye and Caraustar, a reduction in net income and an increase in shareholder's equity contributed to the decline in ROE, and Buckeye's refraining from paying a 1999 dividend resulted in its shareholder's equity increase in 1999.

Canada

The industry mean ROE for Canadian firms in 1999 was 6.2%, an increase of 0.1% over 1998 (Table 6), with the increase at least partially due to having a full-year of earnings after a strike-impacted 1998. ROE ranged from a high of 20% for Nexfor to a low of -21% for Doman Industries. As with U.S. firms, the ROE range was tighter than in 1998 (high of 39% to a low of -23%).

Firms with the highest ROE were Nexfor (20%), followed by Canfor (15%), and West Fraser (15%). Nexfor's strong position was a result of the divestment of the Masson-Angers newsprint mill while Canfor's was due to the earnings realized from its acquisition of Northwood. Although West Fraser has is one of the smallest Canadian firms, sales increased about 18%, causing a significant increase in its ROE.

The Canadian firms with the *lowest* ROE in 1999 were Doman Industries (-21%), Abitibi-Consolidated (-10%) and Alliance (-2%). Doman Industries pursued a policy of reducing inventory and indebtedness in response to market conditions, and the result was reductions in both shareholders' equity and net income. Abitibi-Consolidated's decline was attributed to charges associated with mill closures and modernization. For Alliance, the drop was a result of an initiative to rebuild machines and restructure facilities, and the costs involved led to negative earnings and ROE. The greatest percent decreases in ROE were reported by Canfor (-23%), Fletcher Challenge (-13%), and Abitibi-Consolidated (-9%).

EARNINGS PER SHARE

Earnings per share (EPS) is a profitability ratio measuring earnings available to holders of common equity. Diluted EPS is defined as net income (loss) minus preferred dividends, divided by the average number of common shares outstanding plus the value of dilution that would occur if “potentially dilutive securities” or “common share equivalents” were converted into common stock that then shared in the earnings. Generally, diluted EPS reflects the potential dilution effect of stock options and convertible debt. It should be noted that included in net income are extraordinary gains (losses), accounting changes, and gains (losses) on the disposition of assets. Also, the average number of outstanding shares frequently changes from year to year due to the granting of additional stock options and stock dividends, so to facilitate an accurate comparison of change between 1998 and 1999 EPS, 1998 EPS values were restated using the 1999 number of average outstanding shares.

Overall, industry performance for North America was impressive in 1999. **Tables 7 and 8** show the EPS of U.S. and Canadian pulp and paper firms. U.S. firms experienced a 58% increase in EPS, to US\$ 2.18 in 1999 from US\$ 1.38 in 1998. Canadian firms had an even more dramatic increase, 625%, to US\$ 0.58 in 1999 from US\$ 0.08 in 1998.

United States

The 1999 average weighted EPS for U.S. pulp and paper firms was US\$ 2.18, a 58% increase over 1998 (Table 7). In 1999, EPS ranged from a low of -US\$ 2.05 to a high of US\$ 12.29. Overall, 1999 proved to be a much better year than 1998. Only two U.S. firms (Gaylord and Pactiv) reported negative EPS. The remaining 33 firms reported a positive EPS for 1999.

The *top five* U.S. firms for EPS in 1999 were Chesapeake (US\$ 12.29), Georgia Pacific (US\$ 4.07), Kimberly Clark (US\$ 3.09), Boise Cascade (US\$ 3.06), and Procter & Gamble (US\$ 2.59). Besides better economic conditions in 1999, the combinations of divestitures and acquisitions also had a positive impact on EPS. Chesapeake's high EPS was primarily due to gains on the sale of the Wisconsin Tissue Mill and 278,000 acres of timberland. Georgia Pacific's acquisition of Unisource and a reduction in the effective corporate tax rate contributed significantly to EPS. Kimberly-Clark's third place ranking

was attributed to both record sales and operating profits. Boise Cascade's performance was due to increased sales in office products, strong market for wood products, and US\$ 48 million cost savings in paper products. Procter & Gamble is a large, diverse firm where pulp and paper constitute only 30% of sales; as a result, a substantial portion of earnings is derived from non-paper sources. For Kimberly-Clark and Georgia Pacific relatively high EPS were generated by tissue sales that outpaced the rest of the pulp and paper industry.

	1999 EPS	1998 EPS ^a	CHANGE
	US\$	US\$	%
Chesapeake	12.29	2.32	429.7
Georgia-Pacific	4.07	0.56	626.8
Kimberly-Clark	3.09	2.04	51.5
Boise Cascade	3.06	-0.88	447.7
Procter & Gamble	2.59	2.60	-0.4
Weyerhaeuser	2.55	1.42	79.6
Rayonier	2.44	2.26	8.0
Champion	2.41	0.78	209.0
Fort James	2.35	2.25	4.4
Willamette	2.33	0.79	195.0
Greif Bros.	2.24	1.64	36.6
Bemis	2.18	1.92	13.5
Mead	1.99	1.14	74.6
Schweitzer-Mauduit	1.99	1.96	1.5
Sonoco	1.83	1.75	4.6
Temple Inland	1.78	1.15	54.8
Caraustar	1.63	2.06	-20.9
Bowater	1.41	-0.33	527.3
Potlatch	1.41	1.29	9.3
Buckeye	1.32	1.51	-12.6
Republic Group	1.29	1.51	-14.6
FiberMark	1.15	1.47	-21.8
Rock-Tenn	1.13	1.19	-5.0
Westvaco	1.11	1.31	-15.3
Pope & Talbot	1.05	0.02	5,150.0
P.H. Glatfelter	0.98	0.85	15.3
Wausau-Mosinee	0.81	0.78	3.9
Consolidated Papers	0.73	1.13	-35.4
Smurfit-Stone	0.71	-0.91	178.0
Lydall	0.68	0.27	151.9
Badger Paper	0.58	0.89	-34.8
International Paper	0.44	0.60	-26.7
Longview Fiber	0.39	-0.13	400.0
Gaylord Container	-0.87	-1.54	43.5
Pactiv	-2.05	0.83	-347.0
Mean (weighted)	\$2.18	\$1.38	58.0%
<i>Mean (unweighted)</i>	<i>\$1.80</i>	<i>\$1.04</i>	<i>73.1%</i>

^a 1998 Earnings divided by 1999 average number of outstanding shares

Table 7. Earnings per share of U.S. pulp, paper, and packaging firms.

	1999 EPS ^a	1998 EPS ^{b,c}	CHANGE ^d
	US\$	US\$	%
West Fraser	3.20	0.03	10,566.7
Nexfor	1.11	0.15	640.0
Canfor	1.08	-2.16	150.0
Donohue	1.06	1.14	-7.0
St. Laurent	1.14	-0.47	342.6
Domtar	0.58	0.26	123.1
Cascades	0.58	0.45	28.9
Tembec	0.22	0.52	-57.7
FletcherChallenge	0.20	1.62	-87.7
Repap Enterprises	-0.04	0.05	-20.0
Alliance	-0.30	0.48	-162.5
Doman Industries	-0.95	-1.25	-24.0
Abitibi-Consolidated	-0.98	-0.11	-790.9
Mean(weighted)	\$0.58	\$0.08	625.0%
Mean(unweighted)	\$0.53	\$0.05	960.0%

^a Presented in US\$ using the 1999 exchange rate of C\$1 = US\$0.6730
^b Presented in US\$ using the 1998 exchange rate of C\$1 = US\$0.6743
^c 1998 Earnings divided by 1999 average number of outstanding shares
^d Percent change calculated using Canadian dollar to avoid currency fluctuation distortion

Table 8. Earnings per share (US\$) of Canadian pulp, paper, and packaging firms.

Twenty-four firms (69%) of the U.S. paper industry reported an increase in 1999 EPS. The *five U.S. firms with the greatest percent increase in EPS 1999* were Pope & Talbot increased (5150%), Georgia Pacific (627%), Bowater (527%), Boise Cascade (448%), and Chesapeake (430%). From US\$ 0.02 EPS in 1998, Pope & Talbot's EPS increased to US\$ 1.05 in 1999. Pope & Talbot benefited largely from strong pulp and lumber markets. Higher prices helped increase operating profit from US\$ 1.3 million to US\$ 43 million. Pope & Talbot benefited largely from strong pulp and lumber markets. Higher prices helped their pulp segment significantly reduce operating loss compared to 1998 and the lumber segment increased operating profit from US\$ 1.3 million to US\$ 43 million. Bowater's (525%) acquisition of Avenor in late 1998 provided a 51% increase in sales and associated earnings. Asset sales, which constituted a gain of US\$ 1.32 per share in 1999 and a loss of US\$ 1.39 in 1998 had a significant effect on Bowater's overall increase as well. The increases reported by Georgia Pacific (627%), Boise Cascade (448%), and Chesapeake (430%) were all explained in the preceding section.

The *five U.S. firms with the lowest EPS in 1999* were Pactiv, Gaylord Container, Longview Fiber, International Paper, and Badger Paper. Pactiv, reporting the lowest EPS of -US\$ 2.05, said the loss was largely due to continuing losses in operations (-US\$ 0.67/share) and restructuring costs (-US\$ 1.15/share). Gaylord reported a -US\$ 0.87 EPS, despite an improvement from last year. High interest expenses relative to operating income contributed to negative EPS. The remaining three firms at the bottom of the list are Longview Fibre (US\$ 0.39), International Paper (US\$ 0.44), and Badger Paper (US\$ 0.58). Longview Fibre was able to increase EPS 1998, but labor costs remained very high. International Paper's low EPS was related to the several acquisitions made during the year, such as the acquisition of Union Camp that resulted

in a US\$ 352 million charge against earnings for merger-related expenses and asset shutdowns. Finally, rising costs of raw materials negatively affected Badger Paper. The price of pulp purchased by Badger increased significantly, while the price of finished paper did not keep pace. What these five firms have in common was that they are heavily involved in the paperboard and packaging sector, and thus all were adversely affected by the price fluctuations in 1999.

In 1999, 11 firms (31%) of the U.S. industry reported a decrease in EPS. The *five U.S. firms with the greatest percent decrease in EPS* were Pactiv (-347%), Badger Paper (-35%), Consolidated Papers (-35%), International Paper (-27%), and FiberMark (-22%). For Consolidated Papers, low prices and reduced mill operating rates contributed to the drop in EPS. FiberMark incurred charges against income related to facility closures that decreased 1999 EPS.

Canada

The industry means for EPS were US\$ 0.58 and US\$ 0.08 in 1999 and 1998 respectively, representing a 625% increase (Table 8). Although the Canadian paper industry experienced oversupply in the beginning of 1999, the situation improved in the second half of the year. Firms with significant lumber and panel operations generally outperformed those in newsprint or kraft production. A somewhat stronger U.S. dollar relative to the Canadian dollar, as well as an increase in prices for wood products, which was fueled by rising demand on housing in the United States, were primary determinants to the increase in EPS. EPS ranged from a high of US\$ 3.20 for West Fraser to a low of -US\$ 0.98 for Abitibi-Consolidated.

Nine firms (69%) of the Canadian industry had a positive EPS in 1999. *The Canadian firms with the greatest EPS* in 1999 were West Fraser, Nexfor, and Canfor. West Fraser reported the highest EPS at US\$ 3.20, Nexfor was second at US\$ 1.11, and Canfor third at US\$ 1.08. West Fraser benefited significantly from higher prices for lumber and panels and reported record company sales and profits in 1999. Nexfor's high EPS was attributed to strong demand for lumber and panels. Additionally, the company implemented a margin-improving program that contributed approximately US\$ 44 million to earnings. Divestitures and non-recurring items materially added to EPS as well. Canfor acquired Northwood assets from Nexfor, which contributed directly to increased earnings. Canfor also reported operational improvements as factors to their success.

Six firms (46%) reported an increase in 1999 EPS. The *firms with the greatest percent increase in EPS* were West Fraser (10,567%), Nexfor's (640%) and St. Laurent's (343%). West Fraser and Nexfor were discussed previously, and a large savings in sales-related costs led to increased operating earnings for St. Laurent in 1999.

Four firms (31%) reported negative EPS for 1999. The *firms with the lowest EPS* in 1999 were Abitibi-Consolidated, with a -US\$ 0.98 EPS, Doman Industries -US\$ 0.95 loss, and Alliance -US\$ 0.30. Abitibi-Consolidated suffered from low newsprint prices for

much of the year as well as restructuring costs associated with the Chandler Mill closure. Newspaper operations for Abitibi reduced earnings by almost US\$ 100 million. Doman achieved high prices for most of their products but lower production attributed to a company policy of debt and inventory reduction thus depressed earnings. The company reported that per-unit costs increased as production decreased and that some prices had to be discounted to achieve sales volume. High interest costs associated with bank financing contributed to the negative EPS as well. Alliance experienced a dramatic reduction in gross profit margin from 8.7% in 1998, down to less than 1% in 1999. This resulted in large losses in pulp and newspaper operations.

The firms with the greatest percent decrease in EPS were led by Abitibi-Consolidated, with a 791% decline in EPS. The reasons for the dramatic drop and the lowest absolute EPS are the same; exposure to a weak newspaper market and restructuring charges. The other two firms showing significant declines in EPS were Alliance and Fletcher Challenge. Alliance experienced the second worst decline (-163%) followed by Fletcher Challenge (-88%). Fletcher Challenge cited exchange rate sensitivity that reduced earnings by approximately US\$ 4 million and the strike.

LEVERAGE

When the return on an asset is expected to exceed its cost, firms can justify acquiring debt to obtain such an asset. As such, the debt to equity (D/E) ratio measures a firm's risk or indebtedness, by comparing total liabilities to total shareholder's equity. Firms with debt to equity ratios greater than 1.0 are generally considered more risky. In a capital-intensive industry like pulp and paper, D/E ratios are commonly greater than 1.0 and may go as high as 2.0 or 3.0. In general, a firm with a relatively low D/E ratio has a lower risk when borrowing fund to expand while a firm with a high D/E ratio assumes greater risk when borrowing for capital spending. Therefore, a firm with high D/E ratio and low earnings is at risk of bankruptcy.

The weighted mean D/E ratios in the United States was 2.18 for 1999, a -0.04% decrease from 2.22 in 1998. While the mean D/E ratio in the United States was higher than that of Canada (1.33 in 1999 and 1.28 in 1998), both countries experienced very little change from the previous year. Perhaps the most intriguing difference between the United States and Canada is that the range of the D/E ratio narrowed in the United States from 1998 to 1999 whereas Canada's range expanded, as will be discussed in the two following sections.

United States

Table 9 indicates that the industry average D/E ratio was 2.18, a decrease of -0.04 from 2.22 in 1998. This slight decrease resulted from a total industry debt increase of 3%, to almost US\$ 125 billion in 1999 which was offset by an 6% increase in equity, to over US\$ 66 billion. This minimal change in leverage demonstrated industry commitment to control leverage and debt. Unweighted D/E in 1999 was 1.91 and 1.93

in 1998, respectively. The discrepancy between weighted average and industry total figures is a result of the tendency of larger companies to leverage themselves further.

	1999 D/E RATIO	1998 D/E RATIO	CHANGE %
Greif Bros.	0.9	0.9	0.0
Lydall	0.9	1.1	-0.2
Temple-Inland	1.0	1.1	-0.1
Bemis	1.1	1.2	-0.1
Willamette	1.2	1.3	-0.1
Mead	1.3	1.3	0.0
Westvaco	1.3	1.2	0.1
Badger Paper	1.4	1.6	-0.2
Schweitzer-Mauduit	1.4	1.4	0.0
Wausau-Mosinee	1.4	1.3	0.1
Chesapeake	1.5	1.2	0.3
Kimberly-Clark	1.5	1.9	-0.4
Pope & Talbot	1.5	1.8	-0.3
Sonoco	1.5	1.5	0.0
Bowater	1.6	1.9	-0.3
Consolidated Papers	1.6	1.7	-0.1
Republic Group	1.6	0.4	1.2
Weyerhaeuser	1.6	1.8	-0.2
Champion	1.7	1.9	-0.2
Potlatch	1.7	1.6	0.1
Procter & Gamble	1.7	1.5	0.2
Rock-Tenn	1.7	1.8	-0.1
P.H. Glatfelter	1.8	1.9	-0.1
International Paper	1.9	1.9	0.0
Longview Fibre	1.9	2.0	-0.1
Boise Cascade	2.2	2.5	-0.3
Caraustar	2.2	1.7	0.5
Pactiv	2.4	1.7	0.7
Rayonier	2.5	1.5	1.0
FiberMark	2.8	2.2	0.6
Georgia-Pacific	3.1	2.6	0.5
Buckeye	3.2	3.8	-0.6
Smurfit-Stone	4.3	6.1	-1.8
Fort James	5.4	6.3	-0.9
Gaylord Container	NM ^a	NM ^b	NM
Mean (weighted)	2.18	2.22	-0.04%
Mean (unweighed)	1.91	1.93	-0.02%

^a Due to negative shareholders' equity of (\$90,800,000), Gaylord's D/E is not meaningful in 1999
^b Due to negative shareholders' equity of (\$47,500,000), Gaylord's D/E is not meaningful in 1999

Table 9. Debt/Equity ratios of U.S. pulp, paper, and packaging firms.

Of the 35 U.S. paper firms in the study, 18 (51%) decreased their leverage. The D/E ratio ranged from a high of 5.4 (Fort James) to a low of 0.9 (Greif Bros. and Lydall). D/E in 1998 ranged from a high of 6.3 (Fort James) to a low of 0.4 (Republic Group). Fort

James had an even higher D/E ratio last year (6.4) but lowered D/E this year through retiring US\$ 500 million in debt and increasing equity by US\$ 75 million.

Firms with the highest D/E ratio for 1999 were Fort James (5.4), Smurfit-Stone (4.3), Buckeye (3.2), Georgia-Pacific (3.1), and FiberMark (2.8). An examination of the relative sizes of these companies (in terms of total sales) reveals Fort James, Smurfit-Stone, and Georgia-Pacific are among the 10 largest firms, suggesting that larger firms tend to have a relatively larger burden of debt.

The *U.S. firms with the lowest D/E ratio* were Greif Bros. (0.9), Lydall (0.9), Temple-Inland (1.0), Bemis (1.1), and Willamette (1.2). Of these five, Greif Bros., Lydall, and Bemis all carry less than US\$1 billion in debt. What these five firms have in common is that they are all either medium or small firms in terms of the amount of sales in the industry.

Firms that experienced the *most dramatic decrease in D/E ratio* between 1998 and 1999 were Smurfit-Stone (-1.8%), Fort James (-0.9%), Buckeye (-0.6%), Kimberly-Clark (-0.4%), and a tie (-0.3%) among Pope & Talbot, Bowater, and Boise Cascade. Smurfit-Stone retired \$1 billion in debt; Fort James had a combination of debt reduction (US\$ 500 million) and equity increase (US\$ 100 million), and Buckeye is a small firm and carries little debt overall, making any change is magnified. Kimberly-Clark increased equity by US\$ 1 billion.

The five U.S. firms with the *highest D/E ratio* were Fort James (5.4), Smurfit-Stone (4.3), Buckeye (3.2), Georgia-Pacific (3.1), and FiberMark (2.8). In 1999, all these firms, except FiberMark, remained in the same ranks. Boise Cascade, which occupied the fifth rank with the D/E ratio of 2.5 in 1998, had increased equity in order to decrease risk, thus dropping out from the top five in 1999.

The five firms that experienced the *most dramatic increase in D/E ratio* between 1998 and 1999 were Republic Group (1.2), Rayonier (1.0), Pactiv (0.7), FiberMark (0.6), and Georgia-Pacific (0.5). All the firms except Georgia-Pacific are relatively small firms (bottom third in terms of sales), further reinforcing the notion that the ratio between debt and equity is magnified when the size of the total sales is small. Georgia-Pacific acquired more than US\$ 3 billion in debt and other liabilities (US\$ 11 billion in 1999 from US\$ 8 billion in 1998) while keeping equity constant.

Canada

As **Table 10** reports, the weighted mean D/E ratio for Canadian firms in 1999 was 1.33, an increase of 0.05% from 1998. Total debt increased slightly from US\$ 20.07 billion to US\$ 20.15 billion (less than 0.01%) while equity remained constant at almost US\$ 15 billion.

	1999 D/E RATIO	1998 D/E RATIO	CHANGE %
Fletcher Challenge	0.2	0.1	0.1
Nexfor	0.8	1.2	-0.4
Alliance	0.9	0.8	0.1
St. Laurent	0.9	0.8	0.1
Domtar	1.2	1.4	-0.2
West Fraser	1.2	1.4	-0.2
Donohue	1.3	1.5	-0.2
Abitibi-Consolidated	1.5	1.2	0.3
Canfor	1.6	2.1	-0.5
Tembec	1.8	1.7	0.1
Cascades	2.8	3.0	-0.2
Doman Industries	5.4	4.3	1.1
Repap Enterprises	NM ^a	NM ^b	NM
Mean (weighted)	1.33	1.28	0.05%
Mean (unweighted)	1.63	1.62	0.01%

^a Due to negative shareholders' equity of (\$157,600,000), Repap's D/E is not meaningful in 1999

^b Due to negative shareholders' equity of (\$110,800,000), Repap's D/E is not meaningful in 1998

Table 10. Debt/Equity ratios of Canadian pulp, paper, and packaging firms.

Of the 13 Canadian firms, six (46%) decreased leverage. The D/E range widened in 1999, from a high of 5.4 (Doman) to a low of 0.2 (Fletcher Challenge). The high in 1998 was 4.3 (Doman) and low was 0.1 (Fletcher Challenge).

Firms with the highest D/E ratio were Doman Industries (5.4), Cascades (2.8), and Tembec (1.8). Doman increased debt by \$12 million and decreased equity by US\$ 55 million. While Cascades had the second highest D/E ratio, it was a decrease of -0.2% from 1998 due to reducing debt to US\$ 100 million, from US\$ 1.87 billion, and increasing equity from US\$ 31 million to US\$ 618 million. The firms with the most dramatic increase in D/E from 1998 to 1999 were Doman (1.1), Abitibi (0.3), and Alliance (0.1). Other than Doman (discussed above), we would expect Abitibi and Alliance's increases to be small, since the industry as a whole remained constant and Doman's increase was substantial.

Those with the lowest D/E ratio in 1999 were Fletcher Challenge (0.2), Nexfor (0.8), and St. Laurent (0.9). The three Canadian companies that experienced the most dramatic decrease in D/E were Canfor (-0.5) and Nexfor (-0.4).

CAPITAL EXPENDITURES AND INTENSITY

Capital expenditures include regulatory or technological improvements, property, plant and equipment additions, and acquisitions of paper-related facilities. In our study, the acquisition of an entire firm and mergers between firms were not included in assessing capital expenditures. The pulp, paper, and packaging industry is capital-intensive (16),

implying that during economic downturns it may be difficult to quickly adjust cost structures to compensate for lower revenues (17). To compensate for lower revenues during market downturns, many paper firms have reduced capital expenditures. As a result (Tables 11 and 12). In order to attract investment capital, paper firms have not only scaled back capital spending, but also focused more on corporate repositioning and analyzed all capital projects more critically for potential returns. This reaction was essential in ensuring better performance in 1999 for both the U.S. and Canadian companies.

	CAPITAL EXPENDITURES			CAPITAL INTENSITY		
	1999	1998	CHANGE	1999 ^b	1998 ^b	CHANGE ^c
	US\$ million ^a	US\$ million ^a	%	%	%	%
Proctor & Gamble	2,828	2,559	10.5	25	24	1
International Paper	888	1,048	-15.3	5	5	0
Kimberly-Clark	763	649	17.6	6	5	1
Fort James	486	432	12.5	7	6	1
Georgia-Pacific	399	389	2.6	4	7	-3
Weyerhaeuser	279	325	-14.2	6	8	-2
Willamette	223	336	-33.6	9	14	-5
Champion	211	305	-30.8	5	7	-2
Westvaco	209	396	-47.2	7	14	-7
Potlatch	203	109	86.2	20	12	8
Mead	189	359	-47.4	5	10	-5
Bowater	183	200	-8.5	9	11	-2
Smurfit-Stone	156	287	-45.6	2	8	-6
Consolidated Papers	151	345	-56.2	8	17	-9
Bemis	136	138	-1.5	7	7	0
Boise Cascade	116	120	-3.3	5	6	-1
Sonoco	113	165	-31.5	5	8	-3
Republic Group	112	14	700.0	152	18	134
Wausau-Mosinee	80	66	21.2	8	7	1
Rock-Tenn	80	70	14.3	7	6	1
Temple-Inland	80	79	1.3	4	5	-1
Chesapeake	67	61	9.8	6	7	-1
Buckeye	52	67	-22.4	8	11	-3
Rayonier	51	59	-13.6	11	12	-1
Caraustar	33	39	-15.4	4	5	-1
Pactiv	33	64	-48.4	4	8	-4
Longview Fibre	27	68	-60.3	4	12	-8
Schweitzer-Mauduit	26	37	-29.7	5	7	-2
P. H. Glatfelter	24	41	-41.5	4	6	-2
Greif Bros.	23	20	15.0	5	4	1
Gaylord Container	20	40	-50.0	2	5	-3
Pope & Talbot	15	12	25.0	6	6	0
FiberMark	14	13	7.7	5	5	0
Lydall	14	15	-6.7	5	8	-3
Badger Paper	3	3	0.0	4	5	-1
Mean (weighted)	\$685	\$721	-5.0%	8%	9%	-1%
Mean (unweighted)	\$237	\$255	-7.1%	11%	9%	2%

^a Pulp, paper, and packaging assets, excluding acquisition of or merger with other firms
^b Capital intensity = pulp, paper, and packaging capital expenditures/pulp, paper, and packaging annual sales
^c Change is absolute (i.e., 1999% minus 1998%)

Table 11. Capital expenditures (millions) of U.S. pulp, paper, and packaging firms.

	CAPITAL EXPENDITURES			CAPITAL INTENSITY		
	1999	1998	CHANGE ^d	1999 ^e	1998 ^e	CHANGE ^f
	US\$ million ^{a,b}	US\$ million ^{a,c}	%	%	%	%
Abitibi-Consolidated	203	444	-54.3	8	21	-13
Donohue	176	50	252.0	14	4	10
Domtar	116	117	-0.9	7	9	-2
Cascades	91	180	-49.4	5	11	-6
Alliance	68	63	7.9	14	12	2
Fletcher Challenge	61	30	103.3	9	16	-7
St. Laurent	56	47	19.2	7	7	0
Tembec	37	60	-38.3	5	9	-4
Nexfor	30	81	-63.0	4	9	-5
Canfor	29	14	107.1	3	2	1
Repap Enterprises	20	13	53.9	5	3	2
West Fraser	7	19	-63.2	2	6	-4
Doman Industries	1	13	-92.3	1	8	-7
Mean (weighted)	\$103	\$152	-32.2%	7%	10%	-3%
Mean (unweighted)	\$69	\$87	-20.7%	6%	9%	-3%

^a Pulp, paper, and packaging assets, excluding acquisition of or merger with other firms
^b 1999 exchange rate C\$1 = US\$0.6730
^c 1998 exchange rate C\$1 = US\$0.6743
^d Percent change calculated using Canadian dollar to avoid currency fluctuation distortion and not capital expenditure increases or decreases
^e Capital intensity = pulp, paper, and packaging capital expenditures/pulp, paper, and packaging annual sales
^f Change is absolute (i.e., 1999% minus 1998%)

Table 12. Capital expenditures (millions of US\$) of Canadian pulp, paper, and packaging firms.

Canadian capital expenditures in 1999 were 32% lower than 1998 while spending in the United States was 5% lower than 1998 spending. On average, capital expenditures of Canadian firms were significantly less than counterparts in the US; Canadian firms spent US\$ 103 million while U.S. firms spent US\$ 685 million. This is because most U.S. firms are bigger than the in terms of sales volume. Given that capital expenditures tend to correlate directly with annual sales, capital intensity, which represents the quotient between paper capital expenditures divided by annual paper sales, is reported to eliminate firm size effect. In this way, the industry means of capital intensity in 1999 for the U.S. firms (8%) and Canadian (7%) firms were quite similar.

1999 capital expenditures for Canadian firms ranged from a low of US\$ 1 million to a high of US\$ 203 million while the U.S. range was a low of US\$ 3 million to a high of US\$ 2.8 billion. If the five largest firms are excluded from the 1999 range, the U.S. range narrows to a low of US\$ 3 million and a high of US\$ 279 million; this means that when tissue producers are removed from the analysis, the range of capital expenditures in the United States does not dramatically differ from Canada's.

United States

Capital Expenditures

For the U.S. paper industry, the trend to reduce capital expenditures continued in 1999. The industry average capital expenditures decreased 5%, to US\$ 685 million in capital expenditures from US\$ 721 million in 1998 (Table 11). The 1999 annual reports indicate that capital expenditures were focused primarily on lowering production costs,

improving product quality and meeting environmental compliance. Thirteen firms (37%) reported an increase in the capital expenditures in 1999. The ranges in both 1999 and 1998 were very similar, with expenditures ranging from a low of US\$ 3 million to a high of US\$ 2.8 billion in 1999 and from US\$ 3 million to US\$ 2.6 billion in 1998. Similarly, 1999 capital intensity resembled 1998, with a low of 2% and a high of 25%, when Republic Group, with its phenomenal 1999 capital intensity of 152%, is excluded from the analysis. Mean capital intensity decreased 1% in 1999.

In 1999, tissue and towel manufacturers took a lead in capital spending and accounted for more than 65% of industry capital expenditures. Most large firms had more influence on the average capital expenditures, indicated by the difference between the weighted (US\$ 685 million) and unweighted (US\$ 237 million) means for the industry. Among the top five U.S. firms *spending the most on capital expenditures*, Proctor & Gamble led the industry with US\$ 2.8 billion, followed by International Paper (US\$ 888 million), Kimberly-Clark (US\$ 763 million), Fort James (US\$ 486 million), and Georgia Pacific (US\$ 399 million). These aforementioned firms were also the top-five of the industry in capital spending in 1998. Proctor & Gamble's expenditures included standardization projects in the paper business and capacity expansions in the tissue and towel business. Although International Paper was one of the top spenders, spending was 15% less than in 1998. International Paper reported that new production capacity will be minimal in the next few years, and that the reduction in capital spending is designed to improve return on investment.

The five U.S. firms with the *greatest percent increase in capital spending* include Republic Group (700%), Potlatch (86%), Pope and Talbot (25%), Wausau-Mosinee (21%), and Kimberly-Clark (18%). In 1998, Republic Group was among the bottom five firms with expenditures of only \$14 million; however, in 1999 spending was dramatically increased to US\$ 112 million. The firm is planning construction of a mill for 100% recycled paper that is expected to cost US\$ 170 million. Potlatch experienced a US\$ 60 million reduction in paper sales in 1999, while increasing expenditures by 86% to US\$ 203 million. Potlatch reported that expenditures in the past years had been related primarily to updating facilities, and that after the year 2000 expenditures would be significantly lower. Its spending included construction and modernization of pulp and paper mills.

On the contrary, firms *spending the least on capital expenditures* were Badger Paper (US\$ 3 million), FiberMark (US\$ 14 million), Lydall (US\$ 14 million), Pope and Talbot (US\$ 15 million), and Gaylord (US\$ 20 million). These five firms also had the lowest spending in 1998. A common thread within this group is that none of these firms are tissue producers or major players in the industry.

Twenty-two firms (63%) reported a reduction in capital expenditures in 1999. Firms with the *largest reductions in capital spending* were paperboard and packaging manufacturers, like Longview Fibre (-60%), Consolidated Papers (-56%), Gaylord Container (-50%), Pactiv (-48%), Mead (-47%), and Westvaco (-47%). Longview Fibre

reduced capital spending from \$68 million in 1998 to US\$ 27 million in 1999. It is a small firm that specializes in box and containerboard production and expects expenditures to remain low until earnings improve.

Capital Intensity

Similar to the decrease in capital expenditures, average capital intensity in 1999 was also reduced by -1%, to 8%. Capital intensity ranged from a high of 152% for Republic Group to a low of 2% for Gaylord Container and Smurfit-Stone. This range was much wider as compared to that in 1998, which ranged from a high of 24% for Procter & Gamble to a low of 4% for Greif Bros. When the capital intensity of Republic Group, considered an outlier, is removed from the sample, the intensity range for 1999 resembles that of 1998, with a low intensity of 2% and a high intensity of 25%.

The five firms with the *highest capital intensity* were Republic Group (152%), Procter & Gamble (25%), Potlatch (20%), Rayonier (11%), and Willamette (9%) as well as Bowater (5%). Republic Group experienced the *largest increase in capital intensity* due to a large spending on its plant in Oklahoma. Procter & Gamble continued its relatively high level of capital improvements. Potlatch's increase of 8% was due to spending US\$ 213 million on modernization and expansion, environmental, equipment, safety and general replacement projects, all relative to a decrease in annual paper sales by US\$ 60 million in 1999.

The firms with the *lowest capital intensity* were Gaylord Container (2%) and Smurfit-Stone (2%), followed by half a dozen firms with capital intensity of 4%. In 1999, more than 75% of the firms either maintained or reduced capital intensity. Firms with the *largest reductions in capital intensity* were Consolidated Paper (-9%), Longview Fibre (-7%), Smurfit-Stone (-6%), Westvaco (-6) and Willamette (-5%). Last year Consolidated Paper had a substantially larger intensity was due to the US\$ 149 million buyout of an operating lease at Lake Superior Paper. Many of the companies listed above have the common goal to maintain spending below depreciation costs.

Canada

Capital Expenditures

For the Canadian firms, mean capital expenditures was reduced a substantial 32%, to US\$ 103 million in 1999 from US\$ 152 million in 1998 (Table 12), with seven firms (54%) reducing capital expenditures. Capital expenditures ranged from a high of US\$ 203 million for Abitibi-Consolidated to a low of US\$1 million for Doman Industries. The range was wider in 1998, from a high of US\$ 444 million for Abitibi-Consolidated to a low of US\$ 13 million for Doman Industries and Repap Enterprises. In both years, Abitibi-Consolidated remained the highest spender and Doman the lowest.

The firms *spending the most on capital expenditures* in 1999 were Abitibi-Consolidated (US\$ 203 million), Donohue (US\$ 176 million), and Domtar (US\$ 116 million). In 1998, Abitibi-Consolidated (US\$ 444 million) and Domtar (US\$ 117 million) also lead the industry in capital spending, along with Cascades (US\$ 180 million). Although Abitibi-

Consolidated had the most capital expenditures in both 1998 and 1999, the firm was able to reduce expenditures by -54% and capital intensity by -13%. Abitibi-Consolidated reported that the primary focus in 1999 was cost reductions and the closing or conversion of high-cost capacity. For example, the firm converted the Snowflake, Arizona, newsprint mill to a 100% recycled fiber process. The firm announced a corporate-wide cost reduction program that included a 10% reduction in the workforce and permanent removal of 450,000 tons of paper capacity from the market.

Six firms (46%) reported an *increase in capital expenditures* in 1999. The three with the highest percent increase in capital spending included Donohue (252%), Canfor (107%), and Fletcher Challenge (103%). Donohue's spending was primarily for mill modernization programs. Canfor increased expenditures to upgrade the paper machines for speed and efficiency. For Fletcher Challenge, spending focused on improving quality, equipment efficiencies, and lowering costs.

Those *spending the least on capital expenditures* in 1999 were Doman Industries (US\$ 1 million), West Fraser (US\$ 7 million), and Repap Enterprises (US\$ 20 million). Interestingly, these firms also reported lower levels of annual pulp and paper sales in 1999.

Capital Intensity

In 1999, the average capital intensity was reduced by -3%, to 7% from 10% in 1998 (Table 12). Capital intensity ranged from a high of 14% to a low of 1%. This range was narrower compared to that in 1998, which ranged from a high of 21% for Abitibi-Consolidated to a low of 2% for Canfor.

Firms with the *highest capital intensity* were Donohue (14%), Alliance (14%), and Fletcher Challenge (9%). Donohue's dramatic increase in capital intensity was due to previously mentioned plant modernization programs. Six firms (46%) increased capital spending in 1999, with the *largest increase in capital intensity* being experienced by Donohue (106%), Canfor (109%), and Fletcher Challenge (106%). Increased spending at Donohue included modernization programs. Canfor increased spending to upgrade paper machines for increased speed and the production of high performance papers. Like Donohue and Canfor, spending at Fletcher Challenge was for product quality, equipment efficiencies and lowering costs.

The three firms with the *lowest capital intensity* were Doman Industries (1%), West Fraser (2%), and Canfor (3%). Nine firms (69%) maintained or reduced capital intensity in 1999, and the *largest reductions in capital intensity* were by Abitibi-Consolidated (-13), Doman (-8) and Fletcher Challenge (-7).

INTERNATIONAL BUSINESS

International business activities identifies exports and sales from foreign production facilities. The United States and Canada are globally active in the rapidly expanding forest products markets, and international sales in the paper industry are viewed as crucial to the success of many firms. [In the statistics discussed, unweighted means are used as better measures of sales; weighted means are provided for reader convenience, but caution is needed if using a weighted international sales mean weighted on total sales.] U.S. firms had 20% of total annual sales generated in foreign markets while Canadian firms' foreign sales was 74%. Canadian firms produced pulp and paper in less than 10 foreign countries compared to U.S. firms, which produced in over 40 countries.

U.S. firms had total foreign annual sales of US\$ 43 billion, while Canadian firms had foreign sales of US\$ 12 billion. Both the United States and Canada increased foreign sales in 1999. Foreign sales (see unweighted mean in **Table 13**) increased nearly 9% in the United States during 1999. Canadian foreign sales (**Table 14**) increased almost 20%. Most certainly, the resurgence of Asian markets played a critical role in these sales increases.

United States

Table 13 reports that U.S. firms averaged (unweighted mean) US\$ 1.3 billion in foreign sales in 1999, representing an 8.5% increase from 1998. In 1999, foreign sales ranged from US\$ 18.4 billion for Procter & Gamble to a low of US\$ 36 million for Greif, not including Badger and Republic, which did not sell overseas. Procter & Gamble topped the list with US\$ 18.4 billion and US\$ 17.9 billion of foreign sales in 1999 and 1998, respectively. Its foreign sales were more than three times greater than its closest competitor, International Paper, which reported foreign sales of US\$ 5.4 billion in 1999 and US\$ 5.3 billion in 1998. Other firms *leading annual foreign sales* were Kimberly-Clark (US\$ 4.6 billion), Weyerhaeuser (US\$ 2.3 billion), and Fort James (US\$ 2 billion). These five firms are tissue producers with numerous foreign production facilities. Overall, 26 firms (76%) had an increase in foreign sales, six firms (18%) reported a decrease, and two do not generate foreign sales (6%).

The five U.S. firm with the *greatest percent increase in foreign sales* were Smurfit-Stone (780%), Chesapeake (336%), Lydall (213%), Bowater (117%), and FiberMark (74%). Smurfit-Stone's increase was attributed to a restatement of 1998 foreign sales as a result of the merger between Jefferson Smurfit and Stone Container as well as the divestment of some foreign assets. Chesapeake completed acquisitions of Consumer Promotions International (point-of-sale display manufacturer) and Field Group (European specialty packaging firm) in addition to forming a joint venture with Georgia-Pacific in the tissue business. Lydall managed to more than double its percentage of exports and foreign sales from 18% in 1998 to 39% in 1999. Much of this growth can be attributed to the acquisition of Gerhard, a German firm specializing in the metal heat-shield business. In

addition, Bowater, which acquired a Canadian firm, Avenor, had an increase of 103% and FiberMark rounded out the top-five list with an increase of 64%.

	1999 Foreign sales, US\$ million	1999 Foreign as % of total sales	1998 Foreign sales, US\$ million	1998 Foreign as % of total sales	Change in foreign sales, %	Location of foreign production facilities ^a	Location of foreign sales offices ^a
Procter & Gamble ^b	18,351	48	17,928	48	2.4	ca,e,me,au,a,la	ca,e,me,au,a,la
International Paper	5,421	22	5,297	22	2.3	global	global
Kimberly-Clark	4,614	36	4,305	35	7.2	global	global
Weyerhaeuser	2,258	18	1,767	16	27.8	j,ca,e,o	J,ca,e,o
Fort James	2,020	29	2,039	30	-0.9	c,e,r,t,ca,f	c,r,t,ca,f
Georgia-Pacific	1,278	7	931	7	37.3		e,a,la
Boise Cascade	943	13	858	14	9.9	au,ca,e,f,s,uk,b	au,cae,f,s,uk
Champion	919	17	811	14	13.3	b,ca	b,ca
Smurfit-Stone	792	11	90	3	780.0	ca,g,la	ca,e,la
Westvaco	675	24	722	25	-6.5	b,cz	b,c
Sonoco	666	26	598	23	11.4	global	global
Pactiv ^c	573	20	579	21	-1.0	global	global
Mead ^c	541	14	539	14	0.4	e,ca,a,la	e,ca,a,la
Bowater	486	23	224	11	117.00	ca,k	ca,j,k,b,l,uk,m,o
Rayonier	462	45	422	42	9.5	nz,o	j,k,nz,e,la,c,a
Chesapeake	410	35	94	10	336.2	f,m,ca,uk	e,f,m,ca,uk
Willamette	376	9	370	10	1.6	m,f,ir	
Schweitzer-Mauduit	339	67	370	68	-8.4	f,b	global
Bemis	304	16	278	15	9.4	ca,ir,pr,b,in,a,m,e,uk	e,f,uk,ca
Pope & Talbot	206	42	178	42	15.7	ca	e,ca
Longview Fibre	158	20	135	18	17.0		j,c,a
P.H. Glatfelter	156	23	170	24	-8.2	g,f,p	g,f,p,o
Temple-Inland	130	4	110	3	18.2	ca,m,sa	ca,m,sa
Potlatch	127	8	173	11	-26.6		j,au,ca,chi,o
Lydall ^c	125	39	40	18	212.5	f,g,j	f,g,j
Buckeye	113	18	91	14	24.2	ca,ir,g	global
Consolidated Papers	92	5	88	4	4.6	ca	ca
Wausau-Mosinee	63	7	58	6	8.6		o
Caraustar	60	7	57	8	5.3	ca,m,uk	ca,m,uk
Rock-Tenn ^c	60	5	53	4	13.2	ca,m,ch	ca,m
FiberMark ^b	47	14	27	9	74.1	e,g	e,o
Greif Bros. ^d	36	4	36	4	0.0	ca	
Badger Paper	0	0	0	0	0.0		ca,m
Republic Group	0	0	0	0	0.0		
Gaylord Container ^d	NR	NR	NR	NR	NR		
Mean (weighted)	\$5,804	25%	\$5,842	25%	-0.7%		
Mean (unweighted)^e	\$1,259	20%	\$1,160	17%	8.5%		

^a a=Asia, au=Australia, b=Brazil, c=China, ca=Canada, ch=Chile, cz=Czech Republic, e=Europe, f=France, fi=Finland, g=Germany, gr=Greece, in=India, ir=Ireland, i=Italy, j=Japan, k=Korea, la=Latin America, m=Mexico, me=Middle East, n=Netherlands, nz=New Zealand, o=Unidentified Countries, p=Philippines, pr=Puerto Rico, r=Russia, s=Spain, sa=South Africa, t=Turkey, ta=Taiwan, uk=United Kingdom

^b Foreign sales outside of North America (Canada and Mexico not included)

^c Sales figures reported from foreign manufacturing operations only; U.S. export values not available

^d NR means annual report does not report foreign sales separately from domestic sales

^e Unweighted means are better measures of sales; weighted means are provided for reader convenience, but caution is needed if using a weighted international sales mean weighted on total sales

Table 13. International activities of U.S. pulp, paper, and packaging firms.

	1999 Foreign sales, US\$ million ^a	1999 Foreign as % of total sales	1998 Foreign sales, US\$ million ^b	1998 Foreign as % of total sales	Change in foreign sales, %	Location of foreign production facilities ^a	Location of foreign sales offices ^a
Abitibi-Consolidated	2,469	90	2,057	91	20.0	us,uk,k,c,t	us,uk,k,c,t
Donohue	1,374	82	1,284	83	7.0	us	us,o
Domtar	1,338	64	877	55	52.6	us,f	us,a,e
Tembec	945	84	789	82	19.8	f	us,c,i,s,a,uk,e
Nexfor	926	57	926	57	0.0	us,uk	us,e,a
Canfor	919	78	755	79	21.7	e	us,e,a,o
Cascades	897	51	871	51	3.0	us,f,u,g	us,f,u,g
West Fraser	758	51	622	51	21.9		us,e,a,o
Alliance	623	88	642	88	-3.0	us,o	us,o
Fletcher Challenge	612	87	162	85	277.8		us,a,o
St. Laurent	524	57	453	57	15.7		us,o
Doman Industries	470	80	414	79	13.5		us,e,a,o
Repap Enterprises	341	88	353	85	-3.4	us	us,e,o
Mean weighted	\$1,186	72%	\$957	70%	23.9%		
Mean (unweighted)^d	\$938	74%	\$785	73%	19.5%		

^a 1999 exchange rate C\$1 = US\$0.6730
^b 1998 exchange rate C\$1 = US\$0.6743
^c a=Asian, c=China, e=Europe, f=France, g=Germany, i=Italy, j=Japan, k=Korea, o=Unidentified Countries, s=Switzerland, t=Thailand, uk=United Kingdom, us=U.S.
^d Percent change calculated using Canadian dollar to avoid currency fluctuation distortion and not foreign sales increases or decreases
^e Unweighted means are better measures of sales; weighted means are provided for reader convenience, but caution is needed if using a weighted international sales mean weighted on total sales

Table 14. International activities of Canadian pulp, paper, and packaging firms.

Besides Badger Paper and Republic Group, which had no foreign sales, Greif Bros. (US\$ 36 million), FiberMark (US\$ 47 million), Rock-Tenn (US\$ 60 million) and Carastar (US\$ 60 million) were among the firms with the *lowest annual foreign sales* in 1999. The firms reporting the *greatest percent decreases in foreign sales* between 1999 and 1998 were Potlatch (-27%), Schweitzer-Mauduit (-8%), P.H. Glatfelter (-8%), Westvaco (-7%), and Pactiv (-1%). These firms cumulatively represented less than 5% of the industry by weight.

Canada

In 1999, the Canadian currency remained at about two-thirds of the U.S. dollar, making Canadian goods relatively more attractive than U.S. goods. Canada witnessed a dramatic 20% increase in foreign sales in 1999 (Table 14). Average foreign sales of Canadian firms were US\$ 1.2 billion, representing 24% increase from US\$ 957 million in 1998. Foreign sales ranged from a high of US\$ 2.5 billion for Abitibi-Consolidated to a low of US\$ 341 million for Repap Enterprises. However, the range in 1998 was much wider, from a high of US\$ 2.1 billion for Abitibi-Consolidated to a low of US\$ 162 million for Fletcher Challenge.

Leading annual foreign sales, Abitibi-Consolidated outperformed others in 1999 by nearly twice that of the closest competitor, Donohue, whose foreign sales were US\$ 1.4 billion. The two companies were able to maintain their top rankings in both 1999 and 1998, but Nexfor was replaced by Domtar, which was able to increase foreign sales a

dramatic 53%. The *most dramatic increases in foreign sales* were achieved by Fletcher Challenge (228%), Domtar (53%), West Fraser (22%), Canfor (22%) and Abitibi-Consolidated (20%). Among these firms, Abitibi-Consolidated (90%) and Fletcher Challenge (87%) had the highest percentage of foreign sales as of the total sales.

The *lowest annual foreign sales* were experienced by Repap Enterprises (US\$ 341 million), Doman Industries (US\$ 470 million) and St. Laurent (US\$ 524 million). Repap Enterprises and Doman remained their bottom rankings both in 1999 and 1998, but Fletcher Challenge was able to move its rank up in 1999. In general, most Canadian firms did well in foreign sales with only two firms (15%), Alliance and Repap Enterprises, both reported a *-3% decrease in foreign sales* in 1999.

SUMMARY REMARKS

Our study involved conducting a financial performance analysis of the North America pulp, paper, and packaging industry. We used 1999 annual report data for all publicly owned paper firms--35 in the United States and 13 in Canada. Industry performance was analyzed using various standard financial measures. The analysis showed that the pulp, paper, and packaging industry ended the millennium on a positive note. Several market fundamentals were strong. The end of the decade brought the long awaited relative balance between supply and demand, due to stronger overall demand coupled with less production capacity growth. Business activities continued to be strong in the United States, and Asian and European markets underwent substantial recoveries. Even more dramatic, sales in 1999 dramatically increased. In the United States, total sales increased 9%, paper sales 10%, and foreign sales 9%. Likewise, Canadian firms experienced a 17% increase in total sales, 15% in paper sales, and 20% in foreign sales.

Improvements were seen in performance measures as well, with positive returns on equity, nearly 18% in the United States and 6% in Canada. Very strong growth in earnings per share were experienced, 58% for U.S. firms and a six-fold increase for Canadian firms.

An analysis of capital-related measures suggests industry-wide discipline. Leverage remained unchanged with essentially no growth in debt to equity ratios for both U.S. and Canadian firms in 1999. The trend of reducing capital expenditures continued, with average capital expenditures in 1999 decreased for both U.S. and Canadian firms, -5% and -32% respectively. Capital intensity also decreased, -1% for U.S. firms and -3% for Canadian firms.

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